

MURATA PRODUCTS Lineup 2019



2019 MURATA PRODUCTS Lineup

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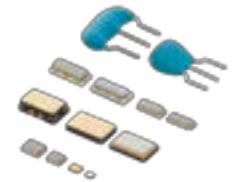
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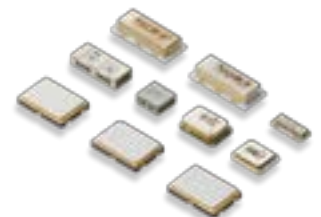
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 Wi-Fi is a registered trademark or trademark of Wi-Fi Alliance in the United States and other countries.
 HDMI is a trademark of HDMI LICENSING L.L.C.



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Capacitors

The most comprehensive product lineup in the industry, providing ideal solutions, responding to all possible requirements.

Summary

Using Murata's unique ceramic material technology, we offer a wide lineup of products. Murata also offers technical support that includes design kits and a comprehensive set of software tools to simulate virtually any circuit condition, satisfying the demands of many applications. We are also expanding our lineup of products that use non-ceramic dielectric materials, such as silicon capacitors, to support various applications.

Lineup

- Ceramic Capacitors (SMD, lead type)
- Polymer Aluminum Electrolytic Capacitors
- Variable Capacitors
- Silicon Capacitors



<https://www.murata.com/en-global/products/capacitor>



Ceramic Capacitors

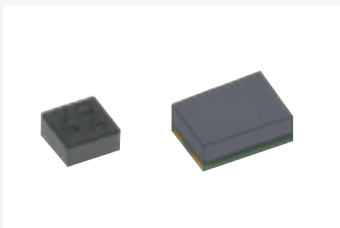
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Murata offers the No. 1 most abundant lineup in the industry, responding to all possible needs, and proposing ideal solutions.

Polymer Aluminum Electrolytic Capacitors

These are high capacity capacitors that are characterized by having a low profile and low ESR.

They handle the stabilization of voltage in circuits where serious voltage control is demanded, and contribute to the advanced features in customer products.

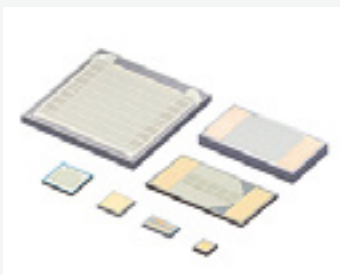


Variable Capacitors

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Variable capacitors can carry out the variable of the capacitor by adjusting the tuning voltage.

They are designed for frequency matching use for HF band (13.56MHz).



Silicon Capacitors

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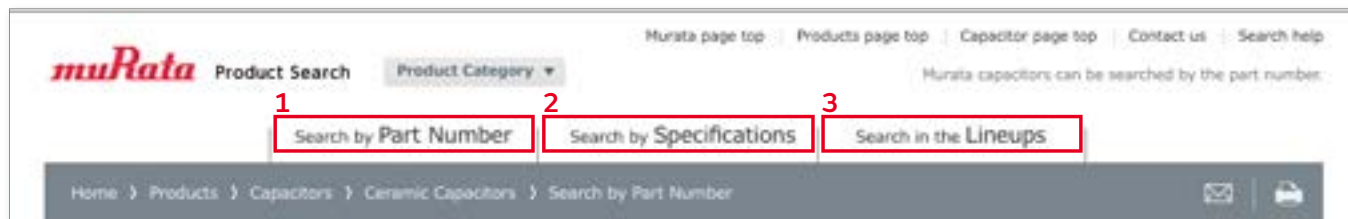
Murata High Density Silicon Capacitors are based on a MOS Semiconductor technology and utilize a 3D structure which substantially increases their performance and enables the compact design. Silicon Capacitors offer small size and low thickness, superior reliability and stability over high temperatures and high frequencies. They are the ideal choice for all demanding markets, such as Networking (RF Power and Broadband), Medical (Implantable devices), Automotive or High Reliability applications. Murata can provide customized Silicon Capacitors or IPDs (Integrated Passive Devices) to optimize your design.

Ceramic Capacitors, Polymer Aluminum Electrolytic Capacitors

WEB Product Search Engine

You can search for products in a variety of ways, including part number, specifications, and lineup.

<https://psearch.en.murata.com/capacitor/partnumber/>



1 Search by Part Number

You can search for capacitors by specifying the alphanumeric characters in the part number. The packing codes shown contain the substitute character "#". If you enter the official packing code, part numbers that contain that packing code will be matched.



2 Search by Specifications

You can search for SMD or lead type capacitors by indicating specifications such as application, capacitance, rated voltage, or temperature characteristics. You can narrow your search by entering values of ranges, and by specifying product characteristics. The items for narrowing searches are linked, so specifying one condition causes selectable options for the other items to allow input only of conditions that match the relevant part numbers.



3 Search in the Lineups

You can search for capacitors by specifying the series lineup. You can also confirm items such as characteristics and applications on each series page.



Search results

Compares the characteristics of the checked part numbers.

Displays the number of hits for the current search conditions in real time.

Clicking on each search condition button brings up a menu, allowing you to narrow the search results to match the selected condition in real time.

Click "Current search terms" to display a menu, from which you can confirm the current conditions for narrowing the search results.

Click the ▲ mark for each item to switch between ascending and descending display.


















Click a product name to display a details page listing more in-depth information.

You can download detailed spec sheets.

Icons enable you to check the status and characteristics of products at a glance.

Ceramic Capacitors, Polymer Aluminum Electrolytic Capacitors

Icons

	For applications that do not require a particular reliability, such as general equipment.
	Infotainment for Automotive Products for entertainment equipment like car navigation, car audio, and body control equipment like wipers and power windows.
	Powertrain/Safety for Automotive Products used for applications (running, turning, stopping, and safety devices) that particularly concern human life, such as in devices for automotive.
	Medical-grade products for Implanted Medical Devices These products are intended for use in implanted medical devices such as cardiac pacemakers, cochlear implants, insulin pumps, and gastric electrostimulators. They are suitable for use in non-critical circuits.*1 *1 Non-critical circuits This term refers to circuits in implanted medical devices that are not directly linked to life support, i.e., circuits that will not directly endanger the life of the patient should the functionality of the device be reduced or halted by failure of the circuit.
	AEC-Q200 compliant product
	Products that acquired safety standard certification IEC60384-14.
	Products that are based on the Electrical Appliance and Material Safety Law of Japan.
	Low dissipation for high frequency By devising ceramic materials and electrode materials, low dissipation is achieved in frequency bands of VHF, UHF, and microwave or beyond.
	Low inductance This capacitor is designed so that the parasitic inductance component (ESL) that the capacitor has on the high frequency side becomes lower.
	Fail safe product This capacitor is designed to prevent failures as much as possible by short mode.
	Product resistant to deflection cracking This capacitor is designed to prevent failures as much as possible by short mode caused by cracking when there is board deflection.
	Product with solder cracking suppression This capacitor is configured with metal terminals and leads connected to the chip. The metal terminals and leads relieve the stress from expansion and contraction of the solder, to suppress solder cracking.
	Product suitable for acoustic noise reduction and low distortion This product suppresses acoustic noise, which occurs when a ceramic capacitor is used, by devising the materials and configuration.
	No DC bias characteristics Polymer capacitor is no capacitance change with DC bias due to aluminum oxidized film for dielectric.
	Low-inductance product suitable for noise suppression This product has extremely low ESL and is suitable for suppression of noise, including high frequencies.
	Product for bonding Since gold is used for the external electrodes, the capacitor can be mounted by die bonding/wire bonding.
	Limited to Conductive Glue Mounting Since silver palladium is used for the external electrodes, the capacitor can be mounted by conductive adhesive.

Ceramic Capacitors, Polymer Aluminum Electrolytic Capacitors

Product Lineup

For general			
General SMD			
Solder mounting			
Chip type			
	GRM		p6
	GRM	For LCD backlight inverter circuit only	p8
	GR3	Anti-noise High effective capacitance & high ripple current	p8
	GRJ	Deflecting crack Soft termination	p9
	GXM	Water Resistance	p9
	GR4	For information devices only	p10
	GR7	For camera flash circuit only	p10
	GJM	High Q	p11
	GQM	High Q	p11
	GA2	Japanese Safety Level Based on the Electrical Appliance and Material Safety Law of Japan	p11
	GA3	Safety standard	p11
	LLL	Low ESL LW reversed	p12
	LLA	Low ESL 8 terminals	p13
	LLM	Low ESL 10 terminals	p13
	LLR	Low ESL LW reversed controlled ESR	p13
	NFM	Low ESL EMI Filter 3 terminals	p14
	GJ4	Anti-noise Low distortion	WEB
On interposer board			
	ZRA	Anti-noise	WEB
	ZRB	Anti-noise	WEB
Metal terminal type			
	KRM	Anti-noise Deflecting crack Soldering crack	p14
	KR3	Anti-noise Deflecting crack Soldering crack High effective capacitance & high ripple current	p15
Resin molding SMD type			
	DK1	Safety standard	p32
Polymer Aluminum Electrolytic Capacitors			
	ECAS	Anti-noise Deflecting crack Effective Cap	p33
	ECNS	Anti-noise Deflecting crack Effective Cap	p33
Wire bonding mounting			
Chip type			
	GMA	Microchip	p15
	GMD		p15
Lead type			
Solder mounting			
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	DE1	Safety standard X1/Y1 Class certified product	p27
	DE2	Safety standard X1/Y2 Class certified product	p29

Infotainment for automotive			
SMD			
Solder mounting			
Chip type			
	GRT		p16
	GXT	Water Resistance	p17

Powertrain/Safety for automotive			
SMD			
Solder mounting			
Chip type			
	GCM		p18
	GC3	Anti-noise High effective capacitance & high ripple current	p19
	GCJ	Fall safe Deflecting crack Soft termination	p19
	GGM	Water Resistance	p20
	GCQ	High Q	p21
	GCD	Fall safe Deflecting crack MLSC design	p21
	GCE	Fall safe Deflecting crack Soft termination MLSC design	p22
	GGD	Fall safe Deflecting crack Water Resistance MLSC design	p22
	NFM	Low ESL EMI Filter 3 terminals	p22
Metal terminal type			
	KCM	Anti-noise Deflecting crack Soldering crack	p22
	KC3	Anti-noise Deflecting crack Soldering crack High effective capacitance & high ripple current	p23
	KCA	Safety standard Anti-noise Deflecting crack Soldering crack	p23
Limited to Conductive Glue Mounting			
Chip type			
	GCB	Deflecting crack Soldering crack Ni plating + Pd plating termination conductive glue mounting	p23
	GCG	Deflecting crack Soldering crack AgPd termination conductive glue mounting	p23
Lead type			
Solder mounting			
	RCE	Anti-noise Deflecting crack Soldering crack	p30
	RHE	Anti-noise Deflecting crack Soldering crack 150°C operation leaded	p31
	RHS	Anti-noise Deflecting crack Soldering crack 200°C operation leaded	p32
	DE6	Safety standard	p32

Medical-grade products for implanted medical devices			
SMD			
Solder mounting			
Chip type			
	GCH		p24

Ceramic capacitors SMD type For General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose

Temperature Compensating Type



GRM

General

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GRM02	0.4X0.2 <01005>	50	0.20pF				100pF								
		25				120pF	220pF								
		16				120pF	220pF								
GRM03	0.6X0.3 <0201>	100	0.10pF				100pF								
		50	0.10pF				220pF								
		25				270pF	1000pF								
GRM15	1.0X0.5 <0402>	50				1000pF	2200pF								
		10				2700pF	4700pF								
GRM18	1.6X0.8 <0603>	100				1000pF	3900pF								
		50				1000pF	10000pF								
		10				5600pF	22000pF								
GRM21	2.0X1.25 <0805>	630			10pF		2200pF								
		250			10pF		10000pF								
		200			10pF		5600pF								
		100					1000pF	22000pF							
		50					2700pF	47000pF							
GRM31	3.2X1.6 <1206>	2000			10pF		68pF								
		1000			10pF		1000pF								
		630			10pF		4700pF								
		500			10pF		4700pF								
		250					390pF	22000pF							
		200					2700pF	10000pF							
		100					4700pF	0.10μF							
		50					12000pF	0.22μF							
GRM32	3.2X2.5 <1210>	2000				82pF	220pF								
		1000					1200pF	2200pF							
		630					1200pF	15000pF							
		500					1200pF	10000pF							
GRM42	4.5X2.0 <1808>	3150			10pF	100pF									
GRM43	4.5X3.2 <1812>	1000					2700pF	4700pF							
		630					12000pF	22000pF							
		500					12000pF	22000pF							
GRM55	5.7X5.0 <2220>	1000					5600pF	10000pF							
		630					27000pF	47000pF							
		500					27000pF	47000pF							

High Dielectric Constant Type



GRM

General

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GRM01	0.25X0.125 <08004>	6.3					1000pF	10000pF							
GRM02	0.4X0.2 <01005>	16				100pF	10000pF								
		10				100pF	10000pF								
		6.3				1000pF	0.10μF								

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors


Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GRM02	0.4X0.2 <01005>	4						15000pF		0.10μF				
		2.5								0.10μF				
GRM03	0.6X0.3 <0201>	50				100pF		1500pF						
		35								0.10μF				
		25				100pF				0.10μF				
		16					2200pF			0.22μF				
		10					4700pF				1.0μF			
		6.3					4700pF				1.0μF			
		4								0.22μF	1.0μF			
		2.5									1.0μF			
GRM15	1.0X0.5 <0402>	35								1.0μF				
		25								1.0μF	2.2μF			
		16									1.0μF	2.2μF		
		10									1.0μF	4.7μF		
		6.3									1.0μF	4.7μF		
		4									1.0μF	10μF		
GRM18	1.6X0.8 <0603>	250				220pF		2200pF						
		200				220pF		2200pF						
		50									2.2μF			
		35									2.2μF	4.7μF		
		25									2.2μF	10μF		
		16									2.2μF	10μF		
		10									2.2μF	10μF		
		6.3									4.7μF	22μF		
GRM21	2.0X1.25 <0805>	500				1000pF		10000pF						
		250				1000pF		22000pF						
		200				1000pF		22000pF						
		100									1.0μF			
		50									4.7μF			
		35									4.7μF	10μF		
		25									4.7μF	22μF		
		16									1.0μF	22μF		
		10									22μF	47μF		
		6.3									22μF	100μF		
GRM31	3.2X1.6 <1206>	1000				470pF		10000pF						
		630				1000pF		22000pF						
		500						15000pF		47000pF				
		250						15000pF		0.22μF				
		200						15000pF		0.10μF				
		50									4.7μF			
		25									22μF			
		16									22μF	47μF		
		10									47μF	100μF		
		6.3									100μF	220μF		
		4									100μF	220μF		
		2.5									150μF	220μF		
GRM32	3.2X2.5 <1210>	1000					6800pF		22000pF					
		630					22000pF		47000pF					
		500						68000pF		0.10μF				
		250						68000pF		0.22μF				
		200						68000pF		0.22μF				
		25									22μF			

Continued on the following page. ↗

Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GRM32	3.2X2.5 <1210>	16											47μF	
		10										47μF	100μF	
		6.3										100μF	220μF	
		4										100μF	220μF	
GRM43	4.5X3.2 <1812>	1000						33000pF	47000pF					
		630						68000pF	0.10μF					
		500							0.15μF	0.22μF				
		250							0.15μF	0.47μF				
		200							0.15μF	0.47μF				
GRM55	5.7X5.0 <2220>	1000						68000pF	0.10μF					
		630							0.15μF	0.22μF				
		500							0.33μF	0.47μF				
		250							0.33μF	1.0μF				
		200							0.33μF	1.0μF				

Chip Multilayer Ceramic Capacitors for LCD Backlight Inverter Circuit only




GRM

General

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GRM42	4.5X2.0 <1808>	3150				5.0pF							47pF	

High Effective Capacitance & High Ripple Current Chip Multilayer Ceramic Capacitors for General Purpose




GR3

General Anti-noise

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GR321	2.0X1.25 <0805>	250						10000pF	22000pF					
GR331	3.2X1.6 <1206>	630						10000pF	15000pF					
		450						10000pF	47000pF					
		250						33000pF	68000pF					
GR332	3.2X2.5 <1210>	630						22000pF	47000pF					
		450						68000pF	0.10μF					
		250							0.10μF	0.15μF				
GR343	4.5X3.2 <1812>	630							68000pF					
		450								0.15μF				
		250								0.22μF	0.33μF			
GR355	5.7X5.0 <2220>	630							0.10μF	0.22μF				
		450								0.22μF	0.47μF			
		250								0.47μF	1.0μF			

Continued on the following page. ↗

Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose




General
Deflecting crack

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GRJ21	2.0X1.25 <0805>	250					1000pF	22000pF						
		100									1.0μF			
		25										10μF		
GRJ31	3.2X1.6 <1206>	1000					470pF	10000pF						
		630					1000pF	22000pF						
		250						15000pF	0.10μF					
GRJ32	3.2X2.5 <1210>	50									4.7μF			
		1000					6800pF	22000pF						
		630					22000pF	47000pF						
		250						68000pF	0.22μF					
		25										22μF		
GRJ43	4.5X3.2 <1812>	10										47μF		
		1000					33000pF	47000pF						
		630						68000pF	0.10μF					
		250							0.15μF	0.47μF				
GRJ55	5.7X5.0 <2220>	1000						68000pF	0.10μF					
		630							0.15μF	0.22μF				
		250								0.33μF	1.0μF			

Water Repellent Chip Multilayer Ceramic Capacitors for General Purpose


Temperature Compensating Type



General
Water Repellent

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GXM15	1.0X0.5 <0402>	50						1000pF						
		10						2700pF	4700pF					
GXM18	1.6X0.8 <0603>	100						1000pF	1500pF					
		50						1000pF	10000pF					
		10							12000pF	22000pF				
GXM21	2.0X1.25 <0805>	100						1000pF	3300pF					
		50						2700pF	47000pF					
		10								56000pF	0.10μF			
GXM31	3.2X1.6 <1206>	50							47000pF	0.10μF				

High Dielectric Constant Type



General
Water Repellent


Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GXM15	1.0X0.5 <0402>	35									1.0μF				
		25									1.0μF	2.2μF			
		16										1.0μF	2.2μF		
		10											2.2μF		
		6.3											1.0μF	2.2μF	
		4												1.0μF	
GXM18	1.6X0.8 <0603>	50											2.2μF		

Continued on the following page. ↗

Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GXM18	1.6X0.8 <0603>	35									2.2μF	4.7μF			
		25									2.2μF	10μF			
		16									2.2μF	10μF			
		10									2.2μF	10μF			
		6.3											10μF		
		4												10μF	
GXM21	2.0X1.25 <0805>	100									1.0μF				
		50										4.7μF			
		35									4.7μF	10μF			
		25									4.7μF	22μF			
		16									10μF	22μF			
		10											22μF		
GXM31	3.2X1.6 <1206>	50										4.7μF			
		16											22μF		
		6.3												47μF	
GXM32	3.2X2.5 <1210>	50										10μF			

Chip Multilayer Ceramic Capacitors for Ethernet LAN and primary-secondary coupling of DC-DC converters




GR4

General

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GR442	4.5X2.0 <1808>	2000				100pF	1500pF							
GR443	4.5X3.2 <1812>	2000					1800pF	4700pF						
GR455	5.7X5.0 <2220>	2000											10000pF	

Chip Multilayer Ceramic Capacitors for Splitter Circuit of G-Fast, xDSL




GR4

General

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GR431	3.2X1.6 <1206>	630					1000pF	4700pF						
GR432	3.2X2.5 <1210>	630						5600pF	15000pF					

Chip Multilayer Ceramic Capacitors for Camera Flash circuit only



GR7


General

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GR721	2.0X1.25 <0805>	350						10000pF	27000pF					
GR731	3.2X1.6 <1206>	350							10000pF	47000pF				

Continued on the following page. ↗


Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

High Q Chip Multilayer Ceramic Capacitors for General Purpose

 **GJM** General High Q


Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GJM02	0.4X0.2 <01005>	25	0.20pF	22pF										
GJM03	0.6X0.3 <0201>	50	0.20pF	0.90pF										
		25		1.0pF		33pF								
GJM15	1.0X0.5 <0402>	50	0.10pF	47pF										

High Q and High Power Chip Multilayer Ceramic Capacitors for General Purpose

 **GQM** General High Q


Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GQM15	1.0X0.5 <0402>	200	0.10pF	33pF										
		100			36pF		47pF							
GQM18	1.6X0.8 <0603>	250		1.0pF		47pF								
GQM21	2.0X1.25 <0805>	500		1.0pF		22pF								
		250		1.0pF		100pF								
GQM22	2.8X2.8 <1111>	500		1.0pF		100pF								

Based on the Electrical Appliance and Material Safety Law of Japan Chip Multilayer Ceramic Capacitors for General Purpose

 **GA2** General Safety standard

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GA242	4.5X2.0 <1808>	AC250 (r.m.s.)					470pF		1000pF					
GA243	4.5X3.2 <1812>	AC250 (r.m.s.)					2200pF		47000pF					
GA255	5.7X5.0 <2220>	AC250 (r.m.s.)								0.10μF				

Safety Standard Certified Chip Multilayer Ceramic Capacitors for General Purpose Type GB IEC60384-14 Class X2

 **GA3 Type GB** General Safety standard

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GA355	5.7X5.0 <2220>	AC250 (r.m.s.)					10000pF		56000pF					

Continued on the following page. ↗

Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

Safety Standard Certified Chip Multilayer Ceramic Capacitors for General Purpose Type GD Acquired certifications of UL60950-1

Temperature Compensating Type



GA3 Type GD

General Safety standard

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GA342	4.5X2.0 <1808>	AC250 (r.m.s.)			10pF	82pF									

High Dielectric Constant Type



GA3 Type GD

General Safety standard

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GA342	4.5X2.0 <1808>	AC250 (r.m.s.)				100pF	1500pF								
GA343	4.5X3.2 <1812>	AC250 (r.m.s.)						1800pF	4700pF						

Safety Standard Certified Chip Multilayer Ceramic Capacitors for General Purpose Type GF Acquired certifications of IEC60384-14 Class X1/Y2 and UL60950-1

Temperature Compensating Type



GA3 Type GF

General Safety standard

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GA342	4.5X2.0 <1808>	AC250 (r.m.s.)			10pF	82pF									

High Dielectric Constant Type



GA3 Type GF

General Safety standard

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (V)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GA342	4.5X2.0 <1808>	AC250 (r.m.s.)				100pF	1000pF								
GA352	5.7X2.8 <2211>	AC250 (r.m.s.)				100pF	1500pF								
GA355	5.7X5.0 <2220>	AC250 (r.m.s.)						1800pF	4700pF						

LW Reversed Low ESL Chip Multilayer Ceramic Capacitors for General Purpose



LLL

General Low ESL


Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
LLL15	0.5X1.0 <0204>	6.3							0.10μF	0.22μF					
		4							0.47μF	1.0μF					
LLL1U	0.6X1.0 <02404>	4									4.3μF				
LLL18	0.8X1.6 <0306>	50						2200pF	4700pF						
		25					10000pF	22000pF							
		16						22000pF	47000pF						
		10							0.10μF	0.22μF					

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
LLL18	0.8X1.6 <0306>	4									0.22μF	2.2μF			
LLL21	1.25X2.0 <0508>	50						10000pF	22000pF						
		25							22000pF	0.10μF					
		16								47000pF	0.22μF				
		10									0.22μF	1.0μF			
		6.3											0.47μF		
LLL31	1.6X3.2 <0612>	50						10000pF	0.10μF						
		25							47000pF	0.47μF					
		16								0.22μF	1.0μF				
		10									0.47μF	2.2μF			
		6.3											2.2μF	10μF	


8 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose



General
Low ESL

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
LLA18	1.6X0.8 <0603>	4									0.10μF	2.2μF			
LLA21	2.0X1.25 <0805>	25						10000pF	47000pF						
		16							47000pF	0.22μF					
		10								0.22μF	0.47μF				
		6.3									0.47μF	1.0μF			
		4										1.0μF	4.7μF		


10 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose



General
Low ESL

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
LLM21	2.0X1.25 <0805>	25						10000pF	22000pF						
		16							47000pF	0.10μF					
		6.3									0.22μF	0.47μF			
		4											1.0μF		

LW Reversed Controlled ESR Low ESL Chip Multilayer Ceramic Capacitors for General Purpose




General
Low ESL

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	ESR (mΩ)				Capacitance Range
			100	220	470	1000	
LLR18	0.8X1.6 <0306>	4					1.0μF

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

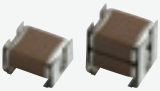
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose



General
Low ESL
EMI Filter

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
NFM15	1.0X0.5 <0402>	16					2200pF			47000pF					
		10					2200pF			0.22μF					
		6.3							0.10μF		0.47μF				
		4								0.47μF		1.0μF			
		2.5										4.3μF		9.1μF	
NFM18	1.6X0.8 <0603>	16				100pF				0.10μF					
		10										2.2μF			
		6.3								0.22μF		2.2μF			
NFM21	2.0X1.25 <0805>	50				220pF				22000pF					
		25								0.10μF					
		16								0.22μF		1.0μF			
		10									1.0μF		4.7μF		
		6.3										2.2μF		10μF	
NFM3D	3.2X1.25 <1205>	50				220pF				22000pF					
NFM31	3.2X1.6 <1206>	100						10000pF			0.10μF				
		50						10000pF			0.10μF				
		6.3												27μF	
NFM41	4.5X1.6 <1806>	100					470pF				22000pF				
		50											1.5μF		
		25												1.5μF	

Metal Terminal Type Multilayer Ceramic Capacitors for General Purpose



General
Deflecting crack
Soldering crack
Anti-noise

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)													
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ			
KRM21	2.2X1.25	25										10μF		22μF		
		16											10μF			
KRM31	3.5X1.7	100										1.0μF				
		50											4.7μF			
		35												10μF		
		25													10μF	
		50												2.2μF		
KRM55	6.1X5.3	1000							68000pF			0.22μF				
		630								0.15μF		0.47μF				
		450									0.33μF		1μF			
		250									0.68μF		2.2μF			
		100										4.7μF		22μF		
		63										4.7μF		22μF		
		50										4.7μF		33μF		
		35											10μF		47μF	
		25												15μF		100μF

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

High Effective Capacitance & High Allowable Ripple Current Metal Terminal Type Multilayer Ceramic Capacitors for General Purpose



KR3

General Deflecting crack Soldering crack Anti-noise

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
KR355	6.1X5.3	630								0.10μF	0.56μF			
		450								0.22μF	1.2μF			
		250								0.47μF	2.2μF			

Wire Bonding Mount Multilayer Microchip Capacitors for General Purpose



GMA

General Bonding

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GMA0D	0.38X0.38 <015015>	10					1000pF	10000pF						
GMA05	0.5X0.5 <0202>	100				100pF	1000pF							
		25					1500pF	4700pF						
		10						6800pF	22000pF					
		6.3								0.10μF				
GMA08	0.8X0.8 <0303>	100					1500pF	6800pF						
		25						10000pF	22000pF					
		10							33000pF	0.10μF				
		6.3									0.47μF			

Wire Bonding/AuSn Soldering Mount Chip Multilayer Ceramic Capacitors for General Purpose



GMD

General Bonding

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GMD03	0.6X0.3 <0201>	25				100pF	1500pF							
		16					1800pF	3300pF						
		10						3900pF	10000pF					
		6.3								56000pF	0.10μF			
GMD15	1.0X0.5 <0402>	50				220pF	4700pF							
		25					5600pF	47000pF						
		16							56000pF	0.10μF				
		10								0.12μF	0.47μF			

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Ceramic capacitors SMD type For Automotive

AEC-Q200 Compliant Chip Multilayer Ceramic Capacitors for Infotainment

Temperature Compensating Type



GRT



Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GRT03	0.6X0.3 <0201>	100		1.0pF			100pF							
		50		1.0pF			220pF							
		25		1.0pF			1000pF							
GRT15	1.0X0.5 <0402>	100		1.0pF			100pF							
		50				120pF			1000pF					
GRT18	1.6X0.8 <0603>	100				120pF			1500pF					
		50					1200pF		10000pF					
GRT21	2.0X1.25 <0805>	100					1800pF		3300pF					
		50						18000pF	22000pF					
GRT31	3.2X1.6 <1206>	100					3900pF		22000pF					
		50							56000pF	0.10μF				
		25								0.12μF				

High Dielectric Constant Type



GRT



Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)										
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ
GRT03	0.6X0.3 <0201>	35											0.10μF
		25				100pF							0.10μF
		10							10000pF				0.22μF
		6.3							2200pF				1.0μF
		2.5											1.0μF
GRT15	1.0X0.5 <0402>	50				220pF							0.10μF
		35											0.22μF
		25											0.22μF
		16											0.22μF
		10											0.47μF
		6.3											1.0μF
		2.5											
GRT18	1.6X0.8 <0603>	100						3300pF					10000pF
		50											1.0μF
		35											1.0μF
		25											0.15μF
		16											10μF
		10											22μF
		6.3											2.2μF
GRT21	2.0X1.25 <0805>	100											47000pF
		50											0.47μF
		35											4.7μF
		25											2.2μF
		16											4.7μF
		10											10μF
		6.3											47μF
GRT31	3.2X1.6 <1206>	50											1.0μF
		35											10μF

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GRT31	3.2X1.6 <1206>	25										10μF			
		16										22μF			
		10											47μF		
		6.3										22μF	47μF		
GRT32	3.2X2.5 <1210>	50									3.3μF	4.7μF			
		16											47μF		
		6.3											47μF	100μF	

AEC-Q200 Compliant Water Repellent Chip Multilayer Ceramic Capacitors for Infotainment

Temperature Compensating Type



GXT



Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GXT15	1.0X0.5 <0402>	100		1.0pF		100pF								
		50				120pF	1000pF							
GXT18	1.6X0.8 <0603>	100				120pF	1500pF							
		50					1200pF	10000pF						

High Dielectric Constant Type



GXT




Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GXT15	1.0X0.5 <0402>	50				220pF					0.10μF				
		35								0.22μF	1.0μF				
		25								0.22μF	2.2μF				
		16								0.22μF	2.2μF				
		10								0.47μF	2.2μF				
		6.3										1.0μF			
GXT18	1.6X0.8 <0603>	50									2.2μF				
		35								2.2μF	4.7μF				
		25								1.0μF	10μF				
		16										10μF			
		6.3										2.2μF			
GXT21	2.0X1.25 <0805>	50									1.0μF				
		25									2.2μF	22μF			
		10										10μF	22μF		
GXT31	3.2X1.6 <1206>	35										10μF			
		25										10μF			
		16											22μF		
		10											47μF		
		6.3											22μF	47μF	
GXT32	3.2X2.5 <1210>	16											47μF		
		6.3												47μF	




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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GCM31	3.2X1.6 <1206>	100								0.22μF	2.2μF				
		50								1.0μF	4.7μF				
		25								1.0μF	10μF				
		16									4.7μF	10μF			
		10											22μF		
		6.3											22μF		
GCM32	3.2X2.5 <1210>	100									4.7μF				
		50								4.7μF	10μF				
		35										10μF			
		25									10μF	22μF			
		16											22μF		
		10												22μF	
6.3													47μF		


High Effective Capacitance & High Ripple Current Chip Multilayer Ceramic Capacitors for Automotive







Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GC321	2.0X1.25 <0805>	250						10000pF	22000pF					
GC331	3.2X1.6 <1206>	630						10000pF	15000pF					
		450						10000pF	47000pF					
		250						33000pF	68000pF					
GC332	3.2X2.5 <1210>	630						22000pF	47000pF					
		450						68000pF	0.10μF					
		250						0.10μF	0.15μF					
GC343	4.5X3.2 <1812>	630								68000pF				
		450								0.15μF				
		250								0.22μF	0.33μF			
GC355	5.7X5.0 <2220>	630								0.10μF	0.22μF			
		450								0.22μF	0.47μF			
		250								0.47μF	1.0μF			

Soft Termination Chip Multilayer Ceramic Capacitors for Automotive



Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GCJ18	1.6X0.8 <0603>	100						1000pF	0.10μF					
		50						1000pF	0.22μF					
		35						33000pF	68000pF					
		25						1000pF	1.0μF					
		16						27000pF	0.47μF					
		10								0.22μF				
		6.3									2.2μF	4.7μF		
GCJ21	2.0X1.25 <0805>	250						1000pF	22000pF					
		100						27000pF	1.0μF					
		50						82000pF	1.0μF					
		35								0.12μF	0.47μF			

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

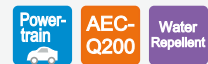
Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)													
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ			
GCJ21	2.0X1.25 <0805>	25								0.12μF		2.2μF				
		16								0.27μF		4.7μF				
		10									2.2μF		10μF			
GCJ31	3.2X1.6 <1206>	1000					1000pF		10000pF							
		630					1000pF		22000pF							
		250						15000pF		0.10μF						
		100								0.15μF		2.2μF				
		50								0.47μF		4.7μF				
		35								0.56μF		1.0μF				
		25									2.2μF		10μF			
		16									3.3μF		10μF			
		10										6.8μF		22μF		
6.3												22μF				
GCJ32	3.2X2.5 <1210>	1000						15000pF		22000pF						
		630						6800pF		47000pF						
		250							68000pF		0.22μF					
		100									2.2μF		4.7μF			
		50										4.7μF		10μF		
		25										4.7μF		22μF		
		16										6.8μF		22μF		
6.3													47μF			
GCJ43	4.5X3.2 <1812>	1000							33000pF		47000pF					
		630							33000pF		0.10μF					
		250								0.15μF		0.47μF				
GCJ55	5.7X5.0 <2220>	1000							68000pF		0.10μF					
		630								0.10μF		0.22μF				
		250									0.33μF		1.0μF			

Water Repellent Chip Multilayer Ceramic Capacitors for Automotive

Temperature Compensating Type



GGM

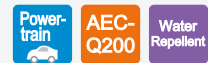


Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GGM15	1.0X0.5 <0402>	50		1.0pF						470pF				
GGM18	1.6X0.8 <0603>	100		1.0pF						1500pF				
		50					1200pF		3900pF					
GGM21	2.0X1.25 <0805>	100							1800pF		3300pF			
		80							15000pF		22000pF			

High Dielectric Constant Type



GGM




Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GGM15	1.0X0.5 <0402>	100					220pF		4700pF					
		50					220pF		0.10μF					
		25						10000pF		47000pF				
		16							33000pF		0.22μF			
		10								0.47μF		1.0μF		
GGM18	1.6X0.8 <0603>	100						6800pF		22000pF				
		50								0.22μF				




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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)													
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ			
GGM18	1.6X0.8 <0603>	25								0.22μF	1.0μF					
		16								0.33μF	1.0μF					
		6.3										2.2μF				
GGM21	2.0X1.25 <0805>	100						33000pF			1.0μF					
		50								0.22μF	1.0μF					
		35									0.68μF	4.7μF				
		25									0.33μF	4.7μF				
		16									1.0μF	4.7μF				
		10										2.2μF	10μF			
		6.3											10μF			
GGM31	3.2X1.6 <1206>	100								0.22μF	2.2μF					
		50									2.2μF	4.7μF				
		25										4.7μF	10μF			
		16										4.7μF	10μF			
		10												22μF		
GGM32	3.2X2.5 <1210>	100											4.7μF			
		50										4.7μF	10μF			
		35											10μF			
		25											10μF			
		16												22μF		
		10													22μF	
		6.3													47μF	


High Q Chip Multilayer Ceramic Capacitors for Automotive







Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)													
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ			
GCQ15	1.0X0.5 <0402>	50	0.10pF													47pF

MLSC Design Chip Multilayer Ceramic Capacitors for Automotive













Series	LxW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)														
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ				
GCD18	1.6X0.8 <0603>	100						1000pF								22000pF	
		50						1000pF								22000pF	
		25														27000pF	47000pF
GCD21	2.0X1.25 <0805>	100														27000pF	0.10μF
		50														27000pF	0.10μF
		16															0.47μF

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



Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

Soft Termination MLSC Design Chip Multilayer Ceramic Capacitors for Automotive

 **GCE**










Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GCE18	1.6X0.8 <0603>	100					1000pF		22000pF					
		50					1000pF		22000pF					
		25							27000pF		47000pF			
GCE21	2.0X1.25 <0805>	100							27000pF		0.10μF			
		50							27000pF		0.10μF			

Water Repellent MLSC Design Chip Multilayer Ceramic Capacitors for Automotive

 **GGD**












Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GGD18	1.6X0.8 <0603>	100					1000pF		22000pF					
		50					1000pF		22000pF					
		25							27000pF		47000pF			
GGD21	2.0X1.25 <0805>	100							27000pF		0.10μF			
		50							27000pF		0.10μF			

3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for Automotive

 **NFM**





Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
NFM21	2.0X1.25 <0805>	50					220pF		22000pF					
		16									1.0μF			
		10								0.10μF		0.47μF		
NFM31	3.2X1.6 <1206>	100							10000pF					
		50							10000pF		0.10μF			

Metal Terminal Type Multilayer Ceramic Capacitors for Automotive

 **KCM**






Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
KCM55	6.1X5.3	100									4.7μF		22μF		
		63									4.7μF		22μF		
		50									4.7μF		33μF		
		35										10μF		47μF	
		25											15μF		100μF

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

High Effective Capacitance & High Allowable Ripple Current Metal Terminal Type Multilayer Ceramic Capacitors for Automotive



KC3



Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
KC355	6.1X5.3	630								0.10μF	1.2μF			
		450								0.22μF	2.2μF			
		250								0.47μF	2.2μF			

Safety Standard Certified Metal Terminal Type Multilayer Ceramic Capacitors for Automotive



KCA

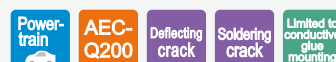


Series	LXW (mm)	Rated Voltage (V)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
KCA55	6.1X5.3	AC250 (r.m.s.)				100pF		10000pF						

Ni Plating + Pd Plating termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive



GCB



Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GCB15	1.0X0.5 <0402>	100					1000pF	10000pF						
		50					1000pF	47000pF						
		25					1000pF	0.10μF						
		16					15000pF	0.10μF						
		10					3300pF	0.10μF						

AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive

Temperature Compensating Type



GCG



Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GCG15	1.0X0.5 <0402>	50				120pF	470pF							
GCG18	1.6X0.8 <0603>	100			10pF		10000pF							
		50			10pF		2200pF							
GCG21	2.0X1.25 <0805>	50					1000pF	10000pF						

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

High Dielectric Constant Type



GCG



Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)													
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ			
GCG15	1.0X0.5 <0402>	50				220pF										
		25					5600pF									
		16						15000pF			0.10μF					
GCG18	1.6X0.8 <0603>	100				1000pF				0.10μF						
		50				1200pF				0.22μF						
		25								0.12μF		0.47μF				
		16									0.15μF		1.0μF			
		10											2.2μF			
GCG21	2.0X1.25 <0805>	50								0.15μF		1.0μF				
		35									0.68μF		1.0μF			
		25									0.27μF		1.0μF			
		16										0.33μF		4.7μF		
		10												10μF		
GCG31	3.2X1.6 <1206>	50								0.22μF		0.33μF				
		25									1.2μF		4.7μF			
		16										0.68μF		4.7μF		
		6.3													22μF	
GCG32	3.2X2.5 <1210>	50											10μF			
		35											10μF			
		25											10μF		22μF	
		16											6.8μF		10μF	
		6.3														47μF

Ceramic capacitors SMD type For Medical Devices

Chip Multilayer Ceramic Capacitors for Implantable Medical devices (Non Life support circuit)

Temperature Compensating Type



GCH



Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
GCH15	1.0X0.5 <0402>	50				1.0pF				1000pF					
GCH18	1.6X0.8 <0603>	100				1.0pF				1500pF					
		50								1500pF					
GCH21	2.0X1.25 <0805>	100								2200pF					
		50								4700pF					
GCH31	3.2X1.6 <1206>	100								4700pF					
		50									33000pF				

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

High Dielectric Constant Type



GCH

Medical Device

Series	LXW (mm) <Size Code (inch)>	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
GCH15	1.0X0.5 <0402>	100				220pF	4700pF							
		50				220pF	4700pF		0.10μF					
		25					10000pF	47000pF						
		16						47000pF	0.22μF					
		10							0.10μF	1.0μF				
GCH18	1.6X0.8 <0603>	100					10000pF	22000pF						
		50							0.22μF					
		25							0.22μF	1.0μF				
		16							0.47μF	1.0μF				
		10									2.2μF			
GCH21	2.0X1.25 <0805>	100						47000pF	1.0μF					
		50							0.22μF	1.0μF				
		35								1.0μF	4.7μF			
		25								0.47μF	4.7μF			
		16								1.0μF	4.7μF			
GCH31	3.2X1.6 <1206>	100							0.22μF	1.0μF				
		50								0.47μF	2.2μF			
		25									4.7μF			
		16									4.7μF	10μF		
		10										10μF		
GCH32	3.2X2.5 <1210>	50									4.7μF			
		16										10μF		
		10											22μF	
		10												47μF
		6.3												

Ceramic capacitors lead type For General Purpose

Leaded MLCC for General Purpose

Temperature Compensating Type



RDE

General Deflecting crack Soldering crack Anti-noise

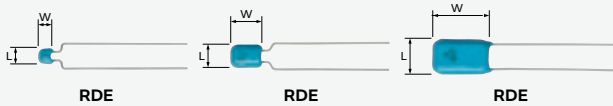
Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
RDE5C	4.0X3.5	100		1.0pF	1500pF									
		50		1.0pF	3900pF									
	4.5X3.5	100					1800pF	3300pF						
		50						4700pF	22000pF					
	5.0X3.5	100		1.0pF	3300pF									
		50		1.0pF	22000pF									
	5.5X4.0	1000			10pF	1000pF								
		630			10pF	3300pF								
250				10pF	15000pF									

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

Series	LxW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
RDE5C	5.5X4.0	100						3900pF	22000pF					
		50							27000pF	0.10μF				
RDE7U	4.5X3.5	250				100pF			4700pF					
						10pF			1000pF					
	5.5X4.0	1000				10pF			4700pF					
		630				10pF			4700pF					
	5.5X5.0	250							6800pF	22000pF				
		1000						1500pF	2200pF					
		630							6800pF	10000pF				
	7.5X5.5	250							33000pF	47000pF				
		1000							3300pF	4700pF				
	7.5X8.0	1000							15000pF	22000pF				
630								6800pF	10000pF					
7.7X13.0	1000							33000pF	47000pF					
	630								20000pF					
									94000pF					

High Dielectric Constant Type



- General
- Deflecting crack
- Soldering crack
- Anti-noise

Series	LxW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
RDEC7	4.0X3.5	25								0.22μF	1.0μF			
		50									1.0μF			
	5.0X3.5	25									2.2μF			
		50									1.0μF			
	5.5X4.0	50								0.22μF	2.2μF			
		25									4.7μF			
	5.5X5.0	100									4.7μF	10μF		
		50									1.5μF	2.2μF		
		25										10μF		
	5.5X7.5	100										22μF		
50											4.7μF			
25												22μF		
RDED7	5.5X4.0	630						10000pF	15000pF					
		450						10000pF	47000pF					
		250						33000pF	68000pF					
	5.5X5.0	630						22000pF	47000pF					
		450							68000pF	0.10μF				
		250							0.10μF	0.15μF				
	7.5X5.5	630							68000pF					
		450								0.15μF				
		250								0.22μF	0.33μF			
	7.5X7.5	450								0.22μF	0.56μF			
250									0.47μF	1.0μF				
7.5X8.0	630								0.10μF	0.27μF				
	450									1.0μF	1.2μF			
7.7X12.5	450										2.2μF			
	250											2.2μF		
7.7X13.0	630									0.47μF	0.56μF			
RDER7	4.0X3.5	100					220pF	22000pF						
		50					220pF	0.1μF						
		25							0.1μF					
	4.5X3.5	500					1000pF	10000pF						
		250					1000pF	22000pF						

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
RDER7	4.5X3.5	100							33000pF	0.47μF				
		50							0.15μF	0.47μF				
	5.0X3.5	100				220pF				0.47μF				
		50				220pF				0.47μF				
	5.5X4.0	25								0.1μF				
		1000				470pF			10000pF					
		630				1000pF			22000pF					
		500							15000pF	47000pF				
		250							33000pF	0.10μF				
		100								0.15μF	1.0μF			
	5.5X5.0	50								0.68μF	2.2μF			
		1000						15000pF	22000pF					
		630							33000pF	47000pF				
		500							68000pF	0.10μF				
		250								0.15μF	0.22μF			
	7.5X5.5	50										3.3μF		
		1000							33000pF	47000pF				
		630							68000pF	0.10μF				
		500								0.15μF	0.22μF			
	7.5X7.5	250								0.33μF	0.47μF			
500									0.33μF	0.47μF				
250									0.68μF	1.0μF				
7.5X8.0	1000							68000pF	0.10μF					
	630								0.15μF	0.22μF				
7.7X12.5	500								0.68μF	1.0μF				
	250										2.2μF			
7.7X13.0	1000								0.22μF					
	630									0.47μF				

Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose / IEC60384-14 Class X1/Y1 Type RA [500Vac (r.m.s.) product]

Temperature Compensating Type



DE1 Type RA

General Safety standard

Series	Rated Voltage (V)	D (mm)	Capacitance Range (F)																	
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ							
DE11X	X1: AC500V (r.m.s.), Y1: AC500V(r.m.s.)	6.0 to 9.0				10pF	68pF													

High Dielectric Constant Type



DE1 Type RA

General Safety standard

Series	Rated Voltage (V)	D (mm)	Capacitance Range (F)																	
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ							
DE1B3	X1: AC500V (r.m.s.), Y1: AC500V(r.m.s.)	6.0 to 9.0				100pF	680pF													
DE1E3	X1: AC500V (r.m.s.), Y1: AC500V(r.m.s.)	8.0 to 14.0						1000pF	4700pF											

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose / IEC60384-14 Class X1/Y1 Type RA [smaller product]

Temperature Compensating Type



DE1 Type RA

General Safety standard

Series	Rated Voltage (V)	D (mm)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
DE11X	X1: AC440V (r.m.s.), Y1: AC300V(r.m.s.)	6.0 to 8.0			10pF	68pF									
	X1: AC440V (r.m.s.), Y1: AC250V(r.m.s.)	6.0 to 8.0			10pF	68pF									

High Dielectric Constant Type



DE1 Type RA

General Safety standard

Series	Rated Voltage (V)	D (mm)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
DE1B3	X1: AC440V (r.m.s.), Y1: AC300V(r.m.s.)	6.0 to 8.0				100pF	680pF								
	X1: AC440V (r.m.s.), Y1: AC250V(r.m.s.)	6.0 to 8.0				100pF	680pF								
DE1E3	X1: AC440V (r.m.s.), Y1: AC300V(r.m.s.)	7.0 to 12.0					1000pF	4700pF							
	X1: AC440V (r.m.s.), Y1: AC250V(r.m.s.)	7.0 to 12.0					1000pF	4700pF							

Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose / IEC60384-14 Class X1/Y1 Type RB [X1:760Vac(r.m.s)product]

Temperature Compensating Type



DE1 Type RB

General Safety standard

Series	Rated Voltage (V)	D (mm)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
DE11X	X1: AC760V (r.m.s.), Y1: AC500V(r.m.s.)	6.0 to 9.0			10pF	68pF									

High Dielectric Constant Type



DE1 Type RB

General Safety standard

Series	Rated Voltage (V)	D (mm)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
DE1B3	X1: AC760V (r.m.s.), Y1: AC500V(r.m.s.)	6.0 to 9.0				100pF	680pF								
DE1E3	X1: AC760V (r.m.s.), Y1: AC500V(r.m.s.)	8.0 to 14.0					1000pF	4700pF							

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose / IEC60384-14 Class X1/Y2 Type SA [400Vac (r.m.s.) product]

Temperature Compensating Type



DE2 Type SA

General Safety standard

Series	Rated Voltage (V)	D (mm)	Capacitance Range (F)															
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ					
DE21X	X1: AC440V (r.m.s.), Y2: AC400V(r.m.s.)	6.0 to 9.0			10pF	68pF												

High Dielectric Constant Type



DE2 Type SA

General Safety standard

Series	Rated Voltage (V)	D (mm)	Capacitance Range (F)															
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ					
DE2B3	X1: AC440V (r.m.s.), Y2: AC400V(r.m.s.)	6.0 to 8.0				100pF	680pF											
DE2E3	X1: AC440V (r.m.s.), Y2: AC400V(r.m.s.)	7.0 to 17.0					1000pF	10000pF										

Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose / IEC60384-14 Class X1/Y2 Type SA [smaller product]

Temperature Compensating Type



DE2 Type SA

General Safety standard

Series	Rated Voltage (V)	D (mm)	Capacitance Range (F)															
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ					
DE21X	X1: AC300V (r.m.s.), Y2: AC300V(r.m.s.)	6.0 to 8.0			10pF	68pF												
	X1: AC300V (r.m.s.), Y2: AC250V(r.m.s.)	6.0 to 8.0			10pF	68pF												

High Dielectric Constant Type



DE2 Type SA

General Safety standard

Series	Rated Voltage (V)	D (mm)	Capacitance Range (F)															
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ					
DE2B3	X1: AC300V (r.m.s.), Y2: AC300V(r.m.s.)	6.0 to 7.0				100pF	680pF											
	X1: AC300V (r.m.s.), Y2: AC250V(r.m.s.)	6.0 to 7.0				100pF	680pF											
DE2E3	X1: AC300V (r.m.s.), Y2: AC300V(r.m.s.)	6.0 to 15.0					1000pF	10000pF										
	X1: AC300V (r.m.s.), Y2: AC250V(r.m.s.)	6.0 to 15.0					1000pF	10000pF										

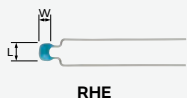
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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)													
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ			
RCER7	5.5X4.0	50									0.68μF	2.2μF				
		25										1.5μF	4.7μF			
	5.5X5.0	1000					15000pF	22000pF								
		630					33000pF	47000pF								
		250							0.15μF	0.22μF						
	5.5X7.5	50										3.3μF	4.7μF			
		25												10μF		
	7.5X5.5	1000					33000pF	47000pF								
		630					68000pF	0.10μF								
	7.5X7.5	250							0.33μF	0.47μF						
		250									0.68μF	1.0μF				
	7.5X8.0	1000					68000pF	0.10μF								
		630							0.15μF	0.22μF						
	7.7X12.5	250												2.2μF		
	7.7X13.0	1000												0.22μF		
630														0.47μF		

150°C Operation Leaded MLCC for Automotive

Temperature Compensating Type

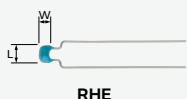


RHE



Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
RHE5G	3.6X3.5	100				100pF	1500pF								
		50				100pF	3900pF								
	4.0X3.5	100					1800pF	3300pF							
		50					4700pF	10000pF							

High Dielectric Constant Type



RHE



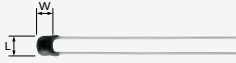
Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)												
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ		
RHEL8	3.6X3.5	100				220pF	22000pF								
		50				220pF	0.10μF								
		25						0.10μF	0.22μF						
	4.0X3.5	100					33000pF	0.10μF							
		50						0.15μF	0.33μF						
		25							0.33μF	1.0μF					
	5.5X4.0	100						0.15μF	0.22μF						
		50							0.47μF	2.2μF					
		25								1.5μF	4.7μF				
	5.5X5.0	50									3.3μF	4.7μF			
		25											10μF		
	5.5X7.5	50											10μF		
25													22μF		

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

175°C/200°C Operation Leaded MLCC for Automotive

Temperature Compensating Type

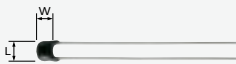


RHS

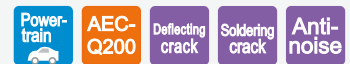


Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)													
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ			
RHS7G	3.9X3.5	100				100pF	1500pF									
	4.2X3.5	100					1800pF	3300pF								
RHS7J	4.2X3.5	200				100pF	4700pF									
	5.5X4.0	500				100pF	4700pF									
		200					6800pF	10000pF								

High Dielectric Constant Type



RHS

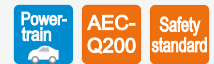


Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)													
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ			
RHSN1	3.9X3.5	100					4700pF	22000pF								
	4.2X3.5	100						33000pF	0.10μF							
	5.5X4.0	100							0.15μF	0.22μF						

Safety Standard Certified Lead Type Disc Ceramic Capacitors for Automotive



DE6 Type KJ



Series	Rated Voltage (V)	D (mm)	Capacitance Range (F)													
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ			
DE6B3	X1: AC440V (r.m.s.), Y2: AC300V(r.m.s.)	8.0 to 9.0				100pF	680pF									
DE6E3	X1: AC440V (r.m.s.), Y2: AC300V(r.m.s.)	7.0 to 12.0					1000pF	4700pF								

Resin Molding SMD Type Ceramic Capacitors

Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose

Temperature Compensating Type



DK1 Type EA



Series	Rated Voltage (V)	LXW (mm)	Capacitance Range (F)													
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ			
DK11X	X1: AC440V (r.m.s.), Y1: AC300V(r.m.s.)	11.4X6.0				10pF	47pF									
	X1: AC440V (r.m.s.), Y1: AC250V(r.m.s.)	11.4X6.0				10pF	47pF									

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Ceramic Capacitor, Polymer Aluminum Electrolytic Capacitors

High Dielectric Constant Type



DK1 Type EA



Series	Rated Voltage (V)	LxW (mm)	Capacitance Range (F)														
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ				
DK1B3	X1: AC440V (r.m.s.), Y1: AC300V(r.m.s.)	11.4X6.0					100pF			680pF							
	X1: AC440V (r.m.s.), Y1: AC250V(r.m.s.)	11.4X6.0					100pF			680pF							
DK1E3	X1: AC440V (r.m.s.), Y1: AC300V(r.m.s.)	11.4X6.0							1000pF								
	X1: AC440V (r.m.s.), Y1: AC250V(r.m.s.)	11.4X6.0							1000pF								

Polymer Aluminum Electrolytic Capacitors



ECAS



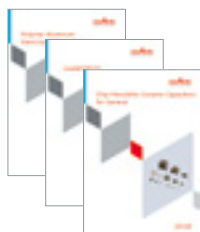
ECNS



Series	LxW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)																
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ						
ECAS	7.3X4.3	25										10μF		33μF					
		16											6.8μF		68μF				
		12.5											10μF		100μF				
		10											10μF		150μF				
		6.3											10μF		330μF				
		4													68μF		330μF		
		2.5														330μF		470μF	
ECNS	3.5X2.8	25										10μF		15μF					
		16											15μF		33μF				
		6.3												22μF		100μF			

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- Chip Multilayer Ceramic Capacitors for General Cat. No. C02E
- Chip Multilayer Ceramic Capacitors for Automotive Cat. No. C03E
- Lead Type Disc Ceramic Capacitors (Safety Standard Certified, DC2k to DC6.3kV)
- Resin Molding SMD Type Ceramic Capacitors (Safety Standard Certified) Cat. No. C85E
- Polymer Aluminum Electrolytic Capacitors Cat. No. C90E
- Leaded MLCC Cat. No. C49E
- High Performance Supercapacitors (EDLC) DMF Series Cat. No. O83E
- High Performance Supercapacitors (EDLC) DMT Series Cat. No. O84E

Variable Capacitors

Variable Capacitors

Variable capacitors can carry out the variable of the capacitor by adjusting the tuning voltage. They are designed for frequency matching use for HF band (13.56MHz).

LXRW_V Series



LXRW0YV Series



LXRW19V Series




(in mm)

Series	LXW (mm)	Rated Voltage (Vdc)	Capacitance Range (F)											
			0.1p	1p	10p	100p	1000p	10000p	0.1μ	1μ	10μ	100μ	1000μ	
LXRW0Y	0.6X0.6	CSP			33pF	90pF								
LXRW19	1.3X0.9	DFN			33pF	200pF								

Silicon Capacitors

Murata High Density Silicon Capacitors are based on a MOS Semiconductor technology and utilize a 3D structure which substantially increases their performance and enables the compact design. Silicon Capacitors offer small size and low thickness, superior reliability and stability over high temperatures and high frequencies. They are the ideal choice for all demanding markets, such as Networking (RF Power and Broadband), Medical (Implantable devices), Automotive or High Reliability applications. Murata can provide customized Silicon Capacitors or IPDs (Integrated Passive Devices) to optimize your design.

Product Lineup

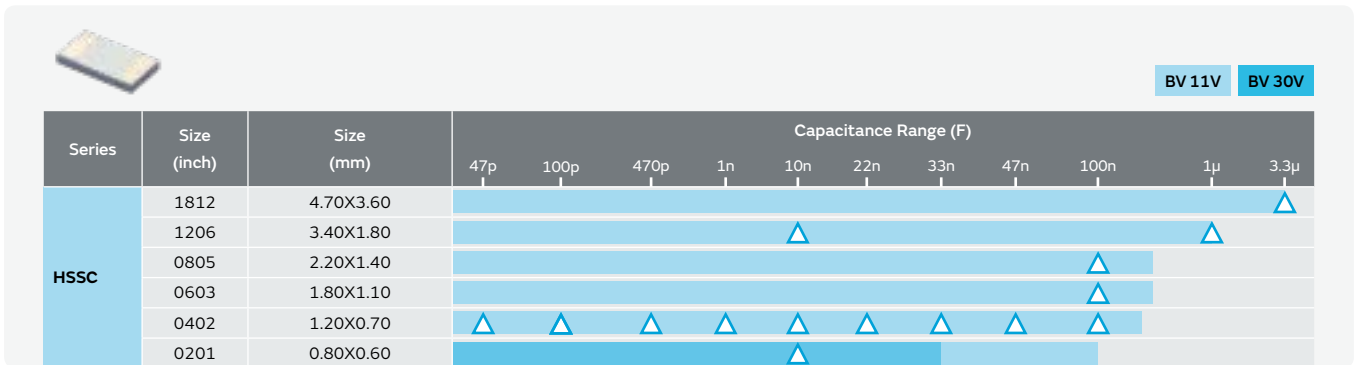
	Thickness	Standard (150°C)	High temp.	Operating Frequency	Low ESL
 Solder Mounting	85µm				UESL (Typically 15pH) S (p40)
	100µm	LPSC R All (p36)		XBSC (100GHz+) UBSC (60GHz+) BBSC (40GHz)	
	400µm	HSSC All (p36)	HTSC (200°C) XTSC (250°C) H (p36)	ULSC (20GHz) UBDC (60GHz+) B (p37, 38)	
 Wire-bonding vertical	100µm	WLSC P A B (p39)			
	250µm	WBSC P A B (p39)	WTSC (200°C) WXSC (250°C) A P H (p39)	UWSC (26GHz+) (down to 10pH) B P (p39)	
 Wire-bonding / Embedded horizontal	100µm	EMSC All MGSC M (p36, 40)		UBEC (60GHz+) BBEC (40GHz) ULEC (20GHz) B (p38)	
	250µm		ETSC (200°C) EXSC (250°C) H ATSC (200°C) A (p37, 40)		

Target application

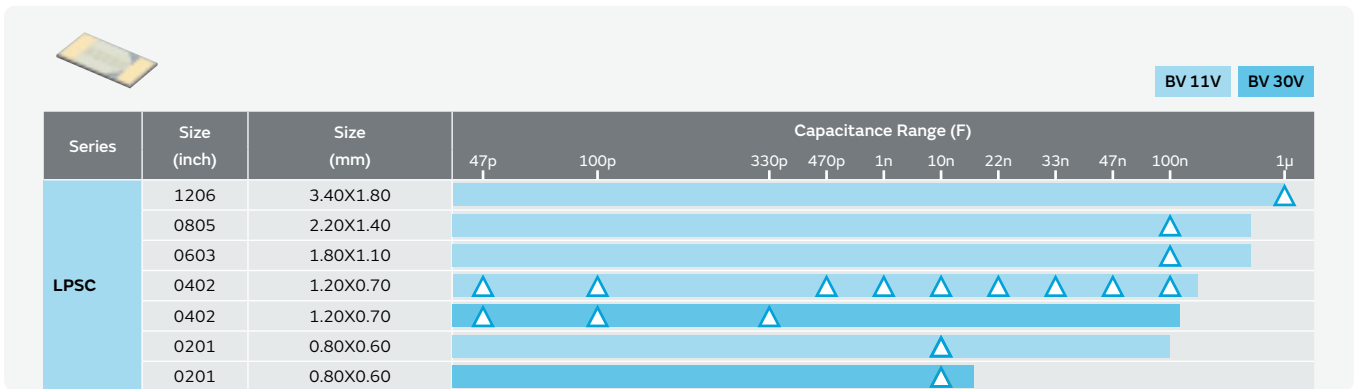
- A** Automotive
- B** BroadBand
- P** Power Amp for RF
- H** High Reliability
- M** Medical
- R** RFID
- S** Signal Integrity
- All** All applications

Silicon Capacitors

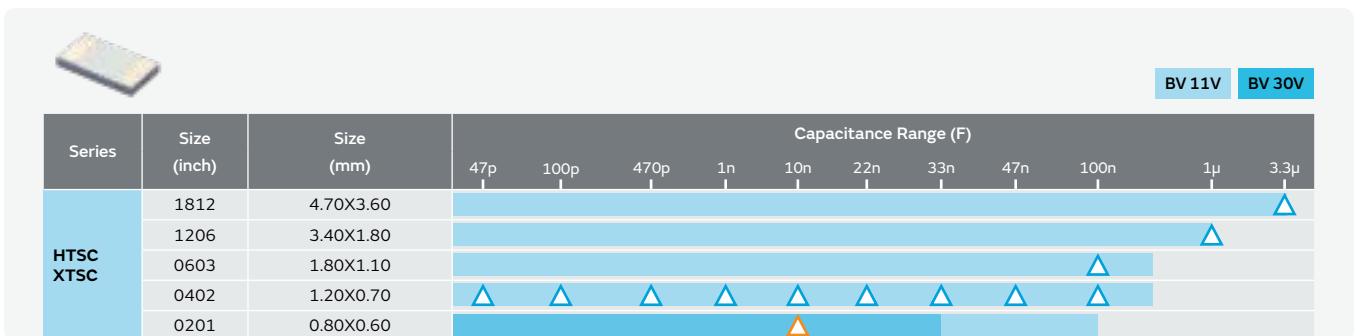
High stability and reliability Si capacitors (HSSC)



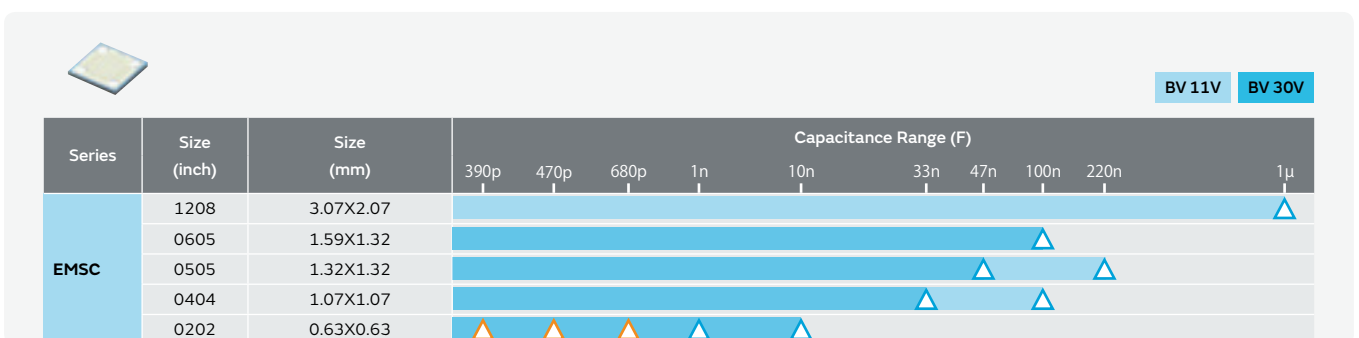
Low-profile Si capacitors down to 100μm (LPSC)



Xtreme temperature Si capacitors up to 250°C (HTSC/XTSC)

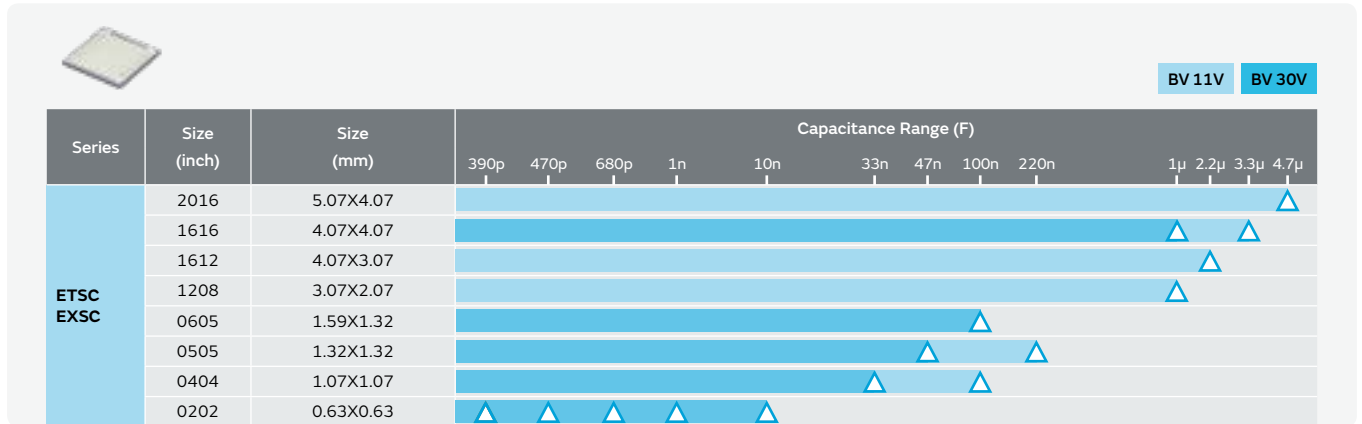


Wire-bondable or embedded low-profile Si capacitors down to 100μm (EMSC)

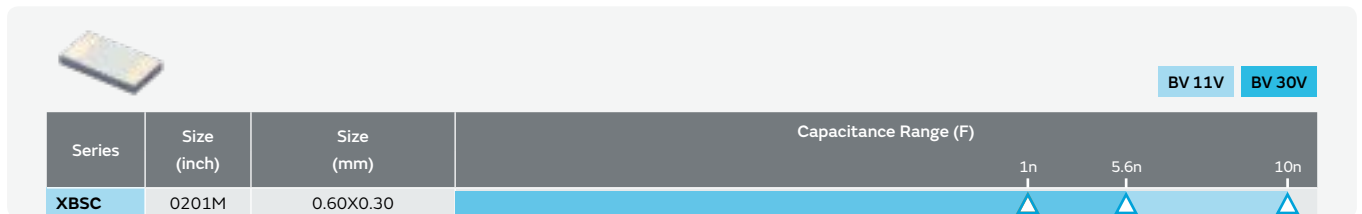


△ Available parts. For other values, contact your Murata sales representative. ▴ Under development.

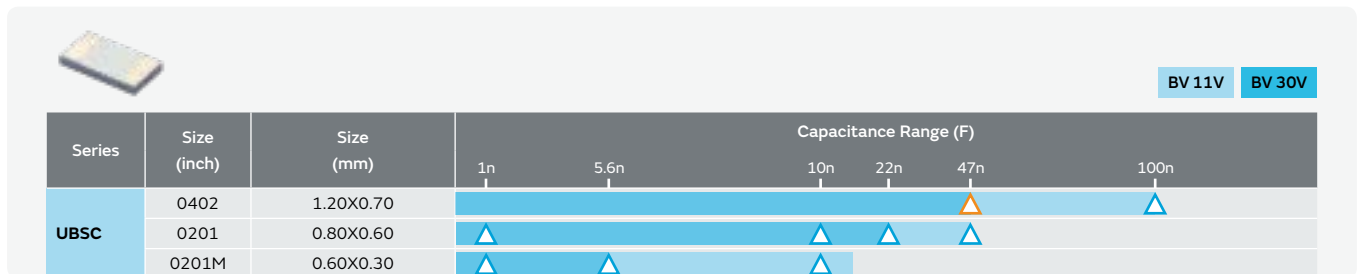
Extreme temperature wire-bondable Si capacitors up to 250°C (ETSC/EXSC)



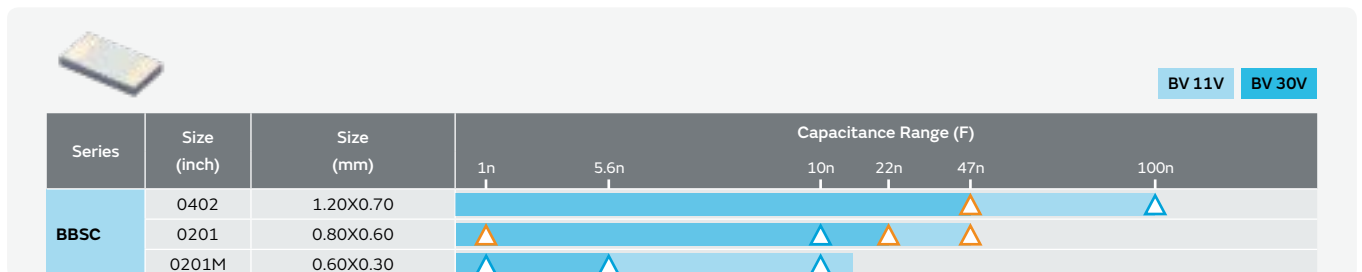
Ultra broadband surface mounted Si capacitor up to 100GHz+ (XBSC)



Ultra broadband surface mounted Si capacitors up to 60GHz+ (UBSC)



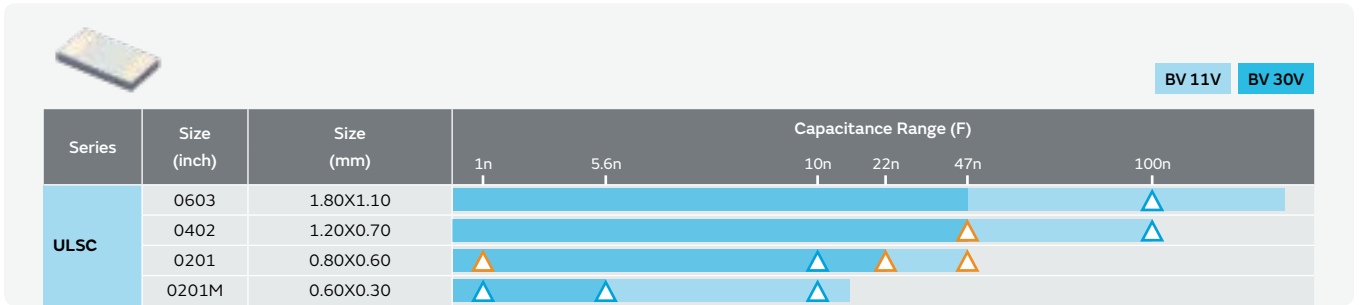
Ultra broadband surface mounted Si capacitors up to 40GHz (BBSC)



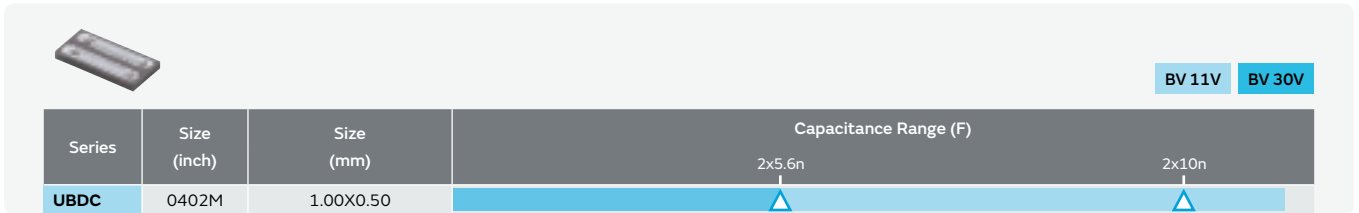
△ Available parts. For other values, contact your Murata sales representative. ▽ Under development.

Silicon Capacitors

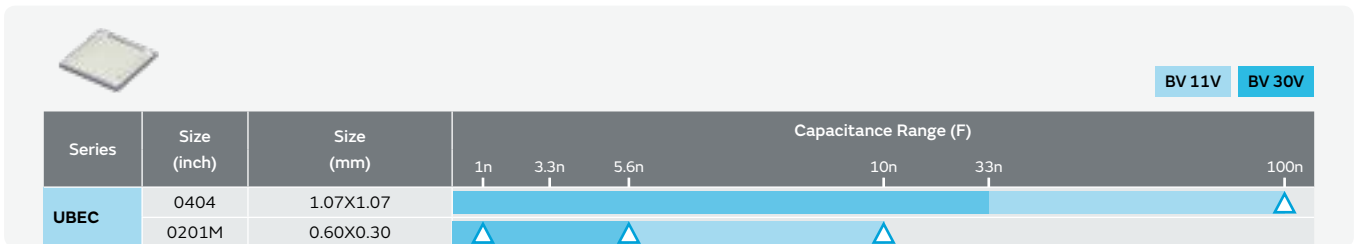
Ultra broadband surface mounted Si capacitors up to 20GHz (ULSC)



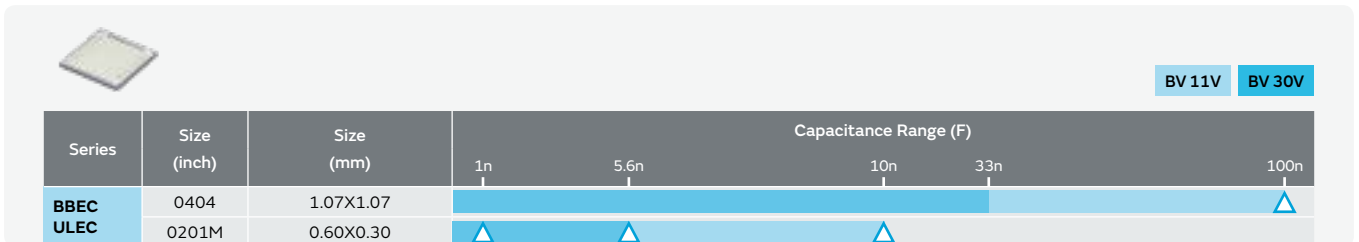
Ultra Broadband surface mounted differential Si capacitors pairs up to 60GHz+ (UBDC)



Ultra broadband wire-bondable embedded Si capacitors up to 60GHz+ (UBEC)

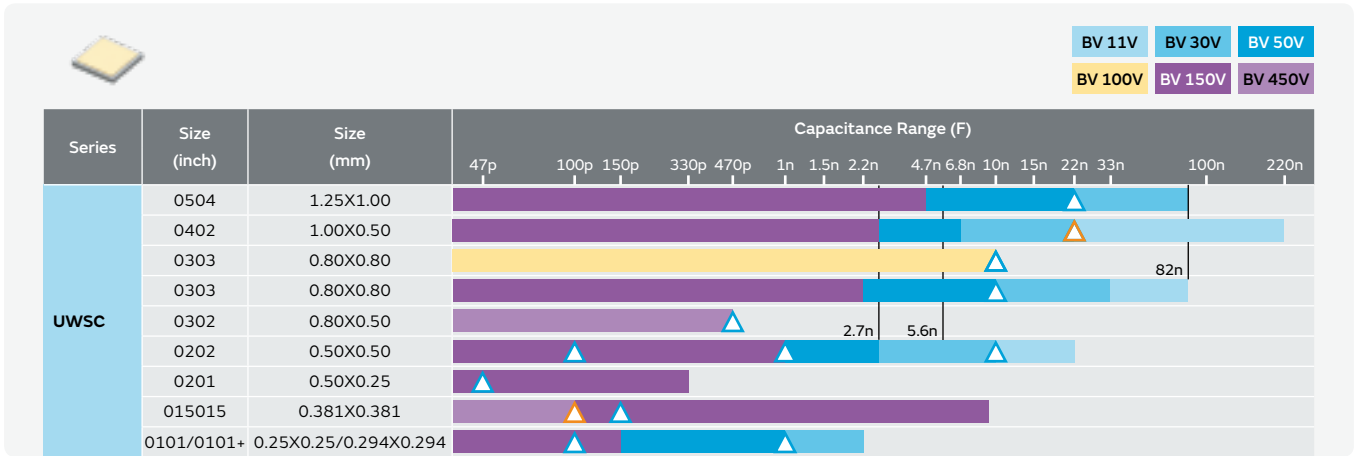


Ultra broadband wire-bondable embedded Si capacitors up to 40/20GHz (BBEC/ULEC)

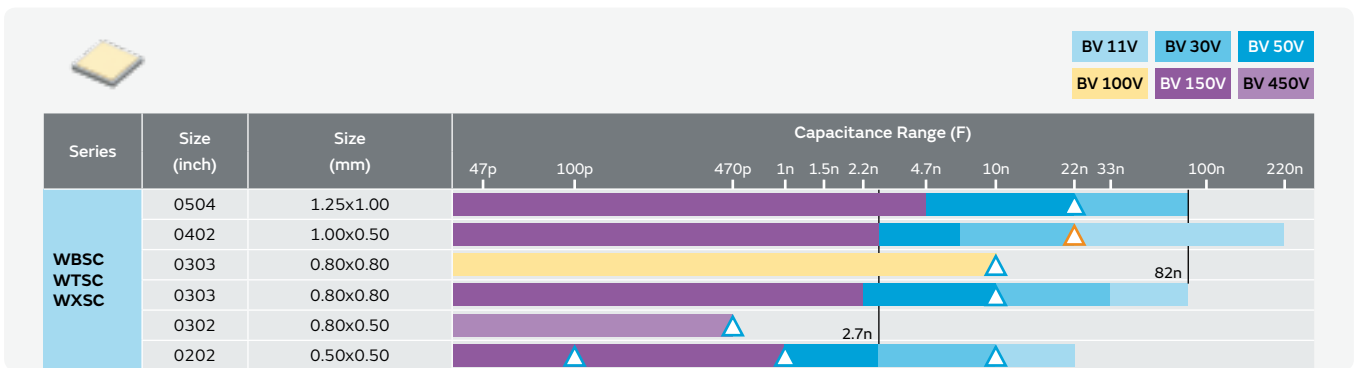


△ Available parts. For other values, contact your Murata sales representative. ▴ Under development.

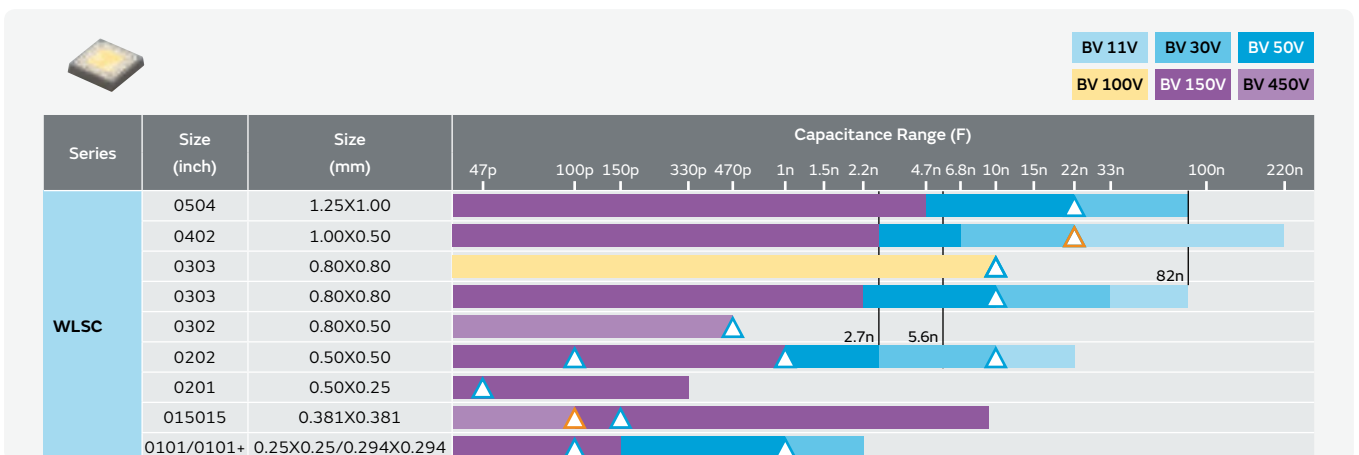
Ultra large-band wire-bondable vertical Si capacitors up to 26GHz+ (UWSC)



Wire-bondable vertical Si capacitors up to 250°C (WBSC/WTSC/WXSC)



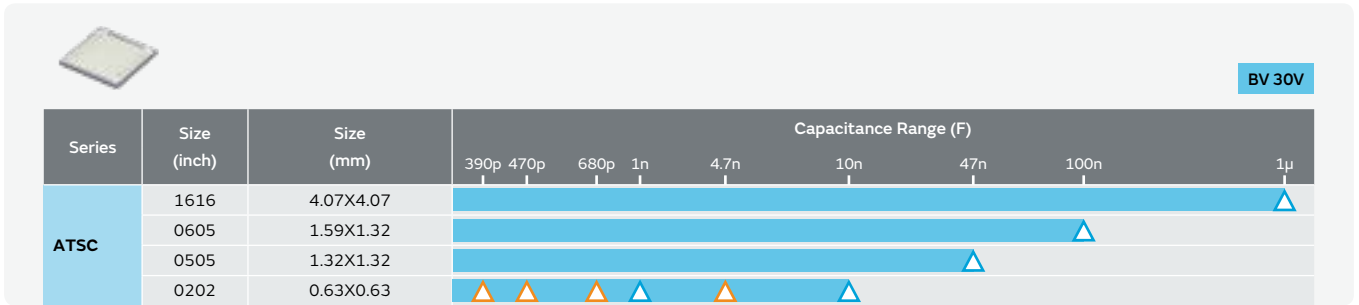
Wire-bondable vertical low-profile Si capacitors down to 100µm (WLSC)



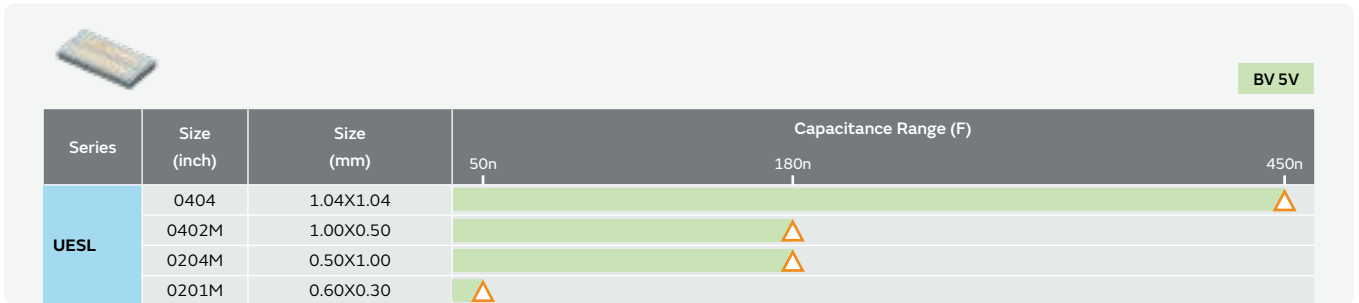
△ Available parts. For other values, contact your Murata sales representative. ▽ Under development.

Silicon Capacitors

Automotive high temperature Si capacitors up to 200°C (ATSC)



Ultra low ESL and ultra-low-profile Si capacitors down to 85μm (UESL)



Medical grade Si capacitors (MGSC)



△ Available parts. For other values, contact your Murata sales representative. ▴ Under development.

Noise Suppression Products/ EMI Suppression Filters

Broad lineup of Noise Suppression Products and
EMI Suppression Filters

Summary

Using Murata's ceramic processing technology and unique materials, we offer a variety of Noise Suppression Products and EMI Suppression Filters.

Lineup

- EMI (chip and lead type)
- Noise Suppression Products for Automotive
- ESD Protection Devices



<https://www.murata.com/en-global/products/emc>

Noise Suppression Filters (Chip Ferrite Bead)/ (Frequency Specified Noise Filters)

		Series	Size Code inch (mm)	Max. Rated Current (mA)	Impedance at 100MHz (Rated Current)		
For General Band Noise	Universal Type [Power Lines/Signal Lines]	BLM02AX	01005 (0402)	750	10Ω to 240Ω (0.2A to 0.75A)		
		BLM03AX	0201 (0603)	1000	10Ω to 1000Ω (0.2A to 1A)		
		BLM15AX	0402 (1005)	1740	10Ω to 1000Ω (0.35A to 1.74A)		
	Signal Lines Type	For General Signal Lines	BLM03AG	0201 (0603)	-	10Ω to 1000Ω	
			BLM15AG	0402 (1005)	-	10Ω to 1000Ω	
			BLM18AG	0603 (1608)	-	120Ω to 1000Ω	
			BLM21AG	0805 (2012)	-	120Ω to 1000Ω	
			BLM18TG	0603 (1608)	-	120Ω to 1000Ω	
			BLA2AA (4 circuits array)	0804 (2010)	-	120Ω to 1000Ω	
			BLA31AG (4 circuits array)	1206 (3216)	-	30Ω to 1000Ω	
			For High Speed Signal Lines	BLM02BX*	01005 (0402)	-	120Ω to 240Ω
				BLM03BX	0201 (0603)	-	1000Ω to 1800Ω
		BLM02BB/BC		01005 (0402)	-	10Ω to 100Ω	
		BLM03BB/BC/BD		0201 (0603)	-	10Ω to 600Ω	
		BLM15BA/BB/BC/BD		0402 (1005)	-	5Ω to 1800Ω	
		BLM15BX		0402 (1005)	-	75Ω to 1800Ω	
		BLM18BA/BB/BD		0603 (1608)	-	5Ω to 2500Ω	
		BLM21BB/BD		0805 (2012)	-	5Ω to 2700Ω	
		BLA2AB (4 circuits array)		0804 (2010)	-	10Ω to 1000Ω	
		BLA31BD (4 circuits array)	1206 (3216)	-	120Ω to 1000Ω		
		For Digital Interface Lines	BLM18RK	0603 (1608)	-	120Ω to 1000Ω	
	BLM21RK		0805 (2012)	-	120Ω to 1000Ω		

* The derating of rated current is required for some items according to the operating temperature.

For automotive grade products, please refer to the catalog C51E, "EMI Suppression Filters (for DC)/Chip Inductors for Automotive."

Continued on the following page. ↗


Noise Suppression Filters (Chip Ferrite Bead)/(Frequency Specified Noise Filters)

		Series	Size Code inch (mm)	Max. Rated Current (mA)	Impedance at 100MHz (Rated Current)		
For General Band Noise	Power Lines Type	BLM02KX*	01005 (0402)	1500	10Ω to 18Ω (1.2A to 1.5A)		
		BLM02PX*	01005 (0402)	1100	10Ω to 60Ω (0.5A to 1.1A)		
		BLM03PX*	0201 (0603)	1800	22Ω to 120Ω (0.9A to 1.8A)		
		BLM03PG	0201 (0603)	900	22Ω to 33Ω (0.75A to 0.9A)		
		BLM15KD*	0402 (1005)	3800	20Ω to 120Ω (1.5A to 3.8A)		
		BLM15PX*	0402 (1005)	3000	33Ω to 600Ω (0.9A to 3A)		
		BLM15PD*	0402 (1005)	2200	30Ω to 120Ω (1.3A to 2.2A)		
		BLM15PG	0402 (1005)	1000	10Ω (1A)		
		BLM18PG*	0603 (1608)	3000	30Ω to 470Ω (1A to 3A)		
		BLM21PG*	0805 (2012)	6000	22Ω to 330Ω (1.5A to 6A)		
		BLM31PG*	1206 (3216)	6000	33Ω to 600Ω (1.5A to 6A)		
		BLM41PG*	1806 (4516)	6000	60Ω to 1000Ω (1.5A to 6A)		
		BLM18SN* (Low DC Resistance Type)	0603 (1608)	8000	22Ω (8A)		
		BLM18KG* (Low DC Resistance Type)	0603 (1608)	6000	26Ω to 1000Ω (1A to 6A)		
		BLM18SD* (Low DC Resistance Type)	0603 (1608)	6000	22Ω (6A)		
		BLM18SG* (Low DC Resistance Type)	0603 (1608)	6000	26Ω to 330Ω (1.5A to 6A)		
		BLM21SN*/SP* (Low DC Resistance Type)	0805 (2012)	8500	30Ω to 1000Ω (1.6A to 8.5A)		
		BLM31SN* (Low DC Resistance Type)	1206 (3216)	12000	50Ω (12A)		
		BLM31KN*	1206 (3216)	6000	120Ω to 1000Ω (2A to 6A)		
		BLE18PS*	0603 (1608)	8000	8.5Ω (8A)		
BLE32PN	1210 (3225)	10000	26Ω to 30Ω (10A)				
For GHz Band Noise	Universal Type [Power Lines/Signal Lines]	BLM03EB*	0201 (0603)	600	25Ω to 50Ω (0.4A to 0.6A)		
		BLM15EG*	0402 (1005)	1500	120Ω to 220Ω (0.7A to 1.5A)		
		BLM15EX*	0402 (1005)	1800	120Ω to 470Ω (0.95A to 1.8A)		
		BLM18EG*	0603 (1608)	2000	100Ω to 600Ω (0.5A to 2A)		
		BLM18HE*	0603 (1608)	800	600Ω to 1500Ω (0.5A to 0.8A)		
	Signal Lines Type	BLM03HG	0201 (0603)	-	600Ω to 1200Ω		
		BLM03HD	0201 (0603)	-	330Ω to 1800Ω		
		BLM03HB	0201 (0603)	-	190Ω to 400Ω		
		BLM15HG	0402 (1005)	-	600Ω to 1000Ω		
		BLM15HD	0402 (1005)	-	600Ω to 1800Ω		
		BLM15HB	0402 (1005)	-	120Ω to 220Ω		
		BLM18HG	0603 (1608)	-	470Ω to 1000Ω		
		BLM18HD	0603 (1608)	-	470Ω to 1000Ω		
		BLM18HB	0603 (1608)	-	120Ω to 330Ω		
		BLM18HK	0603 (1608)	-	330Ω to 1000Ω		
		For High-GHz Band Noise	Signal Lines Type	BLM15GG	0402 (1005)	-	220Ω to 470Ω
				BLM15GA	0402 (1005)	-	75Ω
				BLM18GG	0603 (1608)	-	470Ω



* The derating of rated current is required for some items according to the operating temperature.

For automotive grade products, please refer to the catalog C51E, "EMI Suppression Filters (for DC)/Chip Inductors for Automotive."








Continued on the following page. ↗

		Series	Size Code inch (mm)	Max. Rated Current (A)	Impedance at 700MHz
For 700MHz Band Noise Filter		 BLF02JD*	01005 (0402)	-	360Ω to 470Ω
		 BLF03JD*	0201 (0603)	-	420Ω
		Series	Size Code inch (mm)	Max. Rated Current (A)	Impedance at 2.4GHz
For 2.4GHz Band Noise Filter		 BLF02RD*	01005 (0402)	-	330Ω to 470Ω
		Series	Size Code inch (mm)	Max. Rated Current (A)	Impedance at 100MHz (Rated Current)
For General Band Noise	Large Current Type Power Lines Type	 BLT5BPT*	2020 (5050)	11	68Ω (11A)

Noise Suppression Filters (Feed Through Chip EMI Filters)

		Series	Size Code inch (mm)	Max. Rated Current (mA)	Capacitance
Universal Type [Power Lines/Signal Lines]		 NFE31PT	1206 (3216)	6000	22pF to 2200pF
		 NFE61PT	2706 (6816)	2000	33pF to 4700pF




Noise Suppression Filters (Chip LC Filters)




		Series	Size Code inch (mm)	Max. Rated Current (mA)	Cut-off Frequency
Signal Lines Type		 NFL18ST	0603 (1608)	-	50MHz to 500MHz
		 NFL18SP	0603 (1608)	-	150MHz to 500MHz
		 NFL21SP	0805 (2012)	-	10MHz to 500MHz
		 NFA18SL (4 circuits array)	0603 (1608)	-	50MHz to 480MHz
		 NFA18SD (4 circuits array)	0603 (1608)	-	180MHz to 200MHz
		 NFA21SL (4 circuits array)	0805 (2012)	-	50MHz to 330MHz
		 NFW31SP	1206 (3216)	-	10MHz to 500MHz


* The derating of rated current is required for some items according to the operating temperature.
For automotive grade products, please refer to the catalog C51E, "EMI Suppression Filters (for DC)/Chip Inductors for Automotive."

Noise Suppression Filters (Chip EMIFIL®)

Noise Suppression Filters (Chip EMIFIL®)

	Series	Size Code inch (mm)	Max. Rated Current (mA)	Impedance at 900MHz	Impedance at 1.7GHz
For Audio Lines	 NFZ03SG_10	0201 (0603)	305	330Ω to 1600Ω	400Ω to 1200Ω
	 NFZ15SG_10	0402 (1005)	500	770Ω to 4600Ω	900Ω to 1800Ω
	 NFZ15SG_11	0402 (1005)	1100	100Ω to 330Ω	160Ω to 540Ω

	Series	Size Code inch (mm)	Max. Rated Current (mA)	Impedance at 100MHz
For Audio Lines	 NFZ32SW_10	1210 (3225)	-	300Ω to 900Ω
	 NFZ18SM_10*	0603 (1608)	-	120Ω to 700Ω
	 NFZ2MSM_10	0806 (2016)	-	100Ω to 600Ω

	Series	Size Code inch (mm)	Max. Rated Current (mA)	Impedance at 1MHz
For LED Lighting Equipments	 NFZ5BBW_LN10*	2020 (5050)	4000	2.9Ω to 140Ω
	 NFZ2HBM_10	1008 (2520)	1200	1.5Ω to 60Ω
	 NFZ32BW_10*	1210 (3225)	2550	3.6Ω to 880Ω
	 NFZ32BW_11*	1210 (3225)	2900	3.3Ω to 150Ω

* The derating of rated current is required for some items according to the operating temperature.
For automotive grade products, please refer to the catalog C51E, "EMI Suppression Filters (for DC)/Chip Inductors for Automotive."



Noise Suppression Filters (Chip Common Mode Choke Coils/Chip Common Mode Noise Filters)


		Series	Size Code inch (mm)	Max. Rated Current (mA)	Common Mode Impedance at 100MHz	
Signal Lines Type	For Audio Lines	DLM11GN	0504 (1210)	-	600Ω	
	For Ultra-High-Speed Signal Lines	DLMOQSN	025020 (0605)	-	50Ω to 90Ω	
		DLMOQSB	025020 (0605)	-	12Ω to 35Ω	
		DLMONSN	03025 (0806)	-	50Ω to 90Ω	
		DLMONSB	03025 (0806)	-	12Ω to 28Ω	
		DLM11SN	0504 (1210)	-	45Ω to 90Ω	
		NFPOQHB	025020 (0605)	-	-	
		NFPOQSB	025020 (0605)	-	(90Ω)	
		DLPOQSA	025020 (0605)	-	7Ω to 35Ω	
		DLPONSC	03025 (0806)	-	28Ω to 90Ω	
		DLPONSN	03025 (0806)	-	35Ω to 120Ω	
		DLPONSA	03025 (0806)	-	7Ω to 15Ω	
		DLP11SN	0504 (1210)	-	67Ω to 330Ω	
		DLP11SA	0504 (1210)	-	35Ω to 90Ω	
		DLP11RN	0504 (1210)	-	45Ω	
		DLP11RB	0504 (1210)	-	15Ω to 40Ω	
		DLP11TB	0504 (1210)	-	80Ω	
		DLP31SN	1206 (3216)	-	120Ω to 550Ω	
		DLP1NDN (2 circuits array)	05025 (1506)	-	35Ω to 90Ω	
		DLP2ADA (2 circuits array)	0804 (2010)	-	35Ω to 90Ω	
		DLP2ADN (2 circuits array)	0804 (2010)	-	67Ω to 280Ω	
		DLP31DN (2 circuits array)	1206 (3216)	-	90Ω to 440Ω	
		DLW21S	0805 (2012)	-	67Ω to 920Ω	
		DLW21H	0805 (2012)	-	67Ω to 180Ω	
		DLW31S	1206 (3216)	-	90Ω to 2200Ω	
		Universal Type [Power Lines/Signal Lines]	DLW44S*	1515 (4040)	3100	(100Ω) to (2400Ω)
			DLW5AH/DLW5BS*	2014 (5036) / 2020 (5050)	5000	(190Ω) to (4000Ω)
			DLW5AT*/DLW5BT*	2014 (5036) / 2020 (5050)	6000	(50Ω) to (2700Ω)

* The derating of rated current is required for some items according to the operating temperature.
For automotive grade products, please refer to the catalog C51E, "EMI Suppression Filters (for DC)/Chip Inductors for Automotive."











Continued on the following page. ↗

Noise Suppression Filters (Chip Common Mode Choke Coils/Chip Common Mode Noise Filters), Noise Suppression Filters (Block Type)

	Series	Size Code inch (mm)	Max. Rated Current (A)	Common Mode Impedance at 10MHz
Large Current Type for Automotive Available	 PLT5BPH*	2020 (5050)	5.6	100Ω to 500Ω
	 PLT10HH*	-	18	45Ω to 1000Ω

	Series	Size Code inch (mm)	Max. Rated Current (mA)	Common Mode Impedance at 100MHz
Large Current Type for Automotive Available	 UCMH0907	3527 (9070)	5000	(700Ω)

Noise Suppression Filters (Block Type)

		Series	Height (mm)	Rated Voltage (Vdc)	Rated Current (A)
Power Lines Type	SMD Type	 BNX022*	3.1	50	20
		 BNX023*	3.1	100	20
		 BNX024*	3.5	50	20
		 BNX025*	3.5	25	20
		 BNX026*	3.5	50	20
		 BNX027*	3.5	16	20
		 BNX028*	3.5	16	20
		 BNX029*	3.5	6.3	20
	Lead Type	 BNX012*	8.5 max.	50	15
		 BNX016*	8.5 max.	25	15

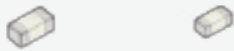
* The derating of rated current is required for some items according to the operating temperature.
For automotive grade products, please refer to the catalog C51E, "EMI Suppression Filters (for DC)/Chip Inductors for Automotive."

ESD Protection Devices

Support ESD protection for various kinds of electronic devices.

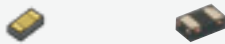
Ceramic ESD Protection Devices LXES_A Series

Applying Murata's original ceramic technology for excellent ESD suppression performance and ultra-small capacitance value.



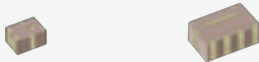
Silicon ESD Protection Devices LXES_T Series

Applying accumulated design technology for excellent ESD suppression performance.











ESD Protection Devices with Common Mode Choke Coil LXES_D Series

Applying Murata's original ceramic technology for excellent ESD suppression performance, small capacitance value, and common mode filter performance.

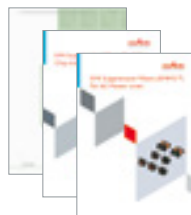


Noise Suppression Filters (Lead Type), Others

	Series				
Lead Type EMIFIL [®]	 BLL18AG	 BL01	 BL02	 BL03	 DSS1
EMIGUARD [®]	 VFC2H				
Common Mode Choke Coils	 PLT09H				
Microwave Absorbers	 EA20/21				

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- EMI Suppression Filters (Lead Type EMIFIL[®])
- EMI Suppression Filters (for DC)/Chip Inductors for Automotive
- EMI Suppression Filters (EMIFIL[®]) for AC Power Lines
- Noise Suppression by EMIFIL[®] Digital Equipment Application Manual
- Noise Suppression by EMIFIL[®] Application Guide Application Manual
- Application Manual for Power Supply Noise Suppression and Decoupling for Digital ICs

Cat. No. C30E
Cat. No. C51E
Cat. No. C09E
Cat. No. C33E
Cat. No. C35E
Cat. No. C39E

Inductors (Coils)

Broad Lineup of Chip Inductors and Power Inductors

Summary

Murata's chip inductors are optimally designed, making full use of multiple construction techniques, such as the multilayer construction technique, film construction technique, and the wire wound construction technique according to the application. We offer an extensive lineup of inductors for power supplies to high frequency.

In addition, newly adopted metal alloy material has extended the power inductor lineup.

Lineup

- Inductors for Power Lines ● RF Inductors
- General Circuits Inductors ● Variable Inductors



<https://psearch.en.murata.com/inductor/partnumber/>

WEB Product Search Engine

You can search for products in a variety of ways, including part number, specifications, and lineup.

1 Search by part number or series name

The applicable inductors can be searched by part number or series name.



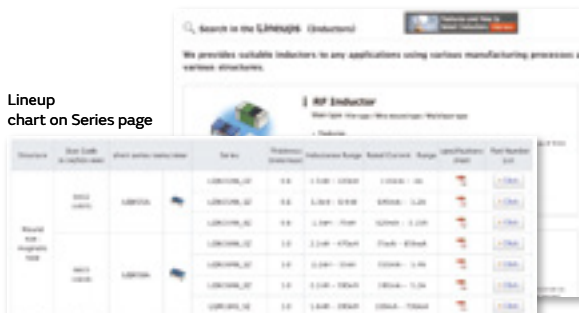
2 Search by specifications

Inductors can be searched by various specifications, such as the Inductance, DC Resistance, and Rated Current.



3 Search in the lineups

Inductor search using series lineup list is available.



4 Search by competitor's part number (Cross reference)

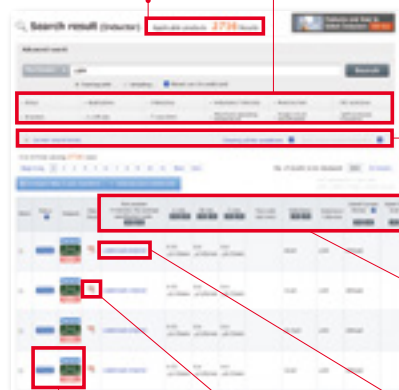
The Murata part number compatible with specifications can be found using a competitor's part number.



Search results

The number of part numbers applicable to the current search conditions is always displayed in real time.

Click each search condition button to display the menu. The search results will change in real time with the selected conditions.



Clicking the "Current search conditions" opens a menu, and the filtered conditions can be checked.

The results can be sorted by clicking the ▲ button above the search results items.

Clicking the product name opens the details page, and more detailed information can be acquired.

The icons clearly indicate the status and the features of the product.

A simple specification sheet can be downloaded without opening the details page.

Inductors for Power Lines

Main Type:

- Wound Metal Alloy
- Multilayer Type
- Wound Ferrite Core

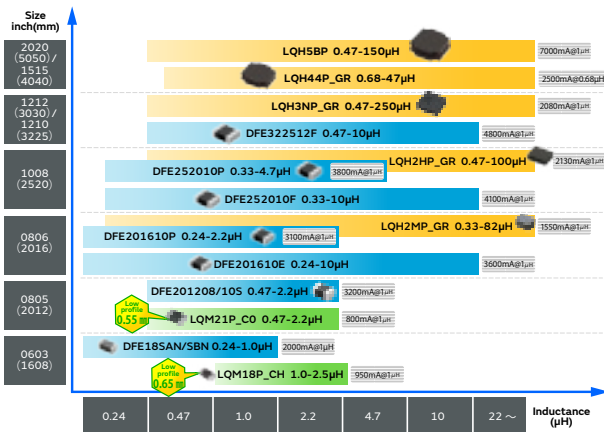


We have an extensive lineup of inductors covering a wide range of sizes from 1.6 mm x 0.8 mm to 12 mm square, which are manufactured using multiple techniques that include metal alloy wire wound construction technique and ferrite multilayer technique. We offer the optimum inductors for a wide range of applications including wearable devices, smartphones, medical applications, industrial electronics, and on board devices.

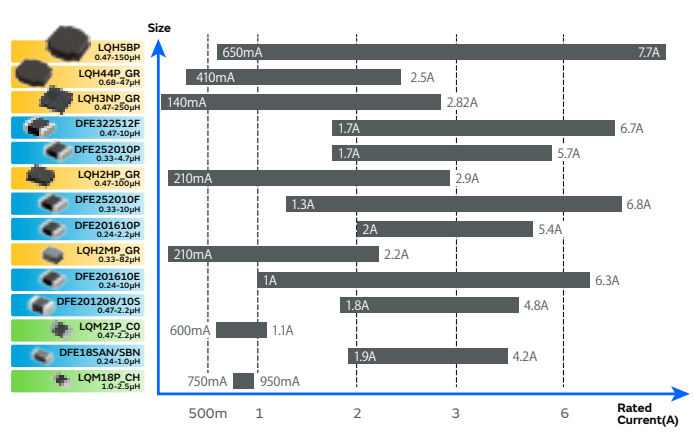
Structure	Description	Series
Wound Metal Alloy	Supports high current by using metal materials in which magnetic saturation does not occur so easily. This product can be used for a wide range of high current power circuits from smart phones to industrial electronics and automotive device applications.	DFEC/DFES series DFEG/DFEH series FSDS series
Multilayer Type	The features of this product is its small size and low profile. For example, 2012 or smaller footprint and 0.6mm height. This is ideal for low power circuits, including wearable devices and smartphones.	LQM series
Wound Ferrite Core	A feature of this product is the extensive lineup which supports an inductance of 100 μH or more. It is suitable for step-up power supply circuits in backlights, and choke applications.	LQH series MDH series DEM series

Recommended Lineup (General)

List of inductance values

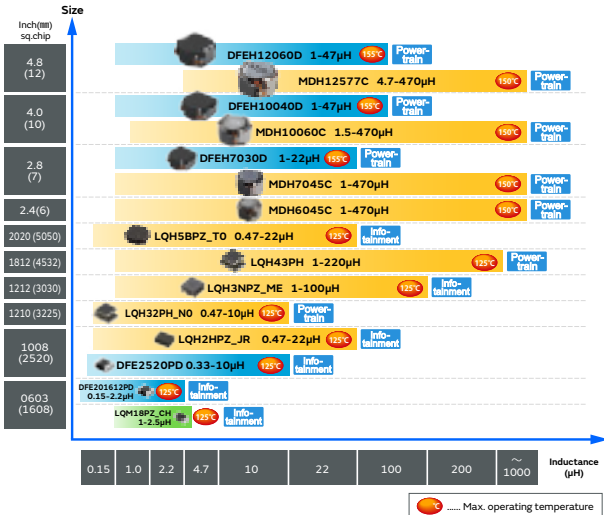


List of rated current values

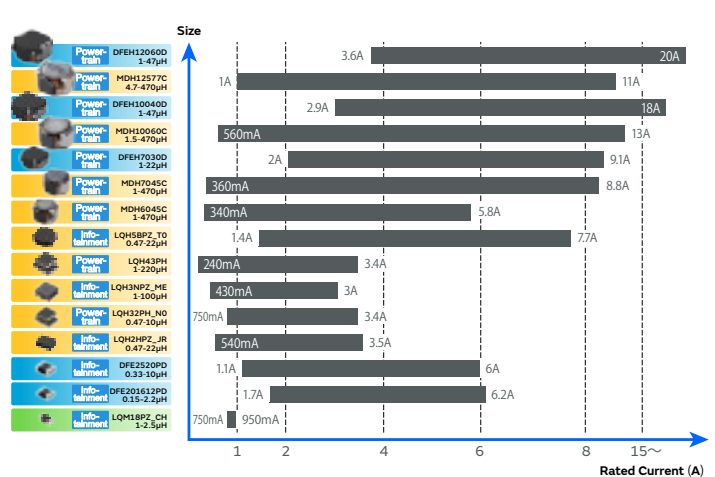


Recommended Lineup (For Automotive)










List of inductance values



List of rated current values












For Power Circuits (For General)









































Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range	
Wound Metal Alloy Type	0603 (1608)	DFE18SAN	 DFE18SAN_EO	0.8	240nH to 1µH	2A to 4.2A	
			DFE18SAN_GO	1.0	240nH to 1µH	2.1A to 4.9A	
DFE18SBN		 DFE18SBN_EO	0.8	470nH to 1µH	1.9A to 3.1A		
		LQM18PN	 LQM18PN_B0	0.4	1.5µH	600mA	
LQM18PN_CO			0.55	470nH to 2.2µH	700mA to 850mA		
LQM18PN_DO			0.75	2.5µH	700mA		
LQM18PN_DH			0.75	2.2µH	650mA		
LQM18PN_F0			0.95	1µH	600mA		
LQM18PN_FH			0.95	470nH to 2.2µH	700mA to 1.4A		
LQM18PN_FR			0.95	220nH to 4.7µH	620mA to 1.25A		
LQM18PN_GH	1.0		1µH to 3.3µH	1.05A			
LQM18PW_CH	0.65	1µH to 2.5µH	750mA to 950mA				
Wound Metal Alloy Type	0805 (2012)	DFE2012	 DFE201208S	0.8	470nH to 2.2µH	1.8A to 4A	
			DFE201210S	1.0	470nH to 2.2µH	2.1A to 4.8A	
			DFE201210U	1.0	240nH to 2.2µH	2A to 6.5A	
LQM21PN		 LQM21PN_CO	0.55	470nH to 2.2µH	600mA to 1.1A		
		LQM21PN_CA	0.65	2.2µH	1.05A		
		LQM21PN_CH	0.55	470nH to 2.2µH	1.05A to 1.6A		
		LQM21PN_EH	0.8	240nH to 2.2µH	1.1A to 2.8A		
		LQM21PN_G0	1.0	470nH to 3.3µH	800mA to 1.3A		
		LQM21PN_GC	1.0	1µH to 2.2µH	800mA to 900mA		
		LQM21PN_GH	1.0	470nH to 4.7µH	1A to 2.4A		
	LQM21PN_GR	1.0	1µH to 4.7µH	800mA to 1.3A			
LQM21PN_GS	1.0	2.2µH to 4.7µH	750mA to 950mA				
Wound Metal Alloy Type	0806 (2016)	DFE2016	 DFE201610C	1.0	560nH to 2.2µH	1.5A to 2.8A	
			DFE201610E	1.0	240nH to 10µH	1A to 6.3A	
			DFE201610P	1.0	240nH to 2.2µH	2A to 5.4A	
			DFE201610R	1.0	470nH to 2.2µH	1.6A to 3A	
			DFE201612C	1.2	470nH to 2.2µH	1.6A to 3.4A	
			DFE201612E	1.2	240nH to 4.7µH	1.8A to 6.6A	
			DFE201612P	1.2	240nH to 2.2µH	2.1A to 6.5A	
			DFE201612R	1.2	470nH to 2.2µH	1.7A to 3.5A	
Wound Ferrite Core Type			LQH2MCN	 LQH2MCN_O2	0.95	1µH to 82µH	90mA to 485mA
				LQH2MCN_52	0.7	1µH to 22µH	130mA to 595mA
LQH2MPN	 LQH2MPN_GR		0.95	330nH to 82µH	210mA to 2.2A		
	LQM2MPN		 LQM2MPN_DH	0.7	2.2µH	1.27A	
LQM2MPN_EH			0.8	240nH to 2.2µH	1.1A to 4.1A		
LQM2MPN_G0			1.0	470nH to 4.7µH	1.1A to 1.6A		
LQM2MPN_GH			1.0	160nH to 2.2µH	1.3A to 5A		

Continued on the following page. ↗

Inductors for Power Lines








Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range		
Wound Metal Alloy Type	1008 (2520)	DFE2520		DFE252007F	0.7	470nH to 4.7µH	1.2A to 3.3A	
				DFE252008C	0.8	470nH to 4.7µH	1.1A to 3A	
				DFE252008U	0.8	470nH to 10µH	1A to 4.5A	
				DFE252010C	1.0	470nH to 10µH	1A to 3.5A	
				DFE252010F	1.0	330nH to 10µH	1.3A to 6.8A	
				DFE252010P	1.0	330nH to 4.7µH	1.7A to 5.7A	
				DFE252010R	1.0	1µH to 4.7µH	1.4A to 3A	
				DFE252012C	1.2	470nH to 10µH	1A to 3.8A	
				DFE252012F	1.2	330nH to 10µH	1.4A to 7.6A	
				DFE252012P	1.2	330nH to 4.7µH	2A to 6.6A	
				DFE252012R	1.2	1µH to 4.7µH	1.7A to 3.4A	
Wound Ferrite Core Type	1008 (2520)	LQH2HPN		LQH2HPN_DR	0.6	470nH to 22µH	270mA to 1.67A	
				LQH2HPN_GR	1.0	470nH to 100µH	210mA to 2.9A	
				LQH2HPN_JR	1.2	470nH to 22µH	540mA to 3.5A	
Multilayer Type	1008 (2520)	LQM2HPN		LQM2HPN_CH	0.55	240nH to 2.2µH	850mA to 2.55A	
				LQM2HPN_E0	0.8	560nH	1.5A	
				LQM2HPN_EH	0.8	240nH to 2.2µH	1.3A to 4.5A	
				LQM2HPN_GO	1.0	470nH to 4.7µH	1.1A to 1.8A	
				LQM2HPN_GC	1.0	1µH to 4.7µH	800mA to 1.5A	
				LQM2HPN_GH	1.0	240nH to 2.2µH	1.5A to 5A	
				LQM2HPN_GS	1.0	2.2µH to 4.7µH	1A to 1.1A	
				LQM2HPN_J0	1.2	1µH to 3.3µH	1A to 1.5A	
LQM2HPN_JH	1.2	470nH to 2.2µH	1.5A to 3.2A					
Wound Ferrite Core Type	3mm square	DEM28/DEM35		DEM2812C	1.2	470nH to 12µH	760mA to 3.1A	
				DEM2815C	1.5	470nH to 15µH	800mA to 3.9A	
				DEM2818C	1.8	470nH to 12µH	1A to 4.7A	
				DEM3512C	1.2	680nH to 22µH	530mA to 2.5A	
				DEM3518C	1.8	560nH to 22µH	880mA to 3.4A	
		LQH3NPN			LQH3NPN_GR	1.0	470nH to 250µH	140mA to 2.82A
					LQH3NPN_JR	1.2	680nH to 47µH	570mA to 2.86A
					LQH3NPN_ME	1.5	1µH to 100µH	430mA to 3A
					LQH3NPN_MR	1.5	1µH to 47µH	460mA to 2.15A
					LQH3NPN_N0	1.7	470nH to 120µH	200mA to 3.4A
Multilayer Type	1206 (3216)	LQM31PN		LQM31PN_00	0.95	470nH to 4.7µH	700mA to 1.4A	
Wound Metal Alloy Type	1210 (3225)	DFE3225		DFE322510C	1.0	470nH to 10µH	1A to 3.8A	
				DFE322512C	1.2	470nH to 10µH	1.2A to 4.7A	
				DFE322512F	1.2	470nH to 10µH	1.7A to 6.7A	
Wound Ferrite Core Type	1210 (3225)	LQH32P		LQH32PB_N0	1.7	470nH to 120µH	200mA to 3.4A	
				LQH32PB_NC	1.7	470nH to 22µH	650mA to 4.4A	
				LQH32PN_N0	1.7	470nH to 120µH	200mA to 3.4A	
				LQH32PN_NC	1.7	470nH to 22µH	650mA to 4.4A	
Multilayer Type	1210 (3225)	LQM32PN		LQM32PN_GO	1.0	1µH	1.8A	
				LQM32PN_GC	1.0	1µH	2.2A	

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


Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range		
Wound Metal Alloy Type	4mm square	FDSD04	 FDSD0412	1.2	330nH to 4.7µH	2.5A to 7.5A		
			 FDSD0415	1.5	220nH to 4.7µH	2.9A to 12A		
			 FDSD0420	2.0	330nH to 10µH	2.5A to 11A		
			 FDSD0420W	2.0	15µH to 22µH	1.5A to 1.9A		
Wound Ferrite Core Type		LQH44PN	 LQH44PN_GR	1.0	680nH to 47µH	410mA to 2.5A		
			 LQH44PN_J0	1.2	1µH to 47µH	380mA to 2A		
			 LQH44PN_P0	1.8	1µH to 22µH	800mA to 2.95A		
			LQH43P	 LQH43PB_26	2.8	1µH to 220µH	240mA to 3.4A	
				 LQH43PN_26	2.8	1µH to 220µH	240mA to 3.4A	
			DEM4518	 DEM4518C	1.8	1.2µH to 22µH	1A to 3.5A	
Wound Ferrite Core Type		5mm square	LQH5BP	 LQH5BPB_T0	2.2	470nH to 22µH	1.4A to 7.7A	
				 LQH5BPN_38	4.0	1µH to 150µH	650mA to 7A	
	 LQH5BPN_T0			2.2	470nH to 22µH	1.4A to 7.7A		
	D52LC/D53LC		 D52LC	2.0	1.2µH to 100µH	260mA to 2.44A		
			 D53LC	3.0	1.1µH to 220µH	350mA to 3.87A		
	Wound Metal Alloy Type		FDV05	 FDV0530S	3.0	0.12µH to 2.2µH	4.5A to 18A	
FDSD05				 FDSD0512	1.2	1µH to 6.8µH	2.3A to 6.1A	
				 FDSD0515	1.5	1µH to 4.7µH	3.2A to 7A	
	 FDSD0518		1.8	680nH to 10µH	2.7A to 9A			
Wound Ferrite Core Type	6 to 9mm square		DG60	 DG6028C	2.8	1µH to 22µH	1.7A to 5.8A	
				 DG6045C	4.5	1µH to 100µH	900mA to 9.5A	
				 DG6050C	5.0	1.2µH to 100µH	1.2A to 9.8A	
		D63	 D63LCB	3.0	1µH to 150µH	440mA to 4.52A		
		DS75LC	 DS75LC	5.0	1µH to 470µH	430mA to 9.2A		
		DEM80	 DEM8030C	3.0	1.5µH to 47µH	1.3A to 7.5A		
			 DEM8040C	4.0	1.5µH to 33µH	2.4A to 10A		
			 DEM8045C	4.5	1.5µH to 47µH	2.1A to 11.2A		
		DG80	 DG8040C	4.0	1µH to 100µH	1.3A to 10.4A		
		Wound Metal Alloy Type	FCUL05	 FCUL0530	3.0	360nH to 470nH	16A to 18A	
				FDSD06	 FDSD0630	3.0	680nH to 10µH	5.4A to 17A
					 FCUL0624	2.4	220nH to 470nH	17A to 24A
FDV05/FDV06	 FCUL0630			3.0	120nH to 680nH	15A to 32A		
	 FDV0530			3.0	110nH to 4.7µH	3.6A to 19.6A		
	 FDV0618			1.8	240nH to 3.3µH	4.1A to 14A		
	 FDV0620	2.0	200nH to 4.7µH	3.5A to 16.2A				
FDVE06	 FDVE0630	3.0	160nH to 10µH	3.1A to 20.7A				
	 FDVE0640	4.0	1.5µH to 4.7µH	5A to 8.2A				
	FDUE06	 FDUE0630	3.0	120nH to 240nH	27A to 36A			
		 FDUE0640	4.0	150nH to 420nH	22A to 33A			
 FDUE0650		5.0	600nH to 1µH	16A to 18A				

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






Inductors for Power Lines

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range
Wound Ferrite Core Type	10mm square and over	DEM10050	 DEM10050C	5.0	1.5µH to 33µH	3.5A to 15.3A
			DEM10050C_DD	5.0	1.5µH to 33µH	3.5A to 15.3A
		DS10/DS12	 DS104C2	4.8	1.1µH to 120µH	970mA to 11.7A
			DS106C2	6.8	1.2µH to 330µH	690mA to 12A
Wound Metal Alloy Type		FDA10/FDA12	 FDA1055	5.5	560nH to 5.6µH	8A to 27.7A
			FDA1254	5.4	680nH to 8µH	9.1A to 29.1A
		FDUE10	 FDUE1040D	4.0	220nH to 1µH	18A to 32A
		FDVE10	 FDVE1040	4.0	1.5µH to 10µH	6.1A to 14.6A
	FCUL10	 FCUL1040	4.0	180nH to 420nH	34A to 53A	
		FCUL1060	6.0	360nH to 560nH	34A to 41A	
	FDUE12	 FDUE1245	4.5	500nH to 2.2µH	17A to 30A	
		FDUE1260	6.0	450nH	34A	


For Choke Circuits (For General)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range	
Wound Ferrite Core Type	0402 (1005)	LQW15D	 LQW15DN_00	0.7	10µH to 15µH	100mA to 120mA	
Multilayer Type	0603 (1608)	LQM18FN	 LQM18FN_00	0.9	1µH to 10µH	50mA to 150mA	
	0805 (2012)	LQM21DN	 LQM21DN_00	1.05	1µH to 47µH	7mA to 60mA	
			LQM21FN_00	1.45	1µH to 47µH	7mA to 220mA	
			LQM21FN_70	1.45	4.7µH to 10µH	100mA to 120mA	
		LQM21FN_80	1.45	4.7µH to 10µH	100mA to 120mA		
Wound Ferrite Core Type	1206 (3216)	LQH31CN	 LQH31CN_03	2.0	120nH to 100µH	80mA to 970mA	
	1210 (3225)	LQH32CN	LQH32CN_23	2.2	1µH to 560µH	60mA to 800mA	
			LQH32CN_33	2.2	150nH to 10µH	450mA to 1.45A	
			LQH32CN_53	1.7	1µH to 100µH	100mA to 1A	
			LQH32DN	LQH32DN_23	2.2	1µH to 560µH	60mA to 800mA
				LQH32DN_53	1.7	1µH to 100µH	100mA to 1A
	4mm square	LQH43CN	 LQH43CN_03	2.8	1µH to 470µH	90mA to 1.08A	
	5mm square	LQH55DN	 LQH55DN_03	5.0	120nH to 10mH	50mA to 6A	
6 to 9mm square	LQH66SN	 LQH66SN_03	5.0	270nH to 10mH	50mA to 6A		


For Power Circuits (Infotainment)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range
Multilayer Type	0603 (1608)	LQM18PZ	 LQM18PZ_CH	0.6	1μH to 2.5μH	750mA to 950mA
			 LQM18PZ_DH	0.75	2.2μH	650mA
			 LQM18PZ_FH	0.95	2.2μH	700mA
	0805 (2012)	LQM21PZ	 LQM21PZ_C0	0.55	470nH to 2.2μH	600mA to 1.1A
			 LQM21PZ_G0	1.0	470nH to 3.3μH	800mA to 1.3A
			 LQM21PZ_GC	1.0	1μH to 2.2μH	800mA to 900mA
			 LQM21PZ_GR	1.0	1μH to 4.7μH	800mA to 1.3A
Wound Metal Alloy Type Wound Ferrite Core Type Multilayer Type	0806 (2016)	DFE201612	 DFE201612P_D	1.2	150nH to 2.2μH	1.7A to 6.2A
			 LQH2MPZ	0.95	330nH to 82μH	210mA to 2.2A
		LQM2MPZ	 LQM2MPZ_G0	1.0	470nH to 4.7μH	1.1A to 1.6A
			 LQM2MPZ_JH	1.2	100nH	4A
Wound Ferrite Core Type		LQH2HPZ	 LQH2HPZ_DR	0.6	470nH to 22μH	270mA to 1.67A
			 LQH2HPZ_GR	1.0	470nH to 22μH	460mA to 2.9A
			 LQH2HPZ_JR	1.2	470nH to 22μH	540mA to 3.5A
Multilayer Type	1008 (2520)	LQM2HPZ	 LQM2HPZ_E0	0.8	560nH	1.5A
			 LQM2HPZ_G0	1.0	470nH to 4.7μH	1.1A to 1.8A
			 LQM2HPZ_GC	1.0	1μH to 4.7μH	800mA to 1.5A
			 LQM2HPZ_GS	1.0	2.2μH to 4.7μH	1A to 1.1A
			 LQM2HPZ_J0	1.2	1μH to 3.3μH	1A to 1.5A
Wound Metal Alloy Type		DFE2520	 DFE252012P_D	1.2	330nH to 10μH	1.1A to 6A
Wound Ferrite Core Type	3mm square	LQH3NPZ	 LQH3NPZ_GR	1.0	470nH to 47μH	460mA to 2.82A
			 LQH3NPZ_JR	1.2	680nH to 47μH	570mA to 2.86A
			 LQH3NPZ_ME	1.5	1μH to 100μH	430mA to 3A
	1210 (3225)	LQH32PZ	 LQH32PZ_N0	1.7	470nH to 120μH	200mA to 3.4A
			 LQH32PZ_NC	1.7	470nH to 22μH	650mA to 4.4A
	4mm square	LQH44PZ	 LQH44PZ_GR	1.0	680nH to 47μH	410mA to 2.5A
			 LQH43PZ	2.8	1μH to 220μH	240mA to 3.4A
5mm square	LQH5BPZ	 LQH5BPZ_T0	2.2	470nH to 22μH	1.4A to 7.7A	

For Power Circuits (Powertrain)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range	
Multilayer Type	0805 (2012)	LQM21PH 	LQM21PH_GC	1.0	2.2µH	800mA	
Wound Ferrite Core Type	1210 (3225)	LQH32PH 	LQH32PH_N0	1.7	470nH to 10µH	750mA to 3.4A	
			LQH32PH_NC	1.7	470nH to 22µH	650mA to 4.4A	
	4mm square	LQH43PH 	LQH43PH_26	2.8	1µH to 220µH	240mA to 3.4A	
			MDH60/MDH70 	MDH6045C	4.8	1µH to 470µH	340mA to 5.8A
				MDH7045C	4.8	1µH to 470µH	360mA to 8.8A
			6 to 9mm square	MBH60/MBH70 	MBH6045C	4.8	1µH to 470µH
MBH7045C	4.8	2.2µH to 1mH			310mA to 4.6A		
Wound Metal Alloy Type		DFEG70/DFEH70 	DFEG7030D	3.0	1µH to 22µH	2A to 9.1A	
			DFEH7030D	3.0	1µH to 22µH	2A to 9.1A	
Wound Ferrite Core Type	10mm square and over	MDH10/MDH12 	MDH10060C	6.3	1.5µH to 470µH	560mA to 1.3A	
			MDH12577C	8.0	4.7µH to 470µH	1A to 11A	
		MBH10/MBH12 	MBH10145C	4.8	3.3µH to 1.5mH	330mA to 4.9A	
			MBH12282C	8.5	2µH to 1mH	590mA to 13A	
			MBH12575C	7.85	2.7µH to 220µH	1.2A to 10A	
Wound Metal Alloy Type		DFEG10/DFEH10 	DFEG10040D	4.0	1µH to 47µH	2.9A to 18A	
			DFEH10040D	4.0	1µH to 47µH	2.9A to 18A	
		DFEG12/DFEH12 	DFEG12060D	6.0	1µH to 47µH	3.6A to 20A	
			DFEH12060D	6.0	1µH to 47µH	3.6A to 20A	

For Choke Circuits (Infotainment)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range
Wound Ferrite Core Type	1210 (3225)	LQH32D 	LQH32DZ_23	2.2	1µH to 470µH	60mA to 800mA
			LQH32DZ_53	1.7	1µH to 100µH	100mA to 1A

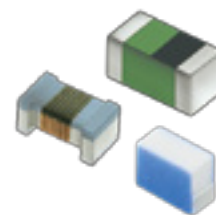
For Choke Circuits (Powertrain)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range
Wound Ferrite Core Type	1210 (3225)	LQH32C 	LQH32CH_23	2.2	1µH to 22µH	250mA to 800mA
			LQH32CH_33	2.2	150nH to 10µH	450mA to 1.45A
			LQH32CH_53	1.7	1µH to 22µH	250mA to 1A
		LQW32F 		LQW32FT_0H	2.5	10µH to 47µH

RF Inductors

Main Type:

- Film Type ▪ Wire Wound Type ▪ Multilayer Type



An RF inductor is used for matching applications and choke applications in the RF section which has wireless communication functions. By using three characteristic methods, you can select the optimum series for the intended application. For a smartphone or a module film type LQP series which is compact and also has high Q characteristics is optimum. For an RF inductor of size 1005 mm or more, the high Q wound type LQW series which has a large rated current value is recommended for use in a base station or STB. While the multilayer LQG series has a good balance between cost and performance, it is recommended for a wide range of automotive applications, based on our market achievements over many years. Products that are suitable for choke circuits using magnetic materials, such as the LQW_CN series, LQW_H series and other series are also available for power lines. You can select the optimum series from our lineup, based on either the intended application or the relationship between the size and Q characteristics.

General (0.8x0.4 mm or less)

Lineup list

High ↑ Q	LQP series category LQP**TN/LQP**TG series; standard type LQP** TQ series; High Q type LQP** HQ series; super High Q type				
High Current	Q value @800MHz for item around 10nH				
Size inch/mm	(080804/0201) 0.25 x 0.125mm	(01005/0402) 0.4 x 0.2mm	(0201/0503) 0.6 x 0.3mm	(0201/0503) 0.5 x 0.4mm	(0301/0504) 0.8 x 0.4mm

General (1.0x0.5 mm or more)

Lineup list











High ↑ Q	LQW series category LQW**00 series; standard Q type LQW** 10 series; High Q type LQW** 80 series; High Q and large current			
High Current	Q value @800MHz for item around 10nH			
Size inch/mm	(0402/2005) 1.0 x 0.5mm	(0503/1508) 1.5 x 0.5mm	(0808/2015) 2.0 x 1.5mm	(1008/2520) 2.5 x 2.0mm

For Automotive

Lineup list

High ↑ Q	For infotainment		For powertrain/safety	
	LQW series 		LQG H series 	
High Current	LQP series 		LQG_Z series 	
Size inch/mm	(0201/0503) 0.6 x 0.3mm	(0402/1005) 1.0 x 0.5mm	(0503/1508) 1.6 x 0.8mm	(0402/1005) 1.0 x 0.5mm






RF Circuits (0.8 x 0.4 mm or less)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range
Wound non-magnetic type	0201 (0603)	LQW03A	 LQW03AW_00	0.45	1nH to 15.5nH	230mA to 900mA
	03019 (0805)		LQW04A	 LQW04AN_00	0.45	0.8nH to 33nH
		 LQW04AN_10		0.45	36nH to 56nH	180mA to 200mA
Film type	008004 (0201)	LQP01	 LQP01HQ	0.213	0.3nH to 2.7nH	200mA to 500mA
	01005 (0402)		LQP02	 LQP02HQ_02	0.32	0.2nH to 56nH
		 LQP02TQ_02		0.22	0.2nH to 22nH	120mA to 990mA
	0201 (0603)	LQP03	 LQP03HQ_02	0.42	0.5nH to 470nH	50mA to 1.1A
			 LQP03TQ_02	0.32	0.6nH to 110nH	70mA to 1A
			 LQP03TN_02	0.33	0.6nH to 270nH	60mA to 850mA
			 LQP03TG_02	0.33	0.1nH to 120nH	80mA to 850mA
			 LQP03PN_02	0.33	2.2nH to 4.7nH	900mA to 1.4A

RF Circuits (1.0 x 0.5 mm or more)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range
Wound non-magnetic type	0402 (1005)	LQW15A	 LQW15AN_00	0.6	1.5nH to 120nH	110mA to 1A
			 LQW15AN_10	0.6	1.3nH to 8.4nH	640mA to 1.2A
			 LQW15AN_80	0.6	1.3nH to 75nH	320mA to 3.15A
			 LQW15AW_80	0.66	51nH to 220nH	220mA to 480mA
	0603 (1608)	LQW18A	 LQW18AN_00	1.0	2.2nH to 470nH	75mA to 850mA
			 LQW18AN_10	1.0	2.2nH to 33nH	550mA to 1.4A
			 LQW18AN_80	1.0	2.2nH to 390nH	190mA to 3.2A
			 LQW18AS_00	1.0	1.6nH to 390nH	100mA to 700mA
			 LQW18AS_0C	1.0	4.3nH to 390nH	100mA to 700mA
	0806 (2016)	LQW2B	 LQW2BAN_00	1.52	3.2nH to 200nH	750mA to 3.8A
			 LQW2BAS_00	1.52	2.7nH to 1µH	170mA to 910mA
			 LQW2BHN_03	1.78	3.3nH to 470nH	160mA to 1.32A
			 LQW2BHN_13	1.78	2.7nH to 27nH	900mA to 1.9A
	1008 (2520)	LQW2U	 LQW2UAS_00	2.03	12nH to 4.7µH	260mA to 1A
	1206 (3216)	LQW31H	 LQW31HN_03	2.0	8.8nH to 100nH	230mA to 750mA
Film type	0402 (1005)	LQP15M	 LQP15MN_02	0.45	1nH to 33nH	60mA to 400mA
	0603 (1608)	LQP18M	 LQP18MN_02	0.6	1.3nH to 100nH	50mA to 300mA
Multilayer type	0402 (1005)	LQG15H	 LQG15HN_02	0.55	1nH to 120nH	150mA to 1A
			 LQG15HS_02	0.55	1nH to 270nH	110mA to 1A
	0603 (1608)	LQG18H	 LQG18HN_00	0.95	1.2nH to 100nH	350mA to 1.1A

For Choke/Tuner Circuits (1.0 x 0.5 mm or more)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range
Wound Ferrite Core type	0402 (1005)	LQW15C	 LQW15CN_00	0.6	18nH to 200nH	390mA to 1.4A
			LQW15CN_10	0.6	20nH to 3.3µH	130mA to 2.2A
	0402 (1005)	LQW15D	 LQW15DN_00	0.7	10µH to 15µH	100mA to 120mA
	0603 (1608)	LQW18C	 LQW18CN_00	0.95	4.9nH to 650nH	430mA to 2.6A
	0805 (2012)	LQW21H	 LQW21HN_00	1.0	470nH to 2.2µH	75mA to 160mA
	1206 (3216)	LQH31H	 LQH31HN_03	2.0	54nH to 880nH	180mA to 920mA






LC trap filter






LQZ02HQ Series

Part number	Impedance (Ω Typ.)			Insertion Loss Characteristic (dB Typ.)			DC Resistance Max.(Ω)	Rated Current (mA)	Self Resonant Frequency (GHz Typ.)
	at 2.40GHz	at 2.44GHz	at 2.50GHz	at 2.40GHz	at 2.44GHz	at 2.50GHz			
LQZ02HQ242A02	460	600	345	15.0	15.7	13.0	0.55	200	2.44

For RF Circuits (Infotainment)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range
Wound non-magnetic type	0402 (1005)	LQW15A	 LQW15AN_OZ	0.6	1.5nH to 120nH	110mA to 1A
			LQW15AN_1Z	0.6	1.3nH to 8.4nH	640mA to 1.2A
			LQW15AN_8Z	0.6	1.3nH to 75nH	320mA to 3.15A
	0603 (1608)	LQW18A	 LQW18AN_OZ	1.0	2.2nH to 470nH	75mA to 850mA
			LQW18AN_1Z	1.0	2.2nH to 33nH	550mA to 1.4A
			LQW18AN_8Z	1.0	2.2nH to 390nH	190mA to 3.2A
		LQW18AS_OZ	1.0	1.6nH to 390nH	100mA to 700mA	
Film type	0201 (0603)	LQP03T	 LQP03TN_Z2	0.33	0.6nH to 120nH	80mA to 850mA
Multilayer type	0402 (1005)	LQG15H	 LQG15HZ_O2	0.55	1nH to 270nH	110mA to 1A
		LQG15W	 LQG15WZ_O2	0.6	0.7nH to 150nH	110mA to 1.2A

For RF Circuits (Powertrain)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range
Multilayer type	0402 (1005)	LQG15H	 LQG15HH_O2	0.55	1nH to 270nH	110mA to 1A
		LQG15W	 LQG15WH_O2	0.6	0.7nH to 150nH	110mA to 1.2A
	0603 (1608)	LQG18H	 LQG18HH_O0	0.95	1.2nH to 270nH	200mA to 1.1A

For Choke/Tuner Circuits (Infotainment)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range
Wound Ferrite Core type	0402 (1005)	LQW15C	LQW15CN_OZ	0.6	18nH to 200nH	390mA to 1.4A
			LQW15CN_1Z	0.6	20nH to 560nH	300mA to 2.2A
	0603 (1608)	LQW18C	LQW18CN_OZ	0.95	4.9nH to 650nH	430mA to 2.6A
	1206 (3216)	LQH31H	LQH31HZ_03	2.0	54nH to 880nH	180mA to 920mA

General Circuits Inductors

Main Type:

- Multilayer Type
- Wire-wound Type



We have an extensive lineup of general purpose inductors for a variety of circuits.

You can select an inductor to match your particular application. Wire-wound type LQH_M, LQH_N series are suitable for large inductance, multilayer type LQM_M, LQM_N series are suitable for small size.

General Purpose (For General)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range
Wound Ferrite Core Type	03019 (0805)	LQW04CA	LQW04CA_00	0.55	60nH to 510nH	200mA to 620mA
	0402 (1005)	LQW15CA	LQW15CA_00	0.66	22nH to 2μH	130mA to 1.3A
	0603 (1608)	LQW18CA	LQW18CA_00	0.95	32nH to 580nH	450mA to 2.2A
	1206 (3216)	LQH31MN	LQH31MN_03	2	150nH to 100μH	45mA to 250mA
	1210 (3225)	LQH32MN	LQH32MN_23	2.2	1μH to 560μH	40mA to 445mA
	4mm square	LQH44NN	LQH44NN_03	4.5	510nH to 470μH	145mA to 4.5A
		LQH43M/N	LQH43MN_03	2.8	1μH to 1.5mH	40mA to 500mA
Multilayer Type	0402 (1005)	LQB15NN	LQB15NN_10	0.55	220nH to 560nH	300mA to 380mA
		LQB18NN	LQB18NN_10	0.95	220nH to 560nH	300mA to 450mA
	0603 (1608)	LQM18JN	LQM18JN_00	0.65	100nH to 160nH	550mA to 650mA
		LQM18NN	LQM18NN_00	0.95	47nH to 2.2μH	15mA to 50mA
	0805 (2012)	LQM21NN	LQM21NN_10	1.05	100nH to 4.7μH	30mA to 250mA

General Purpose (For Automotive Infotainment)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range
Wound Ferrite Core Type	1210 (3225)	LQH32NZ	LQH32NZ_23	2.2	1μH to 470μH	45mA to 445mA
	4mm square	LQH43NZ	LQH43NZ_03	2.8	1μH to 2.4mH	25mA to 500mA

General Purpose (For Automotive Powertrain)

Structure	Size Code inch (mm)	Short Series Name/View	Series	Thickness (mm/max.)	Inductance Range	Rated Current Range
Wound Ferrite Core Type	1210 (3225)	LQH32NH	 LQH32NH_23	2.2	1µH to 560µH	40mA to 780mA

Variable Inductors

Variable inductor products are coil products that allow the inductance to be easily varied by changing the position of the ferrite core in a threaded structure. The interior is covered by a metal case that is magnetically shielded, while a resin molded structure protects the windings with a high degree of reliability.



5CCEG

6.5×5.9×6.0(H) mm MAX.

Supported inductance range: 0.05 to 2.7µH

Features

- High reliability that conforms to automotive standards
- Operating temperature range: -40°C to +85°C

Applications

- Ideal for use as RF matching transformers for car tuners



FSDVA

5.8×5.8×5.5(H) mm MAX.




Supported inductance range:

0.1 to 52mH(1 to 7 mH for corner sensor applications)

Features



- Resistant to mechanical stress
- Operating temperature range:
Up to 20 mH (-40°C to +105°C)
20 mH or more (-40°C to +85°C)
- Various reliability conditions guaranteed for 1,000 hours
(evaluation performed up to 3,000 hours)
- Lead coplanarity guaranteed within 0.1 mm


5CCEG Series

Winding Connection (Bottom View)	Part Number	Test Frequency (MHz)	Resonance Capacitor Range (pF)	Unloaded Q
	#A1313AN-0001GGH=P3	100	11.4+3/-3%	72+/-20%
	#A1313AN-0002GRG=P3	100	11.4+5/-2%	61+/-20%
	#A1313AN-0003GRG=P3	100	11.4+2/-4%	54+/-20%
	#A1313AN-0004GGH=P3	100	11.7+3/-3%	72+/-20%

Variable Inductors

FSDVA Series

Winding Connection (Bottom View)	Part Number	Test Frequency (kHz)	Inductance Range (mH)	Unloaded Q
	N1342BCA-0004UG=P3	252	4.4±3%	25 min.
	N1342DEA-0008BQE=P3	252	2.5±5%	25 min.

Winding Connection (Bottom View)	Part Number	Test Frequency (kHz)	Inductance Tolerance (mH)	Unloaded Q
	N1342AAA-0001Z=P3	79.6	52±7%	10 min.

DC-DC converter design assistant tool

No download necessary; available on web browsers.

We have released a design assistant tool to select inductors or capacitors for DC-DC converter efficiently.

Input converter work condition and click the calculation button; the ranking of efficiency with each inductor will be listed.

To use this tool, go to

<https://ds.murata.co.jp/mpst>

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- Chip Inductors (Chip Coils)
- EMI Suppression Filters (for DC)/Chip Inductors for Automotive

Cat. No. O05E

Cat. No. C51E

Resistors

Full lineup for various applications

Summary

Using Murata's ceramic processing technology and unique materials, we offer a series of resistor products.

Lineup

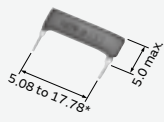
- High Voltage Resistors



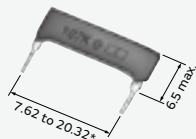
<https://www.murata.com/en-global/products/resistor>

High Voltage Resistors

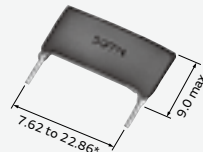
Featuring thick-film resistors, the Murata MHR series of high-voltage resistors is available in compact and thin SIP packages. Variants with small deviations are also available on request.



MHR03 Series



MHR04 Series



MHR06 Series

(in mm)

*The terminal pitch is an integral multiple of 2.54mm.

Series	Resistance (min.) (MΩ)	Resistance (max.) (MΩ)	Maximum Operating Voltage (Single Use) (kV)	Maximum Operating Voltage (Molded Use) (kV)	Rated Power (W)
MHR03	1	500 to 1000	2 to 8	3 to 14	0.3 to 1.0
MHR04	1	1000	3.5 to 10	10 to 18	0.6 to 1.4
MHR06	1	1000	3.5 to 10	10 to 20	0.8 to 1.6

Resistance 2 element type is also available.
For resistance value and ratio, please contact us.

Timing Devices

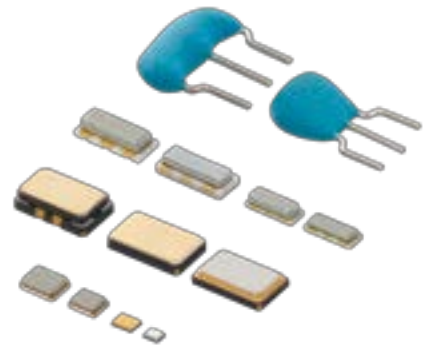
A stable timing source for microprocessors in various electronic devices

Summary

Murata's ceramic processing technology and unique piezoelectric material has led to the development of a range of small and thin ceramic timing devices that offer high oscillation frequency and remarkable oscillation tolerance.

Lineup

- Crystal Units ●Crystal Oscillators
- Ceramic Resonators CERALOCK®



<https://www.murata.com/en-global/products/timingdevice>

IC Part Number - Timing Devices Search

Search for Timing Devices by IC part number or search for IC part number by Timing Devices on our website. It is also possible to search by either oscillating frequency or frequency range.

Part Number	OSC. FREQ. (MHz)	FREQUENCY TOLERANCE	Q1 (dB)	Q2 (dB)
1 CERALOCK®P16P0400-00	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-01	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-02	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-03	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-04	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-05	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-06	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-07	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-08	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-09	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-10	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-11	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-12	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-13	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-14	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-15	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-16	4.0	±0.01%	20	20
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1 CERALOCK®P16P0400-49	4.0	±0.01%	20	20
1 CERALOCK®P16P0400-50	4.0	±0.01%	20	20

<https://www.murata.com/sim surfing/>

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



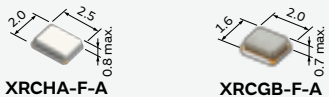
- Ceramic Resonators (CERALOCK®)
- Ceramic Resonator (CERALOCK®) Application Manual
- Crystal Units/Crystal Oscillators

Cat. No. P16E
Cat. No. P17E
Cat. No. P79E

Crystal Units

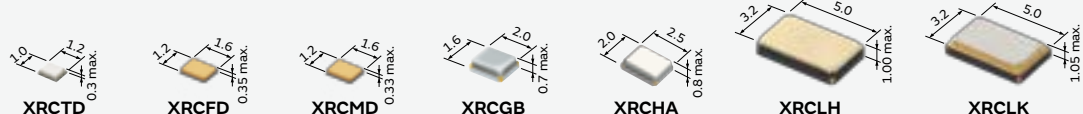
Crystal Units utilize highly accurate frequency-based high-grade quartz crystal elements. We offer a wide lineup of Crystal Units using Murata's proven package technology for small digital devices, automotive, etc.

For Automotive



Series	Type	Seal	Frequency (MHz)								Frequency Tolerance (ppm)					Frequency Shift by Temperature (ppm max.)	Operating Temperature Range (°C)
			0	10	20	30	40	50	60	0	20	40	60	80	100		
XRCHA-F-A	HCR2520	Resin	16.0000 — 24.0000								±100 ●					±100	-40 to 125
XRCGB-F-A	HCR2016	Resin	24.0000 — 29.9999								● ±30					±35	-40 to 125
			30.0000 — 48.0000								● ±50					±65	-40 to 125

For Consumer/Industrial

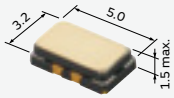


Series	Type	Seal	Frequency (MHz)								Frequency Tolerance (ppm)					Frequency Shift by Temperature (ppm max.)	Operating Temperature Range (°C)
			0	10	20	30	40	50	60	0	20	40	60	80	100		
XRCTD	MCR1210	Metal	32.0000 — 52.0000								● ±10					±10	-30 to 85
XRCFD	MCR1612	Metal	24.0000 — 29.9999								● ±10					±10	-20 to 70
XRCMD	MCR1612	Metal	30.0000 — 48.0000								● ±10					±10	-20 to 70
XRCGB-F-H	HCR2016	Resin	24.0000 — 25.0000								● ±10					±10	-20 to 70
			26.0000 — 32.0000								● ±10					±10	-30 to 85
XRCGB-F-P	HCR2016	Resin	16.0000 — 38.4000								● ±20					±20	-30 to 85
XRCGB-F-M	HCR2016	Resin	16.0000 — 32.0000								● ±30					±40	-30 to 85
			33.8688 — 50.0000								● ±45					±40	-30 to 85
XRCGB-F-L	HCR2016	Resin	16.0000 — 50.0000								±100 ●					±50	-30 to 85
XRCHA-F-L	HCR2520	Resin	16.0000 — 20.0000								±100 ●					±100	-30 to 85
XRCLH	TAS-5032F	Metal	10.0000 — 52.0000								● ±10					±15	-30 to 85
XRCLK	TSS-5032A	Seam	10.0000 — 52.0000								● ±10					±15	-30 to 85

Crystal Oscillators

We offer a varied lineup of Crystal Oscillators using highly reliable crystal units, circuit engineering, superior temperature compensation methods, and measurement furthered by our long experience and expertise.

For Consumer/Industrial



(in mm)

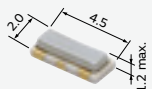
XTCLH_J

Series	Type	VC Function	Frequency (MHz)								Initial Frequency Tolerance (ppm)	Frequency Shift by Temperature (ppm max.)	Frequency Aging (ppm max./year)	Operating Temperature Range (°C)
			0	10	20	30	40	50	60	70				
XTCLH_J	TTS14VSH	●	10.0000	[Bar from 10 to 40]						40.0000	● ±0.5	±0.28	±0.5	-40 to 85

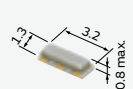
Ceramic Resonators CERALOCK®

Wide product lineup for automotive and consumer applications with SMD and leaded packages.

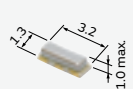
MHz Chip Type for Automotive (Tight Frequency Tolerance)



CSTNR_GH5C



CSTNE_GH5C

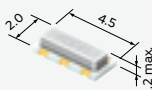


CSTNE_VH3C

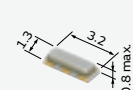
(in mm)

Series	Frequency (MHz)								Frequency Tolerance (%)	Frequency Shift by Temperature (% max.)	Operating Temperature Range (°C)
	0	10	20	30	40	50	60	70			
CSTNR_GH5C	4.00	[Bar from 4 to 7.99]						7.99	● ±0.07	±0.13	-40 to 125
CSTNE_GH5C	8.00	[Bar from 8 to 13.99]						13.99	● ±0.07	±0.13	-40 to 125
CSTNE_VH3C	14.00	[Bar from 14 to 20.00]						20.00	● ±0.07	±0.13	-40 to 125

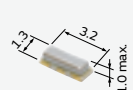
MHz Chip Type for Automotive (Standard Frequency Tolerance)



CSTCR_G_B



CSTNE_G_A

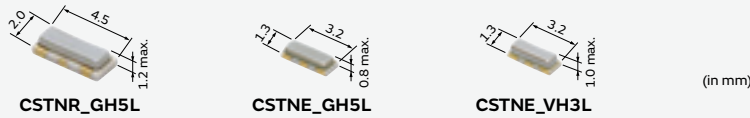


CSTNE_V_C

(in mm)

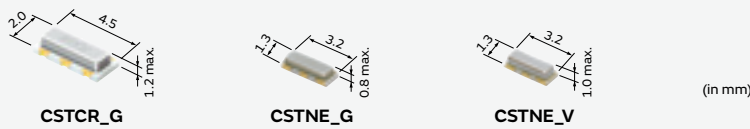
Series	Frequency (MHz)								Frequency Tolerance (%)	Frequency Shift by Temperature (% max.)	Operating Temperature Range (°C)
	0	10	20	30	40	50	60	70			
CSTCR_G_B	4.00	[Bar from 4 to 7.99]						7.99	● ±0.5	±0.15	-40 to 125
CSTNE_G_A	8.00	[Bar from 8 to 13.99]						13.99	● ±0.5	±0.20	-40 to 125
CSTNE_V_C	14.00	[Bar from 14 to 20.00]						20.00	● ±0.5	±0.15	-40 to 125

MHz Chip Type for Consumer Electronics (Tight Frequency Tolerance)



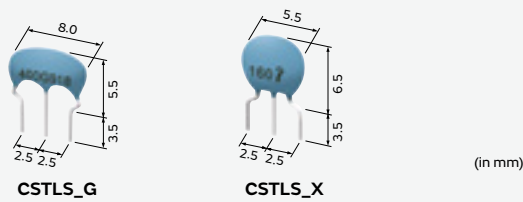
Series	Frequency (MHz)							Frequency Tolerance (%)		Frequency Shift by Temperature (% max.)	Operating Temperature Range (°C)	
	0	10	20	30	40	50	60	70	0			1
CSTNR_GH5L	4.00	7.99							±0.07		±0.11	-20 to 85
CSTNE_GH5L		8.00	13.99						±0.07		±0.11	-40 to 85
CSTNE_VH3L			14.00	20.00					±0.07		±0.11	-40 to 85

MHz Chip Type for Consumer Electronics (Standard Frequency Tolerance)



Series	Frequency (MHz)							Frequency Tolerance (%)		Frequency Shift by Temperature (% max.)	Operating Temperature Range (°C)	
	0	10	20	30	40	50	60	70	0			1
CSTCR_G	4.00	7.99							±0.5		±0.20	-20 to 80
CSTNE_G		8.00	13.99						±0.5		±0.20	-40 to 85
CSTNE_V			14.00	20.00					±0.5		±0.30	-40 to 85

MHz Lead Type for Consumer Electronics (Standard Frequency Tolerance)



Series	Frequency (MHz)							Frequency Tolerance (%)		Frequency Shift by Temperature (% max.)	Operating Temperature Range (°C)	
	0	10	20	30	40	50	60	70	0			1
CSTLS_G	3.40	10.00							±0.5		±0.20 (15pF) -0.40/+0.20 (47pF)	-20 to 80
CSTLS_X			16.00	70.00					±0.5		±0.20	-20 to 80

Filters

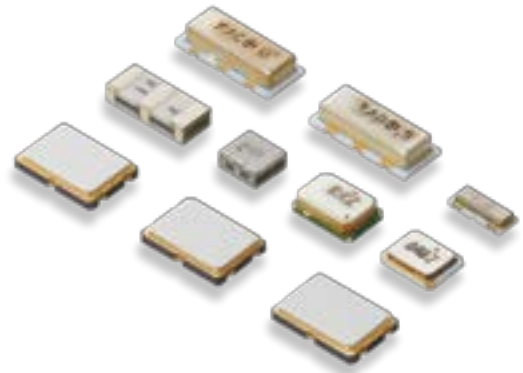
Broad lineup of Filters for video, audio, RF/Local, Duplexers, and Filters for IF

Summary

Using Murata's ceramic processing technology and unique materials, we offer miniaturized filters with excellent properties for advanced digital audio/visual systems and communication equipment.

Lineup

- Ceramic Filters CERAFIL® (Filters, Traps, and Discriminators)
- Crystal Filters ●SAW Filters for Mobile Communications
- Dielectric Filters GIGAFIL® ●Chip Multilayer LC Filters

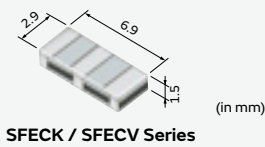


<https://www.murata.com/en-global/products/filter>

Ceramic Filters CERAFIL®

CERAFIL® 10.7MHz Chip Type

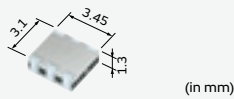
Small and lightweight filters for IF in communications or AV equipment using unique piezoelectric material.



SFECK / SFECV Series

Type	Series	3dB Bandwidth (kHz)		
		E	J	K
		330	150	110
High-reliability Type	SFECK10M7□	-	●	●
Standard Type	SFECV10M7□	-	●	●
Standard Type	SFECV15M0□	●	-	-

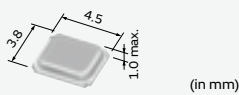
□ is filled with the letter designating the required 3dB bandwidth.



SFECF Series

Type	Series	3dB Bandwidth (kHz)				
		D	E	F	G	H
		350	330	280	230	180
Standard Type	SFECF10M7□	●	●	●	●	●

□ is filled with the letter designating the required 3dB bandwidth.



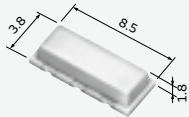
SFSCE Series

Type	Series	3dB Bandwidth (kHz) min.		
		03	04	05
		±500	±400	±325
Wide Bandwidth	SFSCE10M7WF□□	●	●	●

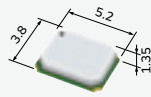
□ is filled with the letter designating the required 3dB bandwidth.

CERAFIL[®] 2.3 to 6.5MHz Chip Type

The SFSKA Series has distinctive features such as wide bandwidth and stable filter performance, enabling customers to design smaller products. The SFSKB Series is suitable for low frequency range.



SFSKA Series



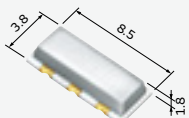
SFSKB Series

(in mm)

Series	Center Frequency (MHz)												3dB Bandwidth (kHz)
	2.3	2.8	3.2	3.8	4.3	4.5	4.8	5.2	5.5	5.7	6.0	6.5	
SFSKA	-	-	-	-	-	●	-	-	●	-	●	●	±60 min.
SFSKB	●	●	●	●	●	-	●	●	-	●	-	-	±75 min.

Ceramic Traps

The TPSKA Series has distinctive features such as high attenuation and high performance group delay time, enabling customers to design smaller products.



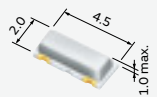
TPSKA Series

(in mm)

Series	Center Frequency (MHz)	Attenuation (dB)
TPSKA	4.500/5.500/6.000/6.500	35 min.

Ceramic Discriminators

In combination with ICs, this type obtains stable demodulation characteristics in a wide bandwidth.



CDSCB Series

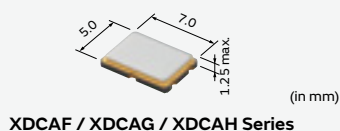
(in mm)

Series	Center Frequency
CDSCB	10.700MHz±30kHz

The recommended part number depends on IC specifications. Please contact us with the IC part number to be applied.

Crystal Filters

Our original wafer-thin technology has made it possible to make highly reliable filters in various applications such as radio communication worldwide.



Series	Type	Frequency Range (MHz)	Number of Poles
XDCAF	TM7050F	20 to 80	2
XDCAG	TM7050G	[Fundamental] 70 to 150	4
XDCAH	TM7050H	[3rd overtone]	4

*Please be sure to consult with our sales representative or engineer if you require other center frequency.

Filters

SAW Filters for Mobile Communications

SAW Duplexers

Low loss, high attenuation performance, small size, highly selective pass band, chip size package



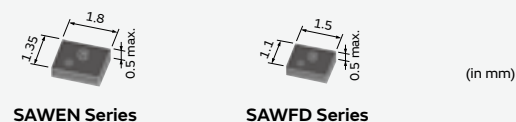
RF Filters

Low loss, high attenuation performance, small size, highly selective pass band, chip size package

Single Filter



Dual Filter



SAW Filters and SAW Duplexers may be used only in the following equipment:

Mobile phones, cordless telephones (except automobile telephone), smartphones, tablet PC, PC (including laptop/netPC), game machines, cameras (except for business use and for security), STB, electronic dictionaries, and digital audio instruments. Please contact us for other usages.

Dielectric Filters GIGAFIL[®]

This is a high frequency dielectric filter for Wi-Fi routers, accespoints, communication infrastructures of mobile phone base stations, for example.

It employs a unique plate construction which enables the filter to be compact and have a low profile.



TDF Series

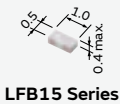
	Series	Frequency Range (MHz)							Number of Resonators	Input Power Range
		100	1000	2000	3000	4000	5000	6000		
RF/IF/Local Filter	TDF			2000				6000	2 to 5	1 to 10W*

*Power depends upon specifications.

Chip Multilayer LC Filters

Ultra-small and low-profile filters based on ceramic multilayer technology.

Band Pass Filters



LFB15 Series



LFB18 Series



LFB21 Series



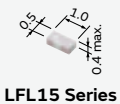
LFB2H Series



LFB31 Series

(in mm)

Low Pass Filters



LFL15 Series



LFL18 Series



LFL21 Series

(in mm)

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- Ceramic Filters (CERAFIL[®])/Crystal Filters
- Ceramic Filters (CERAFIL[®]) Application Manual

Cat. No. P51E

Cat. No. P11E

RF Components

Broad lineup of RF Components for RF/Local circuits in communications equipment

Summary

To enhance the technical advantages of communication equipment, Murata offers miniaturized, sophisticated components to meet the demands of many applications.

Lineup

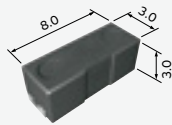
- Antennas ●Baluns (Chip Multilayer and Wire Wound/Film type) ●Couplers (Chip Multilayer and Film type)
- Chip Multilayer Hybrid Dividers ●Chip Multilayer Diplexers
- Microwave Coaxial Connectors ●Single Layer Microchip Capacitors ●Thin Film Circuit Substrate RUSUB®



Antennas

Antenna Coils

Rx 1D-ANT

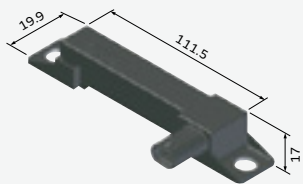


SA3M08 Series

(in mm)

Series	Inductance (mH)	Q (Reference)
SA3M08	1.0 to 18.0	25

Transmitter ANT

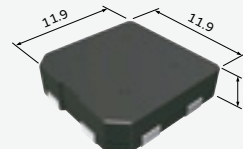


STA8121 Series

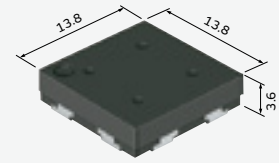
(in mm)

Series	Capacitance (pF)	Resonance Frequency
STA8121	2200 to 10000	125kHz, 134.2kHz

Rx 3D-ANT



SA3D12 Series



SA3D14 Series

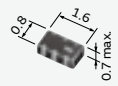
(in mm)

Series		Inductance (mH)	Q (Reference)
SA3D12	X	1.0 to 6.3	20
	Y	1.0 to 6.3	20
	Z	1.0 to 9.0	20
SA3D14	X	1.0 to 6.3	20
	Y	1.0 to 6.3	20
	Z	1.0 to 9.0	20

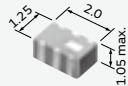
Baluns

SMD baluns constructed with a copper conductor and ceramic material. Ideal for high-frequency applications. Small-size and low-loss baluns can be customized for balance impedance of 50Ω to 200Ω.

Chip Multilayer Type



LDB18 Series



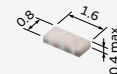
LDB21 Series



LDM0Q Series



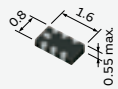
LDM15 Series



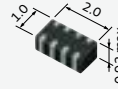
LDM18 Series

(in mm)

Film Type



DXP18B Series



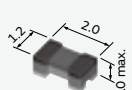
DXP2AB Series

(in mm)

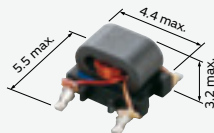
Wire Wound Type



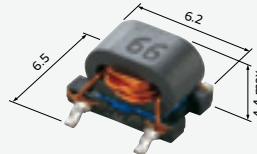
DXW21B Series



DXW21H Series



B4F Series



B5F Series



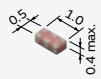
B5FL Series

(in mm)

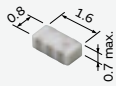
Couplers

An ultra-small, low-profile directional coupler based on ceramic multilayer technology. This coupler achieves ultra-small size, low insertion loss, and high isolation.

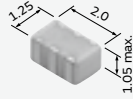
Chip Multilayer Type



LDC15 Series
LDJ15 Series



LDC18 Series
LDJ18 Series

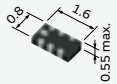


LDC21 Series
LDJ21 Series

(in mm)

*It is available with Integrated LPF for LDC21 Series.

Film Type

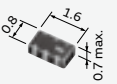


DXP18C Series

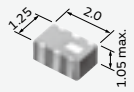
(in mm)

Chip Multilayer Hybrid Dividers

Power divider with a multilayer low pass filter in an ultra-compact package.



LDD18 Series

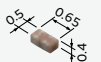


LDD21 Series

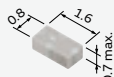
(in mm)

Chip Multilayer Diplexers

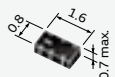
A diplexer branching low and high band. Suitable for band-switching for dual-band system.



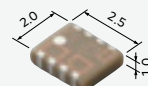
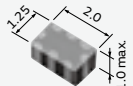
LFD15 Series



LFD18 Series



LFD21 Series



LFD2H Series

(in mm)

Microwave Coaxial Connectors

Microwave Coaxial Cable Connectors/Board to Board Connectors

Murata microwave coaxial connectors are small, thin, and suitable for low-profile design. The connectors have high RF performance.

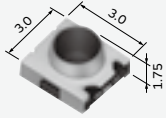


Type	Receptacle Part Number	Pulg Receptacle Part Number (Mating Height (mm))	Cable Number (Mating Height (mm))	Cable Dia. (mm)	Frequency Rating (GHz)	Voltage Standing Wave Ratio
JSC	MM5829-2700	MM5831-2700 (0.8 max.)	MXJA01_ (1.0 max.)	0.81	to 12	1.3 max. (DC to 3GHz)
			MXJGB3_ (1.0 max.)	0.49	to 6	1.4 max. (3GHz to 6GHz)
			MXJF56_ (1.0 max.)	0.53		1.5 max. (6GHz to 9GHz)
KSC	MM6829-2700	MM6831-2700 (0.6 max.)	MXKGB3_ (0.8 max.)	0.49	to 6	1.3 max. (DC to 3GHz)
			MXKF56_ (0.8 max.)	0.53		1.4 max. (3GHz to 6GHz)
LSC	MM7829-2700	MM7831-2700 (0.6 max.)	MXLAB3_ (0.8 max.)	0.49	to 6	1.3 max. (DC to 3GHz)
			MXLF56_ (0.8 max.)	0.53		1.4 max. (3GHz to 6GHz)

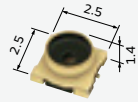
Nominal Impedance: 50Ω
 Rated Voltage: 30Vrms
 Temperature Range: -40 to 85°C
 Mating Height is mated with receptacle.

Microwave Coaxial Connectors with Switch

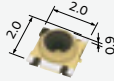
The coaxial connector with switch is very useful for characteristic measurement in cellular phones and microwave circuits.



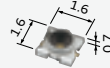
MM8430-2610



MM8130-2600



MM8030-2610



MM8930-2600



MM8830-2600

(in mm)

Type	Receptacle Part Number	Frequency Rating (GHz)	Voltage Standing Wave Ratio	Standard Measurement Probe Part Number
SWD	MM8430-2610	to 6	1.2 max. (DC to 3GHz) 1.3 max. (3GHz to 6GHz)	MM126320 MXHS83QE3000
SWF	MM8130-2600	to 6	1.2 max. (DC to 3GHz) 1.3 max. (3GHz to 6GHz)	
SWG	MM8030-2610	to 11	1.2 max. (DC to 3GHz) 1.3 max. (3GHz to 6GHz) 1.5 max. (6GHz to 11GHz)	MM126320 MXHQ87WJ3000
SWH	MM8930-2600	to 6	1.2 max. (DC to 3GHz) 1.3 max. (3GHz to 6GHz)	MM126515 MXHQ87PA3000
SWJ	MM8830-2600	to 6	1.2 max. (DC to 3GHz) 1.3 max. (3GHz to 6GHz)	MM126715 MXHQ87PK3000

Nominal Impedance: 50Ω
Rated Voltage: 30Vrms
Temperature Range: -40 to 85°C

RF Components

Multi Line Connectors

Multi line connectors transmit signals from board to board. The connectors can transmit not only digital signals but also RF signals.



MM3529-2700A06



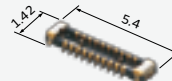
MM3531-2700A06



MM3529-2700A14



MM3531-2700A14



MM3529-2700A20



MM3531-2700A20

(in mm)

Type	Receptacle Part Number	Plug Receptacle Part Number (Mating Height (mm))	Pitch (mm)	Frequency Rating (GHz)	Voltage Standing Wave Ratio
MLF06	MM3529-2700A06	MM3531-2700A06 (0.69 max.)	0.35	to 6	1.3 max. (DC to 3GHz) 1.4 max. (3GHz to 6GHz)
MLF14	MM3529-2700A14	MM3531-2700A14 (0.69 max.)	0.35	to 6	1.3 max. (DC to 3GHz) 1.4 max. (3GHz to 6GHz)
MLF20	MM3529-2700A20	MM3531-2700A20 (0.69 max.)	0.35	to 6	1.3 max. (DC to 3GHz) 1.4 max. (3GHz to 6GHz)

Nominal Impedance: 50Ω
Rated Voltage: 30Vrms
Temperature Range: -40 to 85°C

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



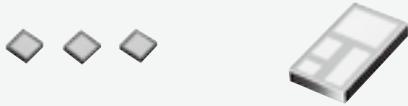
• Microwave Coaxial Connectors

Cat. No. O30E

Single Layer Microchip Capacitors

Very reliable performance and excellent frequency characteristics

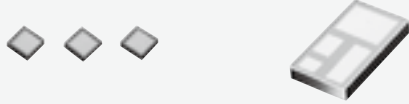
Temperature Compensation Type



Capacitance Change (Temperature Range)	Series	Size (mm)	Rated Voltage (Vdc)	Capacitance Range at 25°C (pF)					Operating Temperature Range (°C)
				0.1	1	10	100	1000	
0±30ppm/°C (-25 to 85°C)	CLB0A	0.25X0.25	100	0.1					-55 to 125
	CLB0C	0.35X0.25	100	0.2					-55 to 125
	CLB0D	0.38X0.38	100	0.2	0.4				-55 to 125
	CLB05	0.5X0.5	100	0.3	0.6				-55 to 125
	CLB0E	0.55X0.38	100	0.5	0.6				-55 to 125
	CLB0F	0.64X0.64	100	0.3	1.0				-55 to 125
	CLB0G	0.7X0.5	100	0.7	1.0				-55 to 125
	CLB0H	0.71X0.38	100	0.7	0.8				-55 to 125
	CLB0J	0.76X0.76	100	0.4	1.3				-55 to 125
	CLB09	0.9X0.9	100	0.5	1.8				-55 to 125
	CLB1A	1.00X0.64	100	1.1	1.6				-55 to 125
	CLB1B	1.09X0.76	100	1.5	2.0				-55 to 125
	CLB1C	1.27X1.27	100	1.0	3.6				-55 to 125
	CLB1E	1.49X0.9	100	2.0	2.7				-55 to 125
	CLB1G	1.73X1.27	100	3.9	4.7				-55 to 125
	CLB1H	1.78X1.78	100	1.8	6.8				-55 to 125
	CLB2C	2.19X1.27	100	5.1					-55 to 125
	CLB2E	2.29X2.29	100	3.0	10				-55 to 125
	CLB2L	2.95X1.78	100	7.5	10				-55 to 125
	CLB3G	3.71X2.29	100	11	16				-55 to 125
-750±60ppm/°C (-25 to 85°C)	CLB0A	0.25X0.25	100	0.3	0.7				-55 to 125
	CLB0B	0.30X0.25	100	0.8					-55 to 125
	CLB0C	0.35X0.25	100	0.9					-55 to 125
	CLB0D	0.38X0.38	100	0.9	1.6				-55 to 125
	CLB05	0.5X0.5	100	1.0	2.4				-55 to 125
	CLB0E	0.55X0.38	100	1.8	2.4				-55 to 125
	CLB0F	0.64X0.64	100	2.0	4.3				-55 to 125
	CLB0G	0.7X0.5	100	2.7	3.0				-55 to 125
	CLB0H	0.71X0.38	100	2.7					-55 to 125
	CLB0J	0.76X0.76	100	3.0	6.2				-55 to 125
	CLB09	0.9X0.9	100	3.3	6.8				-55 to 125
	CLB1A	1.00X0.64	100	4.7	6.2				-55 to 125
	CLB1B	1.09X0.76	100	6.8	7.5				-55 to 125
	CLB1C	1.27X1.27	100	7.5	15				-55 to 125
	CLB1E	1.49X0.9	100	7.5	9.1				-55 to 125
	CLB1H	1.78X1.78	100	13	15				-55 to 125
CLB2E	2.29X2.29	100	20					-55 to 125	

All Single Layer Microchip Capacitors are produced after receiving an order.

High Dielectric Constant Type



RF Components

Capacitance Change (Temperature Range)	Series	Size (mm)	Rated Voltage (Vdc)	Capacitance Range at 25°C (pF)					Operating Temperature Range (°C)
				0.1	1	10	100	1000	
±10% (-25 to 85°C)	CLBOA	0.25X0.25	100			5.6 12			-55 to 125
	CLBOB	0.30X0.25	100			13 15			-55 to 125
	CLBOC	0.35X0.25	100			16 18			-55 to 125
	CLBOD	0.38X0.38	100			18 30			-55 to 125
	CLB05	0.5X0.5	100			22 43			-55 to 125
	CLBOE	0.55X0.38	100			33 43			-55 to 125
	CLBOF	0.64X0.64	100			43 75			-55 to 125
	CLBOG	0.7X0.5	100			47 68			-55 to 125
	CLBOH	0.71X0.38	100			47 56			-55 to 125
	CLBOJ	0.76X0.76	100			68 110			-55 to 125
	CLBO9	0.9X0.9	100			68 130			-55 to 125
	CLB1A	1.00X0.64	100			82 120			-55 to 125
	CLB1C	1.27X1.27	100			160 200			-55 to 125
	CLB1E	1.49X0.9	100			150 160			-55 to 125
	CLB1G	1.73X1.27	100			300			-55 to 125
	CLB1H	1.78X1.78	100			300 430			-55 to 125
CLB2E	2.29X2.29	100			470 620			-55 to 125	
+30, -80% (-25 to 85°C)	CLBOA	0.25X0.25	100			27 33			-55 to 125
	CLBOB	0.30X0.25	100			36 39			-55 to 125
	CLBOC	0.35X0.25	100			43 51			-55 to 125
	CLBOD	0.38X0.38	100			62 82			-55 to 125
	CLB05	0.5X0.5	100			75 130			-55 to 125
	CLBOE	0.55X0.38	100			91 120			-55 to 125
	CLBOF	0.64X0.64	100			130 220			-55 to 125
	CLBOG	0.7X0.5	100			150 200			-55 to 125
	CLBOH	0.71X0.38	100			130 150			-55 to 125
	CLBOJ	0.76X0.76	100			200 300			-55 to 125
	CLBO9	0.9X0.9	100			200 390			-55 to 125
	CLB1A	1.00X0.64	100			240 360			-55 to 125
+30, -90% (-25 to 85°C)	CLBOA	0.25X0.25	100			36 56			-55 to 125
	CLBOD	0.38X0.38	100			91 150			-55 to 125
	CLB05	0.5X0.5	100			130 220			-55 to 125
	CLBOF	0.64X0.64	100			220 390			-55 to 125
	CLBOJ	0.76X0.76	100			330 560			-55 to 125
	CLBO9	0.9X0.9	100			390 680			-55 to 125

All Single Layer Microchip Capacitors are produced after receiving an order.

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



• High Frequency Single Layer Microchip Capacitors

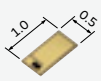
Cat. No. C01E

Thin Film Circuit Substrate RUSUB®

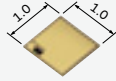
Suitable for photo diode modules.

■ Features

- RUSUB® technology provides a single-layer capacitor and thin film resistor formed in one chip. It reduces not only the number of parts to build a device, but also the assembly costs. It will also contribute to making a device smaller.
- The single-layer structure makes its self-resonant frequency higher. It allows stable operation even at a high frequency range.
- The short distance between the capacitor and thin film resistor makes the residue inductance smaller and contributes to attenuating unnecessary noise so the device can work at its best characteristics.
- Since it has a gold electrode, it is feasible to be installed inside a module, and it allows wire-bonding with gold wire.
- AuSn pre-coating finish is also available.
- It is very suitable for APD (Avalanche Photo Diode), because the capacitor has a withstanding voltage of 100V.



RUCYT101 Series



RUCYT201 Series

(in mm)

- Six types of standard samples of RUSUB® C+R (Capacitor + Resistor) are available.
- Custom substrate size, capacity, resistance value, and electrode pattern shape is available upon request.

Part Number	Size (mm) (LXWXT)	Capacitance (pF)	Resistance (Ω)	Temperature Characteristics of Capacitance at -25 to 85°C	Capacitor Rated Voltage (V)	Temperature Coefficient of Resistance (ppm/°C)	Resistor Rated Power (mW/mm ²)
RUCYT101K00009GNTC	1.0X0.5X0.11	100±10%	50±20%	±10%	100	-70±50	100
RUCYT101K00011GNTC	1.0X0.5X0.11	100±10%	100±20%				
RUCYT101K00012GNTC	1.0X0.5X0.11	100±10%	200±20%				
RUCYT201K00010GNTC	1.0X1.0X0.12	200±10%	50±20%				
RUCYT201K00013GNTC	1.0X1.0X0.12	200±10%	100±20%				
RUCYT201K00014GNTC	1.0X1.0X0.12	200±10%	200±20%				

■ Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



▪ Thin Film Circuit Substrate (RUSUB®)

Cat. No.M04E

Sensors

Summary

Murata pursued sensing functions making full use of MEMS and processing technology, and magnetoresistive elements including ceramic material technology in order to develop highly efficient and highly reliable devices, modules, and systems.

A lineup of various sensors respond to the sensing needs of various applications for automobile, wearable, medical care, and health care.

Lineup

- Infrared Sensors
- Ultrasonic Sensors
- AMR Sensors (Magnetic Sensors)
- Shock Sensors
- Accelerometers
- Inclinometers
- Gyro Sensors
- Rotary Position Sensors
- Temperature Sensors (Thermistors)



<https://www.murata.com/en-global/products/sensor>

Sensor Guide (Select by Method/Principle)



Temperature

Thermistors: The resistance changes with the temperature.

NC_Series

PR_Series

NX Series

PTF Series



Infrared

Pyroelectric infrared sensors: The sensor reacts to the infrared radiation emitted from the human body to output an electric charge.



IRA Series

For more details on Thermistors, please refer to p. 84.

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- MEMS Sensors & Sensing Elements
- NTC Thermistors
- POSISTOR® for Circuit Protection
- NTC/PTC Thermistors for Automotive

- Cat. No. S47E
- Cat. No. R44E
- Cat. No. R90E
- Cat. No. R03E



Distance

Ultrasonic sensors: The sensor sends and receives ultrasonic waves in order to detect distances from the state of the reflected wave.



MA300D1-1
(for Dual Use)



MA40S4R (for Receiver)
MA40S4S (for Transmitter)



MA58MF14-7N
(for Dual Use)



Magnetic/ Open and Shut

Magnetic switches: This switch switches built-in ICs when the magneto-resistive element detects the magnetic proximity.



MR Series



Inertial force

Shock sensors: This sensor generates an electric charge according to the acceleration (stress) applied to the piezoelectric element.



PKG Series

Accelerometers: This sensor detects the acceleration from the change of the capacitance that occurs in the 3DMEMS element.



SCA Series

Inclinometers: This sensor detects the gravitational acceleration of the Earth to calculate the angle of gradient.



SCA Series

Gyro sensors: This sensor detects the angular velocity from the change in the capacitance that occurs in the 3DMEMS element.



SCC Series
SCR Series





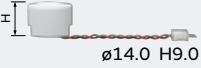











Angle

Rotary position sensors: The resistance changes in proportion to the angle.



SV04 Series

Lineup

Detection	Murata's Sensors			Applications												
	Products	Series or Main Part Number	Dimensions (mm)	AV Equipment					Communications Devices							
				TV	Audio	DVD, CD	Digital Video Camera	Digital Camera	PC	Scanner	Multifunction Machine	Printer	FAX	Electronic Bulletin Board		
Infrared	Pyroelectric Infrared Sensors	IRA Series	 ø9.2 H4.7	●	●	●			●	●	●	●	●	●		
Ultrasonic	Open Structure Type Ultrasonic Sensors	MA40S4R (for Receiver) MA40S4S (for Transmitter)	 ø9.9 H7.1												●	
	Drip-proof Type Ultrasonic Sensors	MA58MF14-7N (for Dual Use)	 ø14.0 H9.0													
	High Frequency Type Ultrasonic Sensors	MA300D1-1 (for Dual Use)	 ø9.9 H7.3						●	●	●					
Magnetic	AMR Sensors (Magnetic Sensors)	MR Series	 MRMS201A: 2.8X2.9X1.1 MRMS501A: 1.45X1.45X0.55			●	●	●	●							
Acceleration	Shock Sensors	PKGS Series	 3.2X2.0X1.05						●							
	Accelerometers	SCA Series	 7.6X8.6X3.3													
	Inclinometers	SCA Series	 7.6X8.6X3.3								●					
Angle Velocity	Gyro Sensors	SCC Series SCR Series	 12.1X15.0X4.35													
Angle	Rotary Position Sensors	SV04 Series	 11X12X2.1	●				●			●	●				
Temperature	NTC Thermistors	Chip Type NC_ Series	 NCP02: 0.4X0.2X0.2 NCP03: 0.6X0.3X0.3 NC_15: 1.0X0.5X0.5 NC_18: 1.6X0.8X0.8	●	●	●	●	●	●	●	●	●	●	●	●	
		Lead Type NX Series	 NXF: ø1.2 L25 to 150 NXR: ø4.0 L10 to 40	●	●	●	●	●	●	●	●	●	●	●	●	●
	PTC Thermistors POSISTOR®	Chip Type PR_ Series	 PRF15: 1.0X0.5X0.5 PRF18: 1.6X0.8X0.8 PRF21: 2.0X1.25X0.9	●	●	●	●	●	●	●	●	●	●	●	●	●
		Lead Type PTF Series	 ø5.0 max. T4.0 max. ø7.5 T3.0	●	●				●	●	●	●	●	●	●	●

Applications																				Wearable									
Home Electronics										Security			Car Electronics			Toy		Others											
Refrigerator	Electric Rice-cooker	Air Conditioner	Air Purification System	Humidifier	Cleaner	Laundry Machine	Food Fan	Water Heater	Toilet Seats with a Warm-water Shower Feature	Lighting	Security Camera	Security Light	Indoor Security Sensor	Intrusion Detection Sensor	Navigation System	Climate Control	Parking Assist	Radio Control (Attitude Control)	Game Controller		Machine Tool	ATM, CD	Vending Machine	Amusement Machine	Construction Machinery	Farm Machinery	Railroad Equipment		
																												Murata's Sensors	
																													Products
																													Pyroelectric Infrared Sensors
																													Open Structure Type Ultrasonic Sensors
																													Drip-proof Type Ultrasonic Sensors
																													High Frequency Type Ultrasonic Sensors
																													AMR Sensors (Magnetic Sensors)
																													Shock Sensors
																													Accelerometers
																													Inclinometers
																													Gyro Sensors
																													Rotary Position Sensors
																													NTC Thermistors
																													PTC Thermistors
																													POSISTOR®

Thermistors

Facilitate your designs and products utilizing our thermal design and thermistor products.

Summary

Murata's semi-conductive ceramics and electrode printing technologies, such as PTC and NTC Thermistors, provide vital protection and sensing within electronic equipment. Simulation software tools are also available for your convenience.

Lineup

- NTC Thermistors for temperature sensor/compensation, and automotive
- PTC Thermistors POSISTOR® for overheat sensing, overcurrent protection, inrush current suppression, and automotive



<https://www.murata.com/en-global/products/thermistor>

NTC Thermistors for Temperature Sensor/ Temperature Compensation

Chip Type

Chip NTC Thermistors have Ni barrier terminations, provide excellent solderability, and offer high stability in harsh environments due to their unique inner construction.



Series	Size Code inch (mm)	Resistance (25°C) (Ω)	B-Constant (25-50°C) (K)	Maximum Operating Current for Sensor (25°C) (mA)	Maximum Voltage (V)	Typical Dissipation Constant (25°C) (mW/°C)	Operating Temperature Range (°C)
NCP02	01005 (0402)	10k/100k	3380/4250	0.141/0.045	5	1	-40 to 125
NCP03	0201 (0603)	1.0k to 220k	3500 to 4485	0.021 to 0.316	5	1	-40 to 125
NCP15	0402 (1005)	220 to 470k	3500 to 4500	0.015 to 0.674	5	1	-40 to 125
NCU15	0402 (1005)	10k to 100k	3380 to 4250	0.032 to 0.100	5	1	-40 to 125
NCP18	0603 (1608)	220 to 470k	3500 to 4500	0.015 to 0.674	5	1	-40 to 125
NCU18	0605 (1608)	10k to 470k	3380 to 4500	0.032 to 0.100	5	1	-40 to 125

Maximum Operating Current for Sensor raises the Thermistor's temperature by 0.1°C.
There are also items for automotive applications in the NCP/NCU Series.

Detailed Catalogs

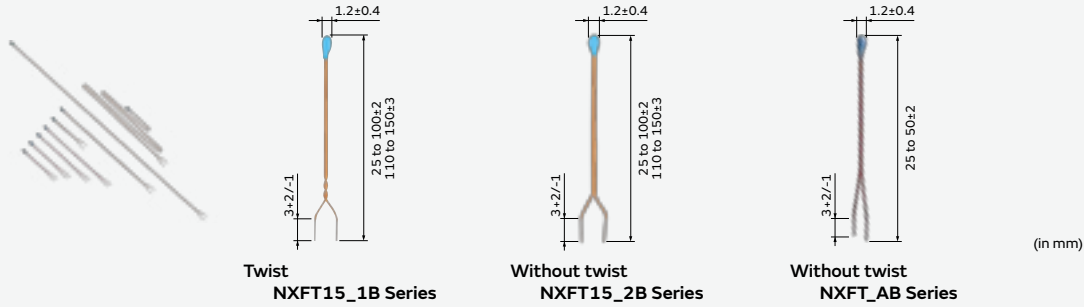
For more details, please refer to our printed catalogs and the PDF catalogs on our website.



- NTC Thermistors Cat. No. R44E
- POSISTOR® for Circuit Protection Cat. No. R90E
- NTC/PTC Thermistors for Automotive Cat. No. R03E

Thermo String Type

Small flexible lead type NTC Thermistors with a small head and a thin lead wire.

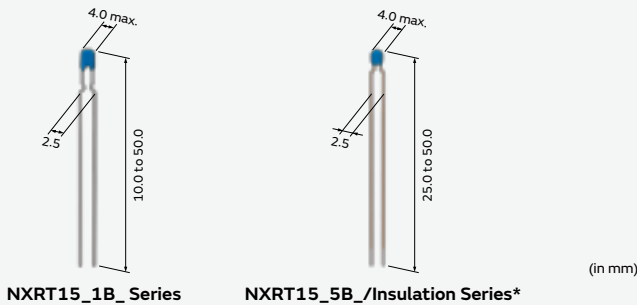


Series	Resistance (25°C) (Ω)	B-Constant (25-50°C) (K)	Maximum Operating Current for Sensor (25°C) (mA)	Thermal Time Constant (25°C) (s)	Full Length (mm)	Operating Temperature Range (°C)
NXFT15_1/2B_ (Cooper wire Type)	3k to 100k	3380 to 4250	0.04 to 0.22	4	25 to 150	-40 to 125
NXFT15_AB_ (Nickel Cooper wire type)	3k to 100k	3380 to 4250	0.024 to 0.14	3	25 to 50	-40 to 125

Maximum Operating Current for Sensor raises the Thermistor's temperature by 0.1°C.
There are also items for automotive applications in the NXF Series.

Lead Type

This product is a thermistor for normal temperature level sensors having self-subsistence due to strong lead strength based on chip NTC.



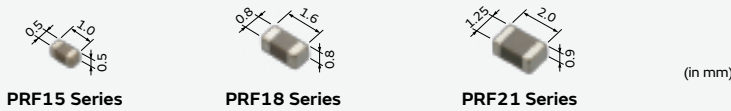
Series	Resistance (25°C) (Ω)	B-Constant (25-50°C) (K)	Maximum Operating Current for Sensor (25°C) (mA)	Thermal Time Constant (25°C) (s)	Full Length (mm)	Operating Temperature Range (°C)
NXRT15_1B_	2k to 100k	3380 to 4250	0.04 to 0.27	4	10 to 50	-40 to 125
NXRT15_5B_ (Insulation*)	2k to 100k	3380 to 4250	0.05 to 0.36	4	25 to 50	-40 to 125

Maximum Operating Current for Sensor raises the Thermistor's temperature by 0.1°C.
There are also items for automotive applications in the NXR Series.
*Insulation: Lead wire insulation type.

PTC Thermistors POSISTOR® for Overheat Sensing

Chip Type

For overheat sensing for power transistors, power diodes, and power ICs in hybrid circuits.

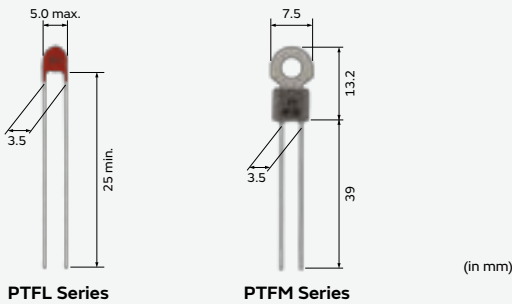


Series	Sensing Temperature Range (°C)										Sensing Temperature Tolerance (°C)	Maximum Voltage (V)	Size Code inch (mm)
	60	70	80	90	100	110	120	130	140	150			
PRF15	●	●	●	●	●	●	●	●	●	●	±3/±5	32	0402 (1005)
PRF18	●	●	●	●	●	●	●	●	●	●	±3/±5	32	0603 (1608)
PRF21			●	●	●	●	●	●	●	●	±5	32	0805 (2012)

There are also items for automotive applications in the PRF Series.

Lead Type

For protecting power transistors, stereo main amplifiers, etc., from overheating, and also for sensing the temperature of other components that may be overheated.

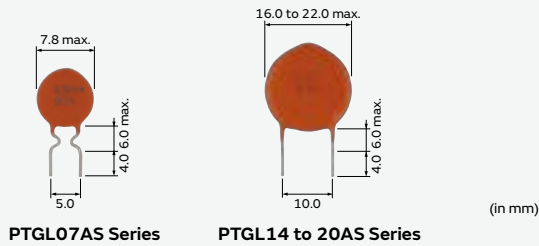


Series	Sensing Temperature Range (TS) (°C)										Maximum Voltage (V)	Resistance (25°C) (max.) (Ω)	Resistance (TS-10°C) (max.) (Ω)	Resistance (TS°C) (min.) (Ω)
	60	70	80	90	100	110	120	130	140	150				
PTF□_471Q	●	●	●	●	●	●	●	●	●	●	16	100	330	470
PTF□_222Q	●	●	●	●	●	●	●	●	●	●	16	330	1.5k	2.2k

The blank is filled with type codes. (L: Lead type, M: with lug-terminal)
Operating Temperature Range is -10 to TS+10°C.

PTC Thermistors POSISTOR[®] for Inrush Current Suppression

This series is able to support overcurrent or inrush current issues on the power supply circuit.



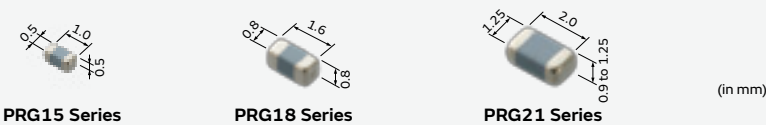
Series	Resistance (25°C) (Ω)	Maximum Voltage (V)	Maximum Inrush Current (A _{o-p})	Maximum Charge Energy (J)	Operating Temperature Range (°C)
PTGL07AS	120 to 200	280	5.66 to 8.46	7.8 (105°C)	-40 to 105
PTGL14 to 20AS	33 to 100	280	13 to 39	56.9 to 181.7 (60 to 85°C)	-20 to 85

Maximum Inrush Current shows the maximum inrush current value introduced into the Posistor at operating temperature range.

PTC Thermistors POSISTOR[®] for Overcurrent Protection

Chip Type

Overcurrent Protection device with resettable function suitable for current-limiting resistors.

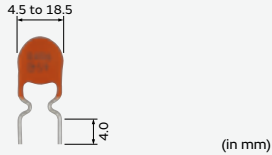


Series	Maximum Voltage (V)	Hold Current (60°C) (mA)	Trip Current (-10°C) (mA)	Maximum Current (A)	Resistance (25°C) (Ω)	Size Code inch (mm)
PRG15	6 to 30	17 to 88	65 to 318	0.6 to 3.5	2.2 to 68	0402 (1005)
PRG18	6 to 30	7 to 220	25 to 850	0.06 to 7.5	1.0 to 470	0603 (1608)
PRG21	6 to 32	30 to 500	110 to 2000	0.59 to 37	0.2 to 42	0805 (2012)

Maximum Current shows typical transformer capacities that can be used. There are also items for automotive applications in the PRG Series.

Lead Type

Best suited to meet the requirements of power supplies and motor protection. Error-free operation is ensured by rush current.



PTGL Series

*The Lead shape is an example.

Series	Maximum Voltage (V)	Hold Current (60°C) (mA)	Trip Current (-10°C) (mA)	Maximum Current (A)	Resistance (25°C) (Ω)
PTGL	16	370 to 1200	1040 to 3360	2.0 to 10.0	0.15 to 1.0
	24	120 to 140	500 to 580	2.0	3.3 to 4.7
	30	122 to 685	240 to 1900	1.5 to 7.0	0.8 to 10
	32	40 to 60	170 to 240	1.5	15 to 33
	51	168 to 592	332 to 1168	1.0 to 5.0	1.2 to 10
	56	90 to 380	240 to 980	1.0 to 2.5	3.3 to 22
	60	88 to 439	175 to 867	1.0 to 5.0	2.2 to 22
	80	50 to 190	135 to 530	0.7 to 3.0	9.4 to 55
	125	30 to 220	75 to 550	0.3 to 1.2	10 to 180
	140	74 to 310	147 to 670	0.5 to 3.5	4.7 to 56
	250	90 to 100	280 to 300	0.5 to 0.6	12 to 39
	265	28 to 300	70 to 830	0.2 to 4.1	6.0 to 180

Maximum Current shows typical transformer capacities that can be used. There are also items for automotive applications in the PTGL Series.

Power Devices

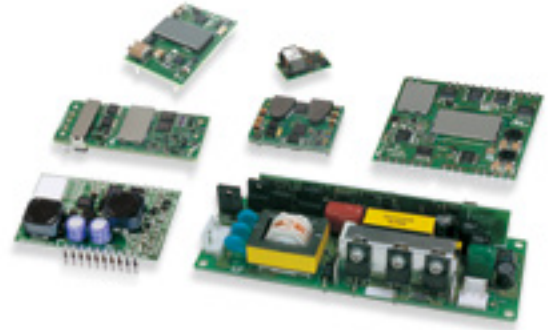
Eco-friendly and high-quality power devices

Summary

To meet consumer needs Murata offers power supply products and energy devices that can be used with a variety of equipment, such as video equipment, household information appliances, and communication/transfer equipment. Murata provides standard and customized products using highly reliable. Murata makes components utilizing advanced design and high-density packaging technology.

Lineup

- DC-DC Converters
- High Voltage Power Supplies
- Switching Power Supplies



<https://www.murata.com/en-global/products/power>

DC-DC Converters

DC-DC converters are vital to the demands of electronic equipment.

Murata offers DC-DC converters that set the standard for miniaturization, low-profile, high-efficiency, power-saving and low-noise power supplies. Murata also provides standard products and customized products, ultra-low-profile products, and products for FPGAs.

Non-isolated Type



Part Number	Package	Input Voltage (V)	Nominal Output Power (W)	Output Voltage (V)	Current (A)	Efficiency (%)	Size (mm) LXWXH
MYMGK00504ERSR	SMD	8 to 14	20	0.7 to 5.0	4	96	9.0X7.5X5.0
MYMGK1R804ERSR	SMD	4.5 to 5.5	7.2	0.7 to 1.8	4	93	9.0X7.5X5.0
MYMGK00506ERSR	SMD	8 to 14	30	0.7 to 5.0	6	95.4	9.0X7.5X5.0
MYMGK1R806FRSR	SMD	4.5 to 5.5	10.8	0.7 to 1.8	6	90.4	9.0X7.5X5.0
MYMGK1R820ERSR	SMD	8 to 14	36	0.7 to 1.8	20	87.8	10.5X9.0X5.6
MYMGK1R820FRSR	SMD	4.5 to 5.5	36	0.7 to 1.8	20	89.2	10.5X9.0X5.6
MYSGK1R830FRSR	SMD	4.5 to 14	54	0.7 to 1.8	30	88.3	14.0X11.0X8.3

These are just a few examples of our large assortment of power products.

Continued on the following page. ↗

DC-DC Converters

Part Number	Package	Input Voltage (V)	Nominal Output Power (W)	Output Voltage (V)	Current (A)	Efficiency (%)	Size (mm) LXWXH
MYLSM00502ERPL	SMD	4.5 to 17	13.125	1 to 5.25	2.5	88.0	7.9X7.9X2.3
MYSGK02506BRSR	SMD	13.5 to 42	150	5 to 25	6	98.0	14.7X16.3X7.5
MYSSM02406BEPL	SMD	30.5 to 40	144	12 to 24	6	97.6	30.2X20.9X8.3
MYUSP3R303FMP	SMD	3 to 5.5	9.9	0.7 to 3.3	3	94	11X8.5X5.6
OKL2-T/12-W12N2-C	SMD	4.5 to 14	60	0.69 to 5.5	12	95	20.32X11.43X8.55
OKL2-T/12-W5N-C	SMD	2.4 to 5.5	39.6	0.6 to 3.63	12	94	20.32X11.43X8.55
OKL2-T/20-W12N2-C	SMD	4.5 to 14	100	0.69 to 5.5	20	94	33.02X13.46X8.75
OKL2-T/20-W12P2-C	SMD	4.5 to 14	100	0.69 to 5.5	20	94	33.02X13.46X8.75
OKL2-T/20-W5N-C	SMD	2.4 to 5.5	66	0.6 to 3.63	20	93.1	33.02X13.46X8.75
OKL2-T/20-W5P-C	SMD	2.4 to 5.5	66	0.6 to 3.63	20	93.1	33.02X13.46X8.75
OKL-T/3-W5N-C	SMD	2.7 to 5.5	10.9	0.6 to 3.63	3	95.3	12.2X12.2X6.2
OKL-T/6-W12P-C	SMD	4.5 to 14	33	0.591 to 5.5	6	93	12.2X12.2X7.2

These are just a few examples of our large assortment of power products.

Isolated DC-DC Converter for PoE + PD



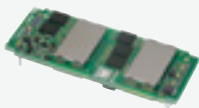
MYBSP0055AABF
MYBSP0122BABF



MYBSP01201ABF

Part Number	Package	Input Voltage (V)	Nominal Output Power (W)	Output Voltage (V)	Current (A)	Efficiency (%)	Isolation Voltage (VDC)	Size (mm) LXWXH
MYBSP0055AABF	SMD	48V (42.5V to 57V)	25.5	5.0±3%	5.1	90.5	2250	35.5X22.4X10.55
MYBSP0122BABF	SMD	48V (42.5V to 57V)	25.5	12.0±3%	2.125	92.5	2250	35.5X22.4X10.55
MYBSP01201ABF	SMD	48V (37V to 57V)	12	12.0±5%	1	84	2250	26X14.8X6.2

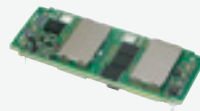
Isolated Type



MYBEA01212AZT



MYBEA01212AZTB



MYBEA01210CZT



MYBEA01210CZTB



MYBEB01212AZTB



MYBSC00520ABT
MYBSC0128CABT



MYBTA00512ABT



MPD5D017S
MPD5D018S

Part Number	Package	Input Voltage (V)	Nominal Output Power (W)	Output Voltage (V)	Current (A)	Efficiency (%)	Isolation Voltage (VDC)	Footprint (Brick)	Size (mm) LXWXH
MYBEA01212AZT	Insert	48V (36V to 75V)	140	12±3%	12	92.5	1500	1/8	58.4X22.8X8.46

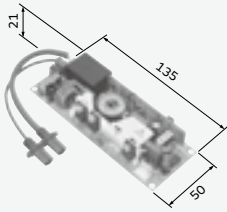
These are just a few examples of our large assortment of power products.

Continued on the following page. ↗

Part Number	Package	Input Voltage (V)	Nominal Output Power (W)	Output Voltage (V)	Current (A)	Efficiency (%)	Isolation Voltage (VDC)	Footprint (Brick)	Size (mm) LXWXH
MYBEA01212AZTB	Insert	48V (36V to 75V)	140	12±3%	12	92.5	1500	1/8	58.4X22.8X11.3
MYBEA01210CZT	Insert	24V (18V to 36V)	120	12±3%	10	93	1500	1/8	58.4X22.8X8.46
MYBEA01210CZTB	Insert	24V (18V to 36V)	120	12±3%	10	93	1500	1/8	58.4X22.8X11.3
MYBEB01212AZTB	Insert	48V (36V to 75V)	100	12±3%	8.3	91.5	2250	1/8	58X22.8X12.2
MYBSC00520ABT	SMD	48V (36V to 75V)	100	5±3%	20	92	2250	1/16	33X23.2X10.35
MYBSC0128CABT	SMD	48V (36V to 75V)	100	12±3%	8.3	92.5	2250	1/16	33X23.2X10.35
MYBTA00512ABT	SMD	48V (36V to 75V)	60	5±3%	12	92	2250	1/32	23.36X19.05X12.7
MPD5D017S	SMD	48V (36V to 60V)	4.95	3.3 -3/+5%	1.5	84	1500	-	26.8X14.6X4.7
MPD5D018S	SMD	48V (36V to 60V)	5	5 -3/+5%	1	85	1500	-	26.8X14.6X4.7

These are just a few examples of our large assortment of power products.

High Voltage Power Supplies



MPL3000 Series
(AC/DC Ballast)

(in mm)

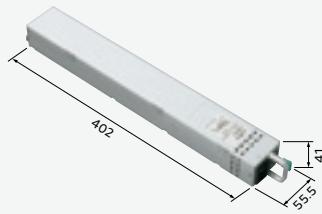
Series	Applications	Input Voltage Vin	Output Power	Other Specification
MPL3000 (AC/DC Ballast)	Projector	250 to 420V DC	to 350W	For extra-high pressure mercury lamp

For more details on our products, please contact us.

Switching Power Supplies



LED Lighting



HVDC

(in mm)

Applications	Input Voltage	Output Voltage	Safety Standard	EMI Standard	Remarks
LED Lighting	90 to 264V AC	8 to 25V 30 to 50V	PSE	VCCI, CISPR	PWM Dimming, Accepted for DALI, UART
HVDC	200 to 400V DC	12.12V	-	VCCI	PMBus

For more details on our products, please contact us.

For Ionizer Modules, please refer to p. 105.

Batteries

Battery solutions for energy storage systems and various small devices

Summary

Murata offers battery solutions for a wide range of applications from IoT & wearable devices to energy storage systems for enterprise and household use.

Lineup

- Li-ion Energy Storage System
- Micro Batteries



Li-ion Energy Storage System

Possible to customize voltage and capacity in order to meet wide usage

2.1kWh Energy Storage Module



(in mm)

(Excluding terminal)
IJ1101M
27kg

Model Name	Nominal Capacity	Rated Capacity	Nominal Voltage	Maximum Discharge Current	Charge Voltage	Maximum Charge Current	Safety Standard
IJ1101M	2.1kWh (42.0Ah)	2.0kWh (39.5Ah)	51.2V	50A	56.0V	40A	EU RE Directive UL 1973 FCC Part15 Class B

Storage Temperature: -20 to 45°C (Recommended room temperature)

Operating Ambient Temperature: Discharge: -20 to 40°C (Discharge current \leq 50.0A)

40 to 50°C (Discharge current \leq 40.0A)

Charge: 10 to 45°C (Charge current \leq 40.0A)

0 to 10°C (Charge current \leq 12.0A)

High Rate Module



(Excluding terminal)
IJ1201M
18kg

(in mm)

*use for Japan market

Model Name	Nominal Capacity	Rated Capacity	Nominal Voltage	Maximum Discharge Current	Charge Voltage	Maximum Charge Current	Safety Standard
IJ1201M	1.2kWh (24Ah)	1.15kWh (22.5Ah)	51.2V	90A	56.0V	22.5A	-

Storage Temperature: -20 to 45°C (Room temperature recommended)

Operating Ambient Temperature: Continuous Discharge: 0 to 30°C (Discharge current \leq 90.0A)

30 to 35°C (Discharge current \leq 75.0A)

35 to 40°C (Discharge current \leq 67.5A)

Non Continuous Discharge: 30 to 40°C (Discharge current \leq 90.0A, Time \leq 60 sec)

Charge: 10 to 40°C (Charge current \leq 22.5A)

0 to 10°C (Charge current \leq 6.75A Recommended)

BMU (Battery Management Unit)



(Excluding terminal)
IJ5101C
12kg

*use for Japan market



(Excluding terminal)
IJ8101C
14kg

(in mm)

Model Name	Operating Voltage	Operating Current	Communication Interface	Configuration	Safety Standard
IJ5101C	60 to 420V	0 to 100A	RS232C/RS485C	Series: to 7 series Mix Combination: to 6 series and to 2 parallels Maximum module connections: 32 modules	-
IJ8101C	300 to 1000V	0 to 100A	RS232C/RS485C	Series: to 16 series Mix Combination: to 16 series and to 2 parallels	EU LV Directive EU EMC Directive UL 1973 FCC Part15 Class B *It is certificated along with IJ1101M. *UL 1973 is certified for maximum of 90 A.

Storage Temperature: -20 to 65°C (Room temperature recommended)

Operating Ambient Temperature: -20 to 50°C (Room temperature recommended)

BMU-HUB



Model Name	Operating Voltage	Purpose	Configuration	Safety Standard
IJ1101K	DC12V, DC24 to 60V	Interface unit to connect IJ8101C for utility	Parallel: to 64BMU Maximum module connections: 64X32=2048 modules (maximum 4.3MWh)	EU EMC Directive FCC Part15 Class B

Storage Temperature: -20 to 65°C (Storage and use in room temperature is recommended)
Operating Ambient Temperature: -20 to 60°C (Storage and use in room temperature is recommended)

Cable

Model Name	Type	Specification
IJT-102F	Communication Cable 20cm	RS485
IJT-103F	Communication Cable 30cm	RS485
IJT-115F	Communication Cable 150cm	RS485
IJT-130F	Communication Cable 300cm	RS485
IJD-103F/R	Thicker Power Cable 30cm (red)	AWG4
IJD-103F/B	Thicker Power Cable 30cm (black)	AWG4
IJD-110F/R	Thicker Power Cable 100cm (red)	AWG4
IJD-110F/B	Thicker Power Cable 100cm (black)	AWG4

Coin Manganese Dioxide Lithium Batteries

Coin manganese dioxide lithium batteries are small-sized primary batteries for various applications such as TPMS (Tire Pressure Monitoring System) or smart entry systems for automobile, IoT devices, and backup power source for memory.



Standard

A lineup of 11 models is offered from small size and thin models to high-capacity models.

Model	Electrical Characteristics			Dimensions			Operating Temperature Range (°C)
	Nominal Voltage (V)	Nominal Capacity (mAh)	Standard Discharge Current (mA)	Diameter (mm)	Height (mm)	Weight (g)	
CR1216	3	30	0.1	12.5	1.6	0.67	-30 to 70
CR1220	3	40	0.1	12.5	2.0	0.77	-30 to 70
CR1616	3	60	0.1	16.0	1.6	1.1	-30 to 70
CR1620	3	80	0.1	16.0	2.0	1.3	-30 to 70
CR1632	3	140	0.2	16.0	3.2	1.9	-30 to 70
CR2016	3	90	0.1	20.0	1.6	1.8	-30 to 70
CR2025	3	160	0.2	20.0	2.5	2.6	-30 to 70
CR2032	3	220	0.2	20.0	3.2	3.1	-30 to 70
CR2430	3	300	0.2	24.5	3.0	4.4	-30 to 70
CR2450	3	610	0.2	24.5	5.0	6.5	-30 to 70
CR2477	3	1000	0.4	24.5	7.7	11	-30 to 70

Nominal capacity indicates duration until discharge voltage drops down to 2.0V when discharged at nominal discharge current at 23°C.

Heat-resistant

Ideal for devices used in severe operating temperature environments including automobiles and FA, etc.

Model	Electrical Characteristics			Dimensions			Operating Temperature Range (°C)
	Nominal Voltage (V)	Nominal Capacity (mAh)	Recommended Continuous Discharge Current (mA)	Diameter (mm)	Height (mm)	Weight (g)	
CR2032W	3	210	≤1	20.0	3.2	3.1	-40 to 125
CR2050W	3	345	≤1	20.0	5.0	4.2	-40 to 125
CR2450W	3	550	≤1	24.5	5.0	6.7	-40 to 125
CR2477W	3	1000	≤1	24.5	7.7	11	-40 to 125

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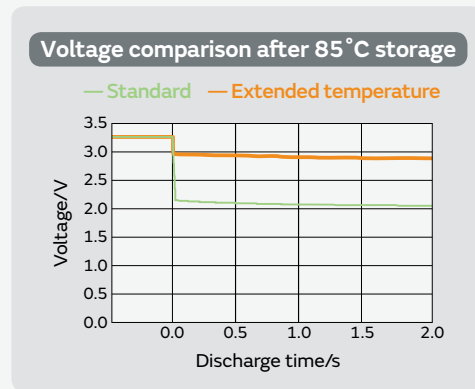
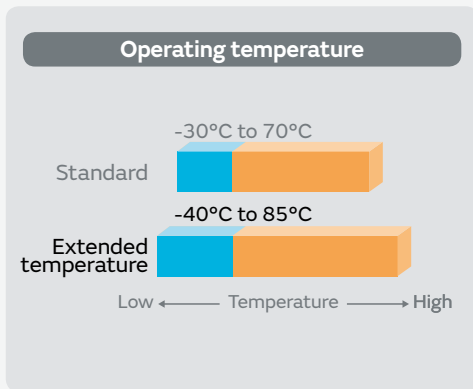
Extended Temperature

Designed for automotive devices and outdoor IoT systems, including smart meters and FA control systems. Recommended as an alternative smaller and thinner solution to conventional cylindrical lithium batteries.

Model	Electrical Characteristics				Dimensions			Operating Temperature Range (°C)
	Nominal Voltage (V)	Nominal Capacity (mAh)	Recommended Continuous Discharge Current (mA)	Maximum pulse discharge current*1 (mA)	Diameter (mm)	Height (mm)	Weight (g)	
CR2032X	3.0	220	≤1	30	20.0	3.2	3.0	-40 to 85
CR2450X	3.0	610	≤1	30	24.5	5.0	6.2	-40 to 85
CR2477X	3.0	1000	≤1	30	24.5	7.7	9.5	-40 to 85
CR3677X*2	3.0	2000	≤1	80	36.5	7.7	20	-40 to 85

*1 Current for maintaining minimum 2V voltage with pulsed discharge of 3 seconds and 50% nominal capacity discharged (ambient temperature 23°C)

*2 Shipment of mass-produced CR3677X is scheduled to start at the end of 2019.

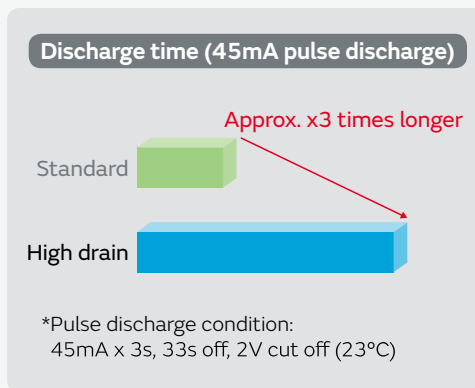
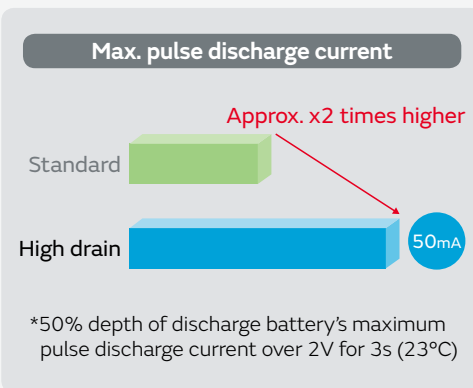


High Drain

Ideal for tracking devices for logistics and asset management by adopting Low Power Wide Area (LPWA) networks such as LoRa and SIGFOX as well as for outdoor infrastructures, FA control systems, and environment monitoring sensors.































Model	Electrical Characteristics				Dimensions			Operating Temperature Range (°C)
	Nominal Voltage (V)	Nominal Capacity (mAh)	Recommended Continuous Discharge Current (mA)	Maximum pulse discharge current*1 (mA)	Diameter (mm)	Height (mm)	Weight (g)	
CR2032R	3.0	200	≤3	50	20.0	3.2	3.0	-30 to 70
CR2450R	3.0	500	≤3	50	24.5	5.0	6.2	-30 to 70

*1 Current for maintaining minimum 2V voltage with pulsed discharge of 3 seconds and 50% nominal capacity discharged (ambient temperature 23°C)



Continued on the following page. ↗

Tab-welder

Mounting Direction		H			V	M
						
Tab Specification	Shape	E		O	E	P
	Width of Negative Tab Tip (mm)	0.75	0.75	1.8	0.75	2.0
	Width of Positive Tab Tip (mm)	0.75X2	0.75X2	2.8	0.75X2	2.0
	Pitch (mm)	17.8	20.5	20.5	N/A	N/A
Standard	CR2032	CR2032-HE8 	CR2032-HE1 	CR2032-HO6 	CR2032-VE3 	
	CR2430	CR2430-HE1 	CR2430-HE2 	CR2430-HO1 	CR2430-VE1 	
	CR2450	CR2450-HE5 	CR2450-HE6 	CR2450-HO5 	CR2450-VE6 	
	CR2477		CR2477-HE2 	CR2477-HO4 	CR2477-VE1 	
Extended Temperature	CR2032X		CR2032X-HE1 	CR2032X-HO6 		
	CR2450X		CR2450X-HE6 	CR2450X-HO5 		
	CR2477X		CR2477X-HE2 	CR2477X-HO4 		
Heat-resistant	CR2050W					CR2050W-MP1 
	CR2450W					CR2450W-MP1 
High Drain	CR2032R		CR2032R-HE1 	CR2032R-HO6 		
	CR2450R		CR2450R-HE6 	CR2450R-HO5 		

For tab shapes or specifications not included in the above list, please consult your sales representative.

Silver Oxide Batteries

Silver oxide batteries are small-sized primary batteries with high capacity and stable discharge characteristics. They are suitable for quartz watches, medical devices and precision instruments. All models are 100% made in Japan, and environmentally friendly (0% mercury).



Model	Electrical Characteristics		Dimensions			Operating Temperature Range (°C)
	Nominal Voltage (V)	Nominal Capacity (mAh)	Diameter (mm)	Height (mm)	Weight (g)	
SR621	1.55	20	6.8	2.15	0.32	-10 to 60
SR626	1.55	28	6.8	2.60	0.40	-10 to 60
SR721	1.55	29	7.9	2.10	0.42	-10 to 60
SR726	1.55	35	7.9	2.60	0.50	-10 to 60
SR41	1.55	45	7.9	3.60	0.65	-10 to 60
SR48	1.55	75	7.9	5.40	1.2	-10 to 60
SR920	1.55	40	9.5	2.05	0.59	-10 to 60
SR927	1.55	60	9.5	2.70	0.79	-10 to 60
SR936	1.55	75	9.5	3.60	1.1	-10 to 60
SR1120	1.55	60	11.6	2.05	0.92	-10 to 60
SR1130	1.55	85	11.6	3.05	1.4	-10 to 60
SR43	1.55	110	11.6	4.20	1.8	-10 to 60
SR44	1.55	160	11.6	5.40	2.2	-10 to 60

Data is not guaranteed, and is provided for reference purposes only.
Please contact us for other models.

Alkaline Manganese Batteries

Alkaline manganese batteries are small-sized primary batteries with high performance. They are suitable for various applications such as toys, medical devices and health appliances. All models are 100% made in Japan, and environmentally friendly (0% mercury).



Model	Electrical Characteristics		Dimensions			Operating Temperature Range (°C)
	Nominal Voltage (V)	Nominal Capacity (mAh)	Diameter (mm)	Height (mm)	Weight (g)	
LR41	1.5	45	7.9	3.60	0.57	-10 to 60
LR1130	1.5	70	11.6	3.05	1.2	-10 to 60
LR43	1.5	110	11.6	4.20	1.6	-10 to 60
LR44	1.5	120	11.6	5.40	2.0	-10 to 60

Data is not guaranteed, and is provided for reference purposes only.
Please contact us for other models.

Sound Components (Buzzer)

Piezoelectric ceramic materials that expand and shrink by applying voltage are used in piezoelectric sound components.

Summary

Using Murata's unique ceramic material, we offer a variety of piezoelectric sound components.

Lineup

- SMD Piezoelectric Sounders
- Pin Type Piezoelectric Sounders
- Piezoelectric Buzzers
- Piezoelectric Diaphragms



<https://www.murata.com/en-global/products/sound>

SMD Piezoelectric Sounders

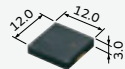
Low power consumption, lightweight.

Optimized for small devices such as blood glucose meters, clinical thermometers, photoflashes for cameras, and portable terminals.

Applicable for automotive usage based on our design and manufacturing technology.



PKMCS1818E20



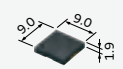
PKLCS1212E20



PKLCS1212E24



PKLCS1212E40



PKMCS0909E40

(in mm)

Applications	Mounting Type	Drive Type	Main Part Number	Sound Pressure Level (typ.)	Measurement Condition of Sound Pressure Level
For Automotive	Surface Mounting Type	External Drive	PKMCS1818E20A0-R1	100dB	12Vo-p, 2.0kHz, square wave, 10cm
			PKLCS1212E20A0-R1	76dB	±1.5Vo-p, 2.0kHz, square wave, 10cm
			PKLCS1212E24A0-R1	80dB	±1.5Vo-p, 2.4kHz, square wave, 10cm
			PKLCS1212E40A1-R1	84dB	±1.5Vo-p, 4.0kHz, square wave, 10cm
For Consumer			PKLCS1212E2000-R1	76dB	±1.5Vo-p, 2.0kHz, square wave, 10cm
			PKLCS1212E2400-R1	80dB	±1.5Vo-p, 2.4kHz, square wave, 10cm
			PKLCS1212E4001-R1	84dB	±1.5Vo-p, 4.0kHz, square wave, 10cm
			PKMCS0909E4000-R1	72dB	±1.5Vo-p, 4.0kHz, square wave, 10cm

Detailed Catalogs

For more details, please refer to our printed catalogs and the PDF catalogs on our website.



• Piezoelectric Sound Components

Cat. No. P37E

Pin Type Piezoelectric Sounders

Low power consumption, lightweight.

These products are optimized for operation confirmation sounds and warning sounds in household appliances such as air conditioners, washers, and refrigerators.

Packaging	Mounting Type	Drive Type	Main Part Number	Sound Pressure Level (typ.)	Measurement Condition of Sound Pressure Level
Taping	Pin Type	External Drive	PKM13EPYH4000-A0	78dB	±1.5Vo-p, 4.0kHz, square wave, 10cm
Bulk			PKM13EPYH4002-B0	78dB	±1.5Vo-p, 4.0kHz, square wave, 10cm
			PKM17EPP-2002-B0	79dB	3.0Vo-p, 2.0kHz, square wave, 10cm
			PKM22EPH2001	85dB	±1.5Vo-p, 2.0kHz, square wave, 10cm
			PKM22EPPH2001-B0	79dB	±1.5Vo-p, 2.0kHz, square wave, 10cm
			PKM22EPPH4007-B0	92dB	±1.5Vo-p, 4.0kHz, square wave, 10cm

Piezoelectric Buzzers

This is a unified piezoelectric sounder connected to a built-in self-drive circuit, and it easily generates sound with only a DC power supply.

Suitable for gas detector alarms/burglar alarms/home-electronic appliances.

Mounting Type	Drive Type	Main Part Number	Sound Pressure Level (min.)	Measurement Condition of Sound Pressure Level
Pin Type	Self Drive	PKB24SPCH3601-B0	90dB	12Vdc, 10cm

Piezoelectric Diaphragms

Low power consumption, lightweight.

Suitable for clocks/calculators/digital cameras/burglar alarms, and various alarms.

Drive Type	Main Part Number	Plate Size (øD)
External Drive	7BB-12-9	ø12.0mm
	7BB-15-6	ø15.0mm
	7BB-20-6	ø20.0mm
	7BB-27-4	ø27.0mm

□: Indicates Metal Plate Diameter and Resonant Frequency Type.

Wireless Communication Modules

Available for a wide range of applications such as automotive, mobile computing devices, and household appliances.

Wi-Fi Modules/ Bluetooth · Wi-Fi Combo Modules



■ Features

Compact, highly efficient, and flexible custom-made correspondence

■ Applications

Mobile phones, automotive, tablet PC, POS, HT, electric equipment, smart grid, etc.

Bluetooth Modules/ Bluetooth Low Energy Modules



■ Features

Compact, highly efficient, and flexible custom-made correspondence

■ Applications

Mobile phones, automotive, PMP, POS, HT, healthcare, wireless remote control, etc.

Low Power Wide Area Network (LPWAN) Wireless Module



■ Features

LPWA Wireless Technology-Low-Power consumption, wide area coverage, enables IoT applications. Compact, high efficient, support various communication standards.

■ Applications

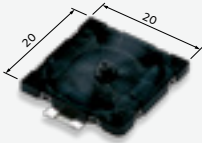
Positioning Tracking, Smart Houses, Agriculture, Healthcare/Medical, Industrial, Logistics, Utilities (Water, Gas Metering), etc.

Microblowers

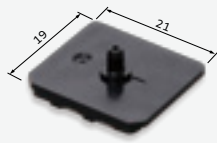
Tiny air blower/pumps without a motor

■ Features

The structure is designed to operate as a blower and pump by applying the ultrasonic vibrations of the ceramic as the drive source. Achieved in an extremely compact, thin, and silent device with a high flow rate.



MZB1001T02



MZB3004T04

(in mm)

Part Number	MZB1001T02	MZB3004T04
Size	20(W) x 20(L) x 1.85(H)(Nozzle Height 1.6)	21(W) x 19(L) x 3.4(H)(Nozzle Height 4.5)
Flow rate	$\geq 0.7\text{L}/\text{min}@15\text{Vp-p}$	$\geq 0.155\text{L}/\text{min}@33\text{Vp-p}$
Pressure	$\geq 1.42\text{kPa}@15\text{Vp-p}$	$\geq 50\text{kPa}@38\text{Vp-p}$
Resonance frequency	24kHz to 27kHz	21.5kHz to 24.5kHz
Input Voltage	10Vp-p to 20Vp-p	15Vp-p to 38Vp-p(*1)
Operating Temperature range	0°C to 70°C	0°C to 45°C(*2)

*A drive circuit is required for the operation. Driving circuits are not common.

(*1) Only when the back pressure condition is 10kPa or more, it can be driven with a voltage of 33Vp-p or more.

(*2) When operated continuously, the sufficient performance may not be demonstrated due to the generation of heat.

Please use in environments where the temperature of the pump's metal surface is 60°C or less.

- The microblower cannot be used for automobile applications (including accessories). Please refrain from use for automobile applications.
- If the microblower is used for medical applications, Murata requires a special contract to cover the use in the medical application to be agreed before start of mass production. Please contact us for details.

■ Application Example

Aroma diffuser, gas/breath suction equipment, blood pressure measuring,
Liquid transfer equipment by air pressure

Ceramic Applied Products

Contribution to high integration and miniaturization requirements of the automotive industry and RF modules.

Low Temperature Co-fired Ceramics (LTCC) Multi-layer Module Boards



LTCC, Low Temperature Co-fired Ceramics, is a multi-layer, glass ceramic substrate that is co-fired with low resistance metal conductors. What makes Murata's LTCC special is our unique "Zero Shrinking Sintering Process," which restricts the ceramic shrinkage to only thickness.

Murata's LTCC multilayer substrates LFC are useful in a wide range of electronic equipment such as substrates for highly reliable electronic control units equipping vehicles and functional substrates for miniaturized high-frequency modules in cellular phones.

LFC Series

Murata's LFC Series LTCC substrate meets high integration and miniaturization requirements necessary for automotive applications.

AWG Series

Utilized in low-profile (from 0.3mm), small-outline RF modules, the AWG Series features ultra-thin ceramic tapes, multiple material tape lamination, and enhanced board strength.



Cat.No. N20E

SWG Series

SWG Series achieves better board strength and lower profile (from 0.1mm) than those of AWG Series.

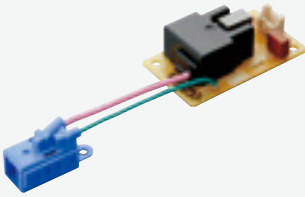
Ionizer Modules Ionissimo®

High-concentration ion, compact design, ozone control

Ionissimo® is an ionizer module with unprecedented compactness and high efficiency, capable of generating the largest number of ions in the industry* owing to Murata's own high-voltage technology and structural design. The ion generator is connected to the driving power supply for modularization and ease of incorporating into equipment.

*Surveyed by Murata (as of March 2011)

MHM Series



■ Features

- A large number of ions will be created by the original structure.
- Compact equipment may be designed due to small ionizer element and driving power supply.
- Ozone amounts may be optimized for specific applications by controlling the generation of ozone without changing the number of ions.

■ Applications

Air conditioner, air purifier, static eliminator, vacuum cleaner, etc.

Items	MHM314 Type	MHM305 Type	MHM306 Type	MHM400 Type
Input Voltage (VDC)	+10.8 to 13.2	←	←	←
Power	0.9W	0.4W	0.6W	0.6W
Ion Polarity	Negative	←	←	Positive
Ion Amount (*1)	>20000000pcs/cc (*2)	>20000000pcs/cc	←	←
Ozone Level	0.1mg/H (typ.)	<0.1mg/H	<1.0mg/H	<0.1mg/H
Operating Temp.	-10 to 50°C	←	←	←
Operating Humidity	20 to 80%RH (without dewdrop)	←	←	←

(*1) Measuring distance : 20cm

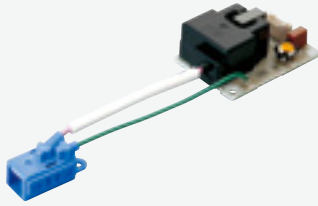
(*2) MHM314's Ion amount is around 3 times compared to MHM305.

View a demonstration video of Ionizer Modules Ionissimo® on our website.

Ozonizer Modules Ionissimo[®]

By using low-temperature co-fired ceramic substrate (LTCC) for the discharger ozone will be generated stably.

MHM Series



■ Features

- Stable ozone generation.
- MHM501 type can be used under high humidity conditions.
- Small size

■ Applications

Refrigerator, vacuum cleaner, dishwasher, clothes washer, etc.






Items	MHM500 Type	MHM501 Type	MHM502 Type
Input Voltage (VDC)	+11 to 13	←	←
Power	1.0W	1.0W (with heater)	6.0W
Ozone Level	<2.5mg/H	<2.5mg/H	<60mg/H
Operating Temp.	-10 to 50°C	←	←
Operating Humidity	20 to 80%RH (without dewdrop)	20 to 95%RH	20 to 85%RH (without dewdrop)

View a demonstration video of Ozonizer Modules Ionissimo[®] on our website.

RFID Devices





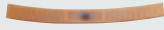
RFID for transferring identification data by wireless communication. The state-of-the-art technology allows IC tags to be attached to places where traditional barcode and QR code technology could suffer from aging. Murata offers a comprehensive range of items required to introduce RFID, from IC tags to high-quality antennas, reader/writers, and software applications. With the complete kits from Murata, RFID is seamlessly and reliably implemented.

HF (13.56 MHz) RFID Tag (MAGICSTRAP®)

Part number	LXMS33HCNG-134	LXMS33HCNK-171	LXMS33HCNL-167	LXMSAPHA08-136	LXMSAPHA17-176
Type	Embeddable (Antenna integrated)			Tag (Antenna combined)	
Appearance					
RFID Standard	ISO15693 NFC Forum type5	ISO14443 TypeA NFC Forum type2		ISO15693 NFC Forum type5	ISO14443 TypeA NFC Forum type2
Frequency	13.56MHz				
IC	NXP ICODE SLIX	NXP NTAG210	NXP NTAG212	NXP ICODE SLIX	NXP NTAG213
UID memory	64bit				
NDEF memory	896bit	384bit	1024bit	896bit	1152bit
Size (L x W x H)	3.2 x 3.2 x 0.7 mm	3.2 x 3.2 x 0.75 mm		8.3 x 8.3 x 0.8 mm	
Read range (typ)	20mm (200mW reader)	15mm (200mW reader)	15mm (200mW reader)	42mm (200mW reader)	32mm (200mW reader)

*Read range depends on the performance of the output power and the antenna of reader/writer.

UHF (860/920MHz) RFID Tag (MAGICSTRAP®)

Part number	LXMS21NCNH-147	LXMSJZNCMF-198	LXMS21ACMF-183	LXMS21ACNP-184	LXMSANAA19-181	LXMSANAA18-182
Type	Embeddable (Antenna integrated)		PCB mount (External antenna)		Laundry tag (Antenna combined)	
Appearance						
RFID Standard	ISO18000-63 and EPC Global Gen2(v1.2.0)	ISO18000-63 and EPC Global Gen2v2	ISO18000-63 and EPC Global Gen2v2	ISO18000-63 and EPC Global Gen2(v1.2.0)	ISO18000-63 and EPC Global Gen2v2	
Frequency	865-928MHz				902-928MHz	865-868MHz
IC	NXP G2iM	Impinj Monza R6	Impinj Monza R6	NXP UCODE 7xm	Impinj Monza R6	
EPC memory	256bit	96bit	96bit	448bit	96bit	
User memory	512bit	NA	NA	2048bit	NA	
Size (L x W x H)	2.0 x 1.25 x 0.55 mm	1.25 x 1.25 x 0.55 mm	2.0 x 1.25 x 0.5 mm		40 x 6 x 0.9 mm	
Read range (typ)	10mm (500mW reader)	10mm (500mW reader)	9m (4W EIRP)	7m (4W EIRP)	2m (4W EIRP)	2m (4W EIRP)

* Read range depends on the performance of the output power and the antenna of reader/writer.

Note: MAGICSTRAP® is a registered trademark of Murata Manufacturing Co., Ltd.

Note: Monza is a registered trademark of USA-based Impinj, Inc. in the United States and/or in other countries.

Note: ICODE and UCODE are registered trademarks of USA-based NXP Semiconductors N.V. in the United States and/or in other countries.

Femtet[®], CAE Software

User-Friendly Simulation Software Tailored for a Wide Range of Engineering Challenges

Femtet[®] is a Multiphysics CAE software with multiple functionalities developed by Murata Manufacturing Co, Ltd.

Features

Femtet[®]

Femtet[®] is simulation software based on the finite element method. Its easy operation and comprehensive functionality make stress-free analysis environment possible.

Seven Solvers and Multiphysics

Solves seven major physical phenomena and multiphysics.

Efficient Designing

Capable of batch processing and parametric analysis that are essential for tuning and optimization of design.

VBA macro function is available to realize optimum design.

Comprehensive Functionalities

Equipped with comprehensive modules needed for modeling (CAD), meshing, simulations, and results display, it supports cost-effective simulation activities.

Database Management

Manages databases of materials, boundary conditions, body attributes, and models.

The database can be shared and used among a group of users.

CAD Translator

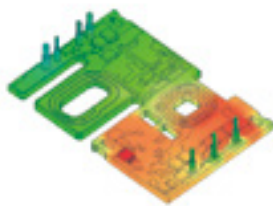
Lets you use the CAD data on hand right away by supporting various kinds of CAD formats to import and export.

Examples

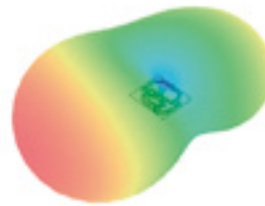
Mechanical Stress



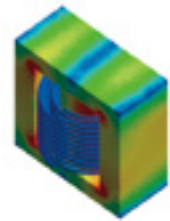
Thermal Conductivity



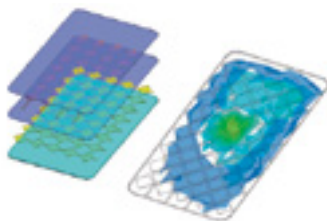
Electromagnetic Waves



Magnetic Fields



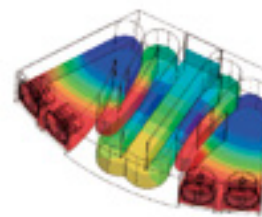
Electric Fields



Piezoelectricity



Acoustic Waves

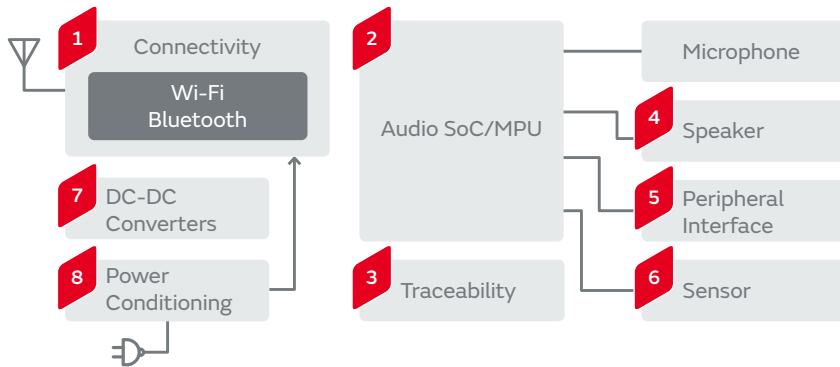


Memo

Application Guides



AI speaker (Voice recognition)



1 Connectivity

- Microwave Coaxial Cable Connectors
- Microwave Coaxial Connectors with Switch
- Chip Multilayer Hybrid Baluns LDB/LDM Series
- Chip Multilayer Diplexers LFD Series
- Chip Inductors (Chip Coils) LQP03HQ/LQW18AN Series
- Chip Multilayer LC Filters LF Series
- Chip Multilayer Hybrid Couplers LDC/LDJ Series
- ESD Protection Devices LXES**A Series

2 Audio SoC/MPU

- Crystal Units XRC Series

3 Traceability

- RFID Tag Device (MAGICSTRAP®) LXMS Series

4 Speaker

- Frequency Specified Noise Filters BLF02 Series
- Chip LC Trap Filters LQZ02HQ Series

5 Peripheral Interface

- ESD Protection Devices LXES**A Series
- ESD Protection Devices LXES**D Series
- Chip Common Mode Choke Coils DLM0N/NFPOQ Series

6 Sensor

- Pyroelectric Infrared Sensors IRA-S Series
- Ultrasonic Sensors MA40S4R/MA40S4S Series

7 DC-DC Converters

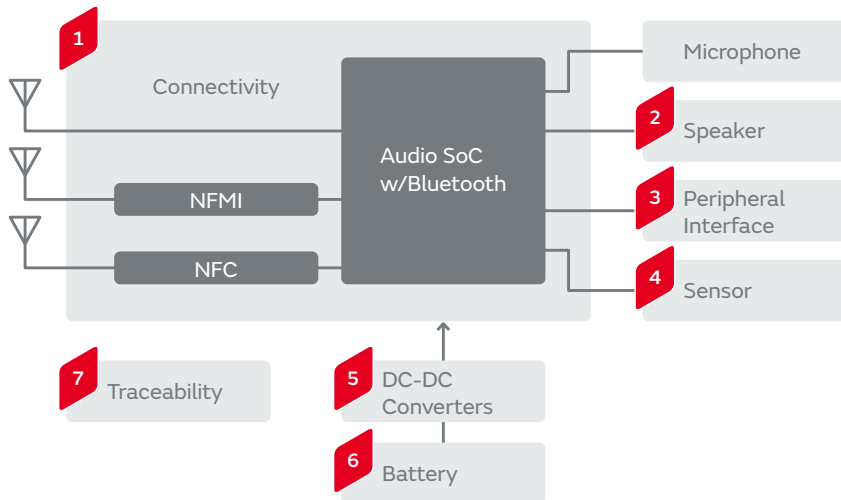
- Power Inductors DFEC Series
- Power Inductors DFES/LQH3NP Series

8 Power Conditioning

- Thermistors NCP03/NXR Series
- Chip Ferrite Beads BLM18/21 Series
- Chip Common Mode Choke Coils DLW5AT/5BT Series

General Purpose Chip Multilayer Ceramic Capacitors for General Purpose GRM Series High Frequency Filter Circuit/Coupling/Decoupling/For Step-up

Hearable



1 Connectivity

<p>RF Inductors LQP02HQ/LQW15AN Series</p>	<p>Microwave Coaxial Cable Connectors Microwave Coaxial Connectors with Switch</p>	<p>Chip Multilayer LC Filters LF Series</p>
<p>Chip Multilayer Hybrid Baluns LDB/LDM Series</p>	<p>Chip Multilayer Diplexers LFD Series</p>	<p>Chip Multilayer Hybrid Couplers LDC/LDJ Series</p>
<p>ESD Protection Devices LXES**A Series</p>	<p>Chip LC Trap Filters LQZ02HQ Series</p>	<p>Frequency Specified Noise Filters BLF02RD Series</p>
<p>NFC Antennas FLAN Series</p>		<p>Crystal Units XRCTD/XRC Series</p>

2 Speaker

<p>Chip LC Trap Filters LQZ02HQ Series</p>	<p>Frequency Specified Noise Filters BLF02 Series</p>
-------------------------------------------------------	------------------------------------------------------------------

3 Peripheral Interface

<p>ESD Protection Devices LXES**A Series</p>	<p>ESD Protection Devices LXES**D Series</p>
---------------------------------------------------------	---------------------------------------------------------

4 Sensor

Thermistors
NCP03/FTN Series



5 DC-DC Converters

Power Inductors
DFE18SAN Series



6 Battery

Thermistors
NCP03/FTN Series



7 Traceability

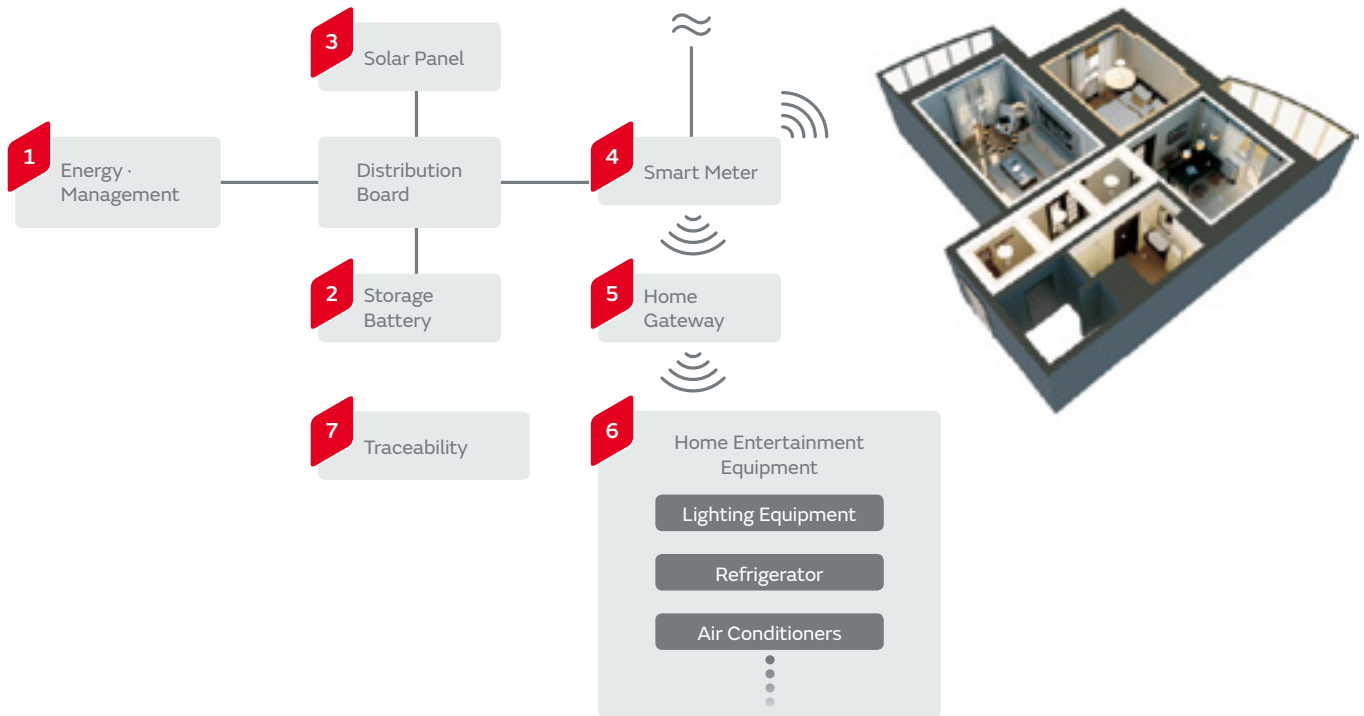
RFID Tag Device (MAGICSTRAP®)
LXMS Series



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose GRM Series High Frequency Filter Circuit/Coupling/Decoupling/For Step-up

HEMS



1 Energy · Management

Ceramic Resonators CERALOCK® CST Series

Crystal Units XRC Series

2 Storage Battery

<p>Isolated DC-DC Converters MYB Series</p>	<p>Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series</p>	
<p>Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series</p>	<p>Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series</p>	
<p>Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series</p>	<p>Thermistors PRF/PRG/PTG/NCU Series</p>	
<p>Energy Storage Module Model IJ1101M Series</p>	<p>BMU (Battery Management Unit) IJ8101C Series</p>	<p>BMU-HUB IJ1101K Series</p>

3 Solar Panel

Isolated DC-DC Converters MYB Series

Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series

Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series

4 Smart Meter

Chip Multilayer LC Filters LF Series 

Chip Multilayer Hybrid Baluns LDB/LDM Series 

Wi-Fi Modules 

LPWA Modules 

Isolated DC-DC Converters MYB Series 

Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series 

Isolated DC-DC Converters for PoE + PD MYBSP Series 

Chip Multilayer Ceramic Capacitors for Ethernet LAN and Primary - Secondary Coupling of DC-DC Converters GR4 Series 

Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series 


Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series 


Crystal Units XRC Series 


Piezoelectric Sounders PKMCS/PKLCs/PKM Series 


Coin Manganese Dioxide Lithium Batteries Standard Type/Heat-resistant Type 


5 Home Gateway


Wi-Fi Modules 

Bluetooth Modules 


LPWA Modules 


Microwave Coaxial Cable Connectors 


Microwave Coaxial Connectors with Switch 


Isolated DC-DC Converters for PoE + PD MYBSP Series 


6 Home Entertainment Equipment


Bluetooth Modules 


Wi-Fi Modules 


LPWA Modules 

Ultrasonic Sensors MA Series 


Magnetic Sensors (AMR Sensors) MR Series 

Isolated DC-DC Converters MYB Series 

Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series 

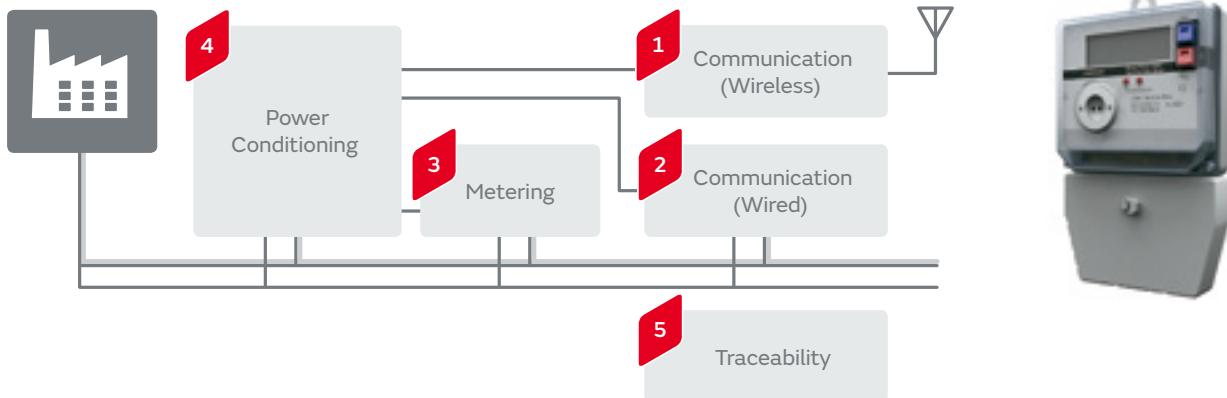
Crystal Units XRC Series 

7 Traceability

RFID Tag Device (MAGICSTRAP®) LXMS Series 

General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM/NFZ Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
	Microwave Absorbers	EA Series	Noise Suppression

Smartmeter



1 Communication (Wireless)

<p>Wi-Fi Modules</p>	<p>LPWA Modules</p>	<p>Chip Multilayer LC Filters LF Series</p>	<p>Chip Multilayer Hybrid Baluns LDB/LDM Series</p>	<p>Microwave Coaxial Cable Connectors</p>
<p>Microwave Coaxial Connectors with Switch</p>	<p>ESD Protection Devices LXES Series</p>	<p>Thermistors NCP/PRF/PRG/NCU Series</p>	<p>Crystal Units XRC Series</p>	<p>Chip Inductors (Chip Coils) LQW/LQP/LQG Series</p>

2 Communication (Wired)

<p>Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series</p>	<p>Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series</p>
<p>Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series</p>	<p>Leaded MLCC for General Purpose RDE Series</p>
<p>Thermistors NCP/PRF/PRG/NCU Series</p>	<p>Ceramic Resonators CERALOCK® CST Series</p>
<p>Crystal Units XRC Series</p>	<p>ESD Protection Devices LXES Series</p>

3 Metering

<p>Chip Common Mode Choke Coils/ Noise Filters DLW/DLP/NFP Series</p>	<p>Thermistors NCP/PRF/PRG/NCU Series</p>
<p>Ceramic Resonators CERALOCK® CST Series</p>	<p>Crystal Units XRC Series</p>
<p>Piezoelectric Sounders PKMCS/PKLCS/PKM Series</p>	

4 Power Conditioning

Non-Isolated DC-DC Converters
MYMGK/MYSGK/
OKL/MYSLM Series



Isolated DC-DC Converters for PoE + PD
MYBSP Series



Chip Multilayer Ceramic Capacitors for General Purpose
GR/GA Series



Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose
DK1 Series



Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose
DE1/DE2 Series



Leaded MLCC for General Purpose
RDE Series



Chip Inductors (Chip Coils)
LQH Series



Thermistors
NCP/PRF/PRG/NCU Series



Polymer Aluminum Electrolytic Capacitors
ECAS/ECNS Series



Coin Manganese Dioxide Lithium Batteries
Standard Type/Heat-resistant Type



5 Traceability

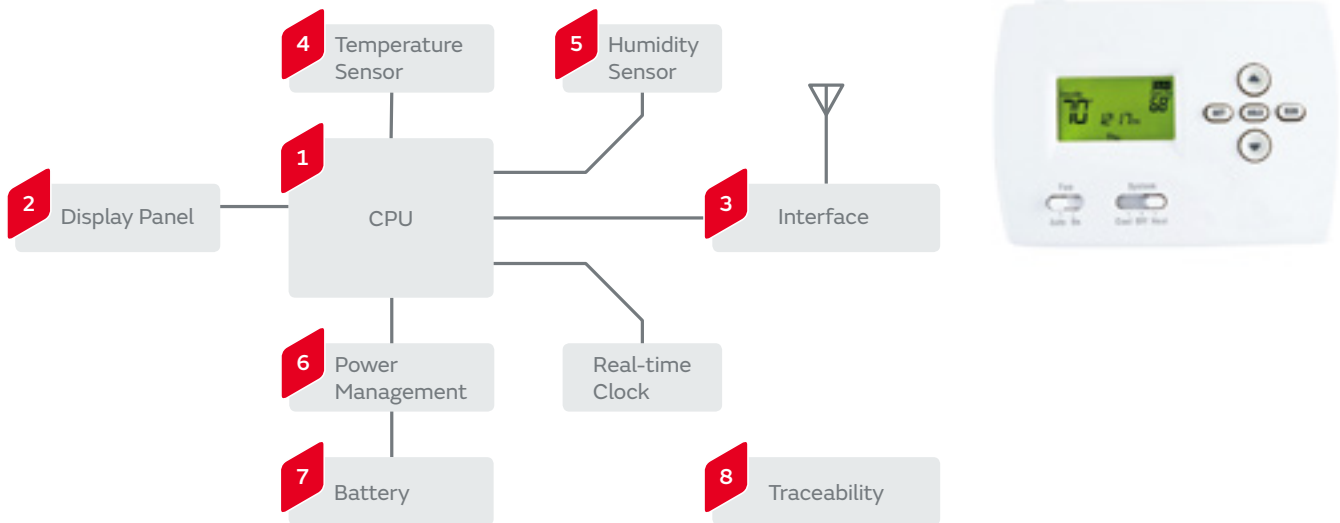
RFID Tag Device (MAGICSTRAP®)
LXMS Series



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression

Thermostat



1 CPU

Low ESL Chip Multilayer Ceramic Capacitors for General Purpose LLL/LLA/LLM Series	Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series	
Ceramic Resonators CERALOCK® CST Series	Crystal Units XRC Series	Thermistors NCP/PRF Series

2 Display Panel

Metal Terminal Type Multilayer Ceramic Capacitors for General Purpose KRM Series	Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series	
Thermistors NCP/PRF Series	Ceramic Resonators CERALOCK® CST Series	Piezoelectric Sounders PKMCS/PKLCs/PKM Series

3 Interface

Bluetooth Modules	LPWA Modules	Wi-Fi Modules
Crystal Units XRC Series	Ceramic Resonators CERALOCK® CST Series	
Chip Inductors (Chip Coils) LQM/LQH/LQB Series	ESD Protection Devices LXES Series	

5 Humidity Sensor

Thermistors NCP/PRF/PRG/PTG Series	Ceramic Resonators CERALOCK® CST Series

6 Power Management

Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series	Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series
Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series	Thermistors NCP/PRF/PRG Series

4 Temperature Sensor

Thermistors NCP/PRF/PRG/PTG Series	Ceramic Resonators CERALOCK® CST Series

7 Battery

Thermistors
NCP/PRF/PRG Series



8 Traceability

RFID Tag Device (MAGICSTRAP®)
LXMS Series



General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
	Microwave Absorbers	EA Series	Noise Suppression

Human Detection



1 Microcontroller

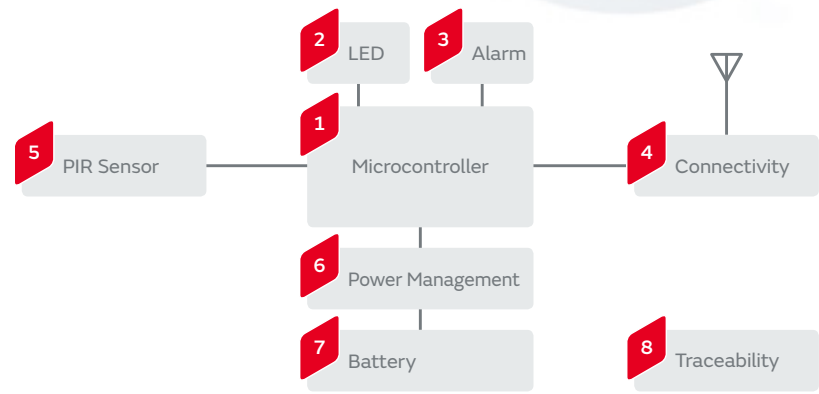
Low ESL Chip Multilayer Ceramic Capacitors for General Purpose LLL/LLA/LLM Series

Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series

Crystal Units XRC Series

Thermistors NCP/PRF Series

Isolated DC-DC Converters for PoE + PD MYBSP Series



2 LED

Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series

Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series

Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series

Thermistors NCP/PRF/PRG/PTG Series

3 Alarm

Piezoelectric Sounders PKMCS/PKLCS/PKM Series

4 Connectivity

Wi-Fi Modules

Crystal Units XRC Series

Chip Inductors (Chip Coils) LQW/LQP/LQG Series

ESD Protection Devices LXES Series

5 PIR Sensor

Pyroelectric Infrared Sensors IRA Series

Isolated DC-DC Converters for PoE + PD MYBSP Series

Silicon Capacitors

6 Power Management

Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series

Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series

Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series

Ceramic Resonators CERALOCK® CST Series

Chip Common Mode Choke Coils/Noise Filters DLW/DLP/NFP Series

Thermistors NCP/PRF/PRG Series

7 Battery

Thermistors NCP/PRF/PRG Series

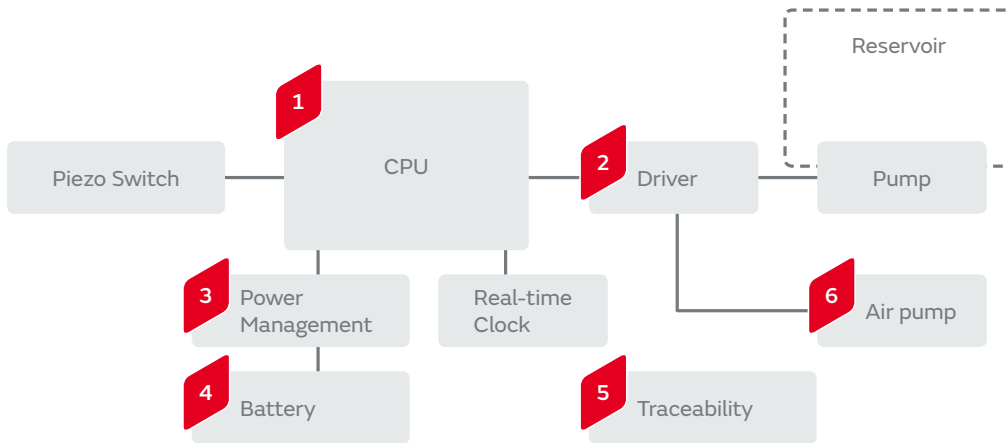
Coin Manganese Dioxide Lithium Batteries Standard Type

8 Traceability






RFID Tag Device (MAGICSTRAP®) LXMS Series

General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
	Microwave Absorbers	EA Series	Noise Suppression


Air Dispenser








1 CPU

Low ESL Chip Multilayer Ceramic Capacitors for General Purpose LLL/LLA/LLM Series 	Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series 	Ceramic Resonators CERALOCK® CST Series 	Crystal Units XRC Series 	Thermistors NCP/PRF Series 
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2 Driver

Thermistors
NCP/NXRT/PRF Series


3 Power Management

Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series 	Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series 
Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series 	
Ceramic Resonators CERALOCK® CST Series 	Thermistors NCP/PRF Series 

4 Battery

Thermistors
NXR/PRF/PRG Series


5 Traceability

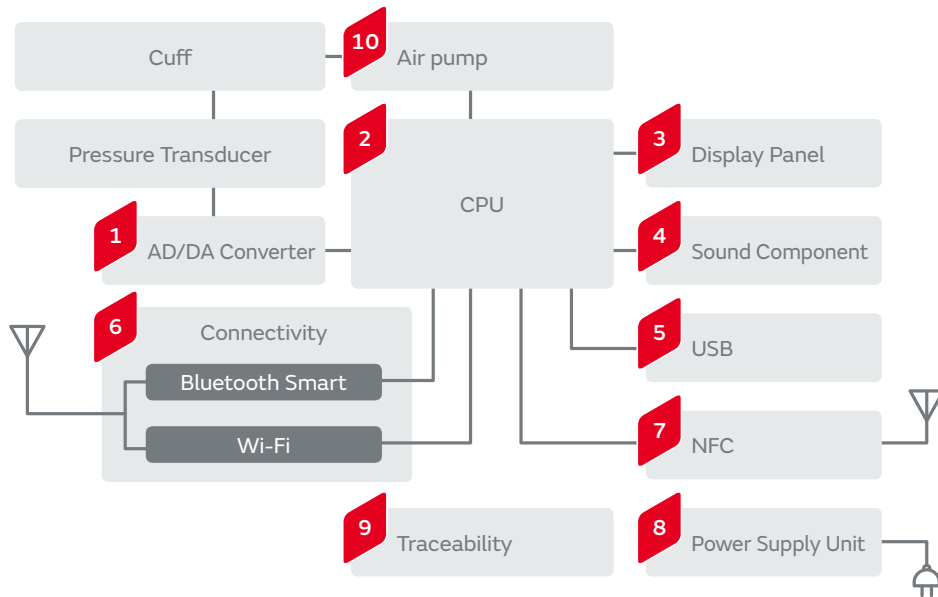
RFID Tag Device (MAGICSTRAP®)
LXMS Series


6 Air pump

Microblowers


General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression	

Blood Pressure Monitor



1 AD/DA Converter

- Chip Ferrite Beads BLM Series
- Thermistors NCP Series

2 CPU

- Ceramic Resonators CERALOCK® CST Series
- Thermistors NCP/NXR Series

4 Sound Component

- Piezoelectric Sounders PKMCS/PKLCs/PKM Series

3 Display Panel

- 3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose NFM Series
- Ceramic Resonators CERALOCK® CST Series
- Chip Ferrite Beads BLM Series
- Crystal Units XRC Series
- Thermistors NCP Series

5 USB

- Ceramic Resonators CERALOCK® CST Series
- Crystal Units XRC Series
- ESD Protection Devices LXES Series
- Thermistors PRG Series

6 Connectivity

- ESD Protection Devices LXES Series
- Bluetooth Smart Modules LBCA/LBMA Series
- Wi-Fi Modules
- Ceramic Resonators CERALOCK® CST Series
- Crystal Units XRC Series
- Thermistors PRG Series

7 NFC

- NFC Antennas FLAN Series
- Crystal Units XRC Series
- Chip Ferrite Beads BLM Series
- Chip Inductors (Chip Coils) LQW18C/LQM18J Series
- ESD Protection Devices LXES Series

8 Power Supply Unit

- Thermistors NCP Series
- Thermistors PRF/PRG Series
- Coin Manganese Dioxide Lithium Batteries Standard Type
- Isolated DC-DC Converters for PoE + PD MYBSP Series
- Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series

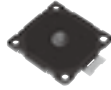
9 Traceability

RFID Tag Device
(MAGICSTRAP®)
LXMS Series



10 Air pump

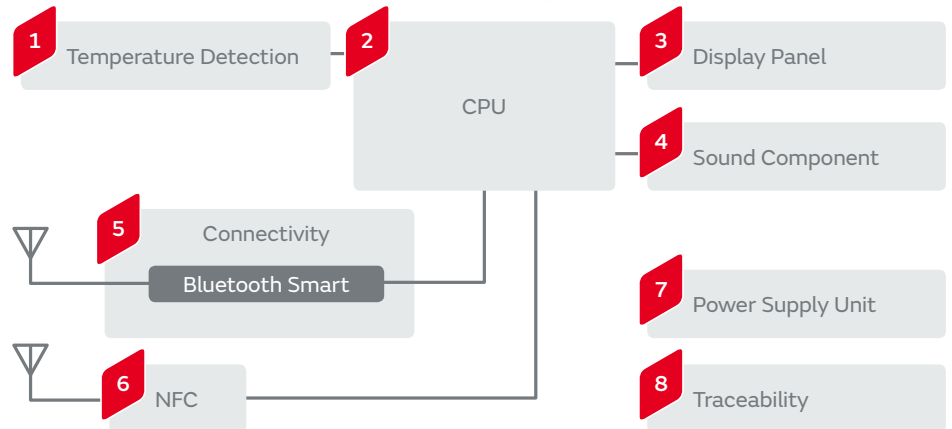
Microblowers



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression

Thermometer



1 Temperature Detection

Thermistors
NXR Series

2 CPU

Ceramic Resonators CERALOCK®
CST Series

3 Display Panel

Thermistors
NCP Series

4 Sound Component

Piezoelectric Sounders
PKLCS/PKMCS Series

5 Connectivity

Bluetooth Modules
LBCA/LBMA Series

Crystal Units
XRC Series

6 NFC

NFC Antennas
FLAN Series

Crystal Units
XRC Series

Chip Ferrite Beads
BLM Series

Chip Inductors (Chip Coils)
LQW18C/LQM18J Series

ESD Protection Devices
LXES Series

7 Power Supply Unit

Coin Manganese Dioxide
Lithium Batteries
Standard Type

Alkaline Manganese
Batteries

8 Traceability

RFID Tag Device
(MAGICSTRAP®)
LXMS Series

General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
	Microwave Absorbers	EA Series	Noise Suppression

Blood Glucose Meter



1 AD/DA Converter

- Chip Ferrite Beads
BLM Series
- Thermistors
NCP Series

2 CPU

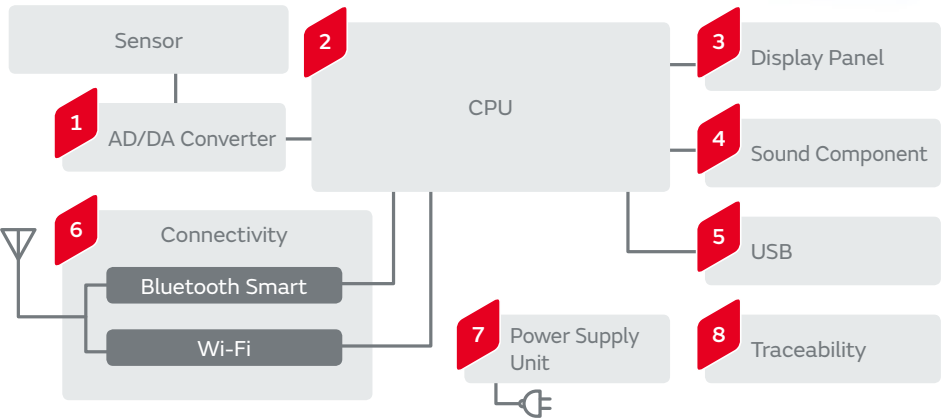
- Ceramic Resonators CERALOCK®
CST Series
- Thermistors
NCP/NXR Series

4 Sound Component

- Piezoelectric Sounders
PKLCS/PKMCS Series

6 Connectivity

- Bluetooth Smart Modules
LBMA/LBMA Series
- Wi-Fi Modules
- Crystal Units
XRC Series
- Thermistors
PRG Series



3 Display Panel

- 3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose
NFM Series
- Chip Ferrite Beads
BLM Series
- Thermistors
NCP Series
- Ceramic Resonators CERALOCK®
CST Series
- Crystal Units
XRC Series

5 USB

- Ceramic Resonators CERALOCK®
CST Series
- Crystal Units
XRC Series
- Thermistors
PRG Series

7 Power Supply Unit

- Thermistors
NCP Series
- Thermistors
PRF/PRG Series
- Coin Manganese Dioxide Lithium Batteries
Standard Type
- Isolated DC-DC Converters for PoE + PD
MYBSP Series
- Non-Isolated DC-DC Converters
MYMGK/MYSGK/OKL/MYLSM Series

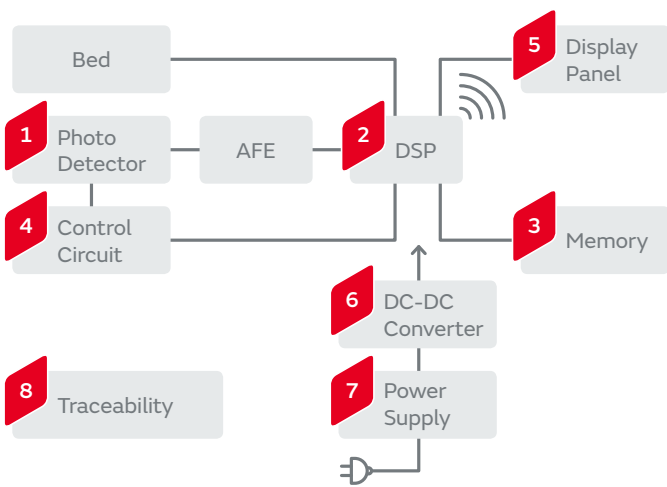
8 Traceability

- RFID Tag Device (MAGICSTRAP®)
LXMS Series

General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression

Diagnostic Imaging Apparatus



1 Photo Detector

Thermistors
NCP/PRF Series

2 DSP

Ceramic Resonators CERALOCK®
CST Series

Crystal Units
XRC Series

3 Memory

Isolated DC-DC Converters
MYB Series

Non-Isolated DC-DC Converters
MYMGK/MYSGK/
OKL/MYLSM Series

4 Control Circuit

Isolated DC-DC Converters
MYB Series

Non-Isolated DC-DC Converters
MYMGK/MYSGK/OKL/MYLSM Series

Ceramic Resonators CERALOCK®
CST Series

5 Display Panel

Metal Terminal Type Multilayer Ceramic Capacitors
for General Purpose
KRM Series

Ceramic Resonators
CERALOCK®
CST Series

Piezoelectric Sounders
PKMCS/PKLCs/PKM Series

Thermistors
PRF/PRG Series

Isolated DC-DC Converters
for PoE + PD
MYBSP Series

6 DC-DC Converter

Metal Terminal Type Multilayer Ceramic Capacitors
for General Purpose
KRM Series

Polymer Aluminum
Electrolytic Capacitors
ECAS/ECNS Series

Thermistors
NCP/PRF Series

7 Power Supply

Chip Multilayer Ceramic Capacitors for General Purpose
GR/GA Series



Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose
DK1 Series



Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose
DE1/DE2 Series



Ceramic Resonators CERALOCK®
CST Series



Thermistors
NCP/PRF Series



8 Traceability

RFID Tag Device (MAGICSTRAP®)
LXMS Series



General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression	

Automotive



Powertrain/Safety

1 ECU

2 AT

3 Auxilliary Motors

4 TPMS

5 ABS/ESC

6 Headlamp

7 EPS

8 IMU

9 Fuel Injection System

1 ECU

Low Temperature Co-fired Ceramics (LTCC) Ceramic Multilayer Substrates LFC



Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series



Chip Multilayer Ceramic Capacitors for Automotive GCM Series



Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series



AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCG Series



Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCB Series



150°C/175°C/200°C Operation Leaded MLCC for Automotive RH Series



Ceramic Resonators CERALOCK® CST Series



Crystal Units XRC Series



Accelerometers SCA Series



Gyro Sensors SCC Series



Thermistors PRF/PTG/NCU Series



High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series



High Reliability Common Mode Choke Coils DLW31SH/DLW32SH/DLW43SH/DLW43MH Series



Silicon Capacitors



2 AT

Low Temperature Co-fired Ceramics (LTCC) Ceramic Multilayer Substrates LFC



Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series



Ceramic Resonators CERALOCK® CST Series



Crystal Units XRC Series



Accelerometers SCA Series



Thermistors PRF/PTG/NCU Series



High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series



3 Auxiliary Motors

Low Temperature Co-fired Ceramics (LTCC) Ceramic Multilayer Substrates LFC



Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series



150°C/175°C/200°C Operation Leaded MLCC for Automotive RH Series



Ceramic Resonators CERALOCK® CST Series



Large-current Common Mode Choke Coils PLT10HH/BLT5BP Series



Thermistors PRF/PTG/NCU Series



Crystal Units XRC Series



High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series



4 TPMS

Shock Sensors For Tire Pressure Monitoring System, PKGS Series



Ceramic Filters CERAFIL® SFEFC Series



Ceramic Resonators CERALOCK® CST Series



Crystal Units XRC Series



Pressure Sensor Elements SCB10H Series



Thermistors PRF/NCU Series



Antenna Coils SA3M08 Series



Coin Manganese Dioxide Lithium Batteries Heat-resistant Type



High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series










High Reliability Chip Inductors LQG15HH Series









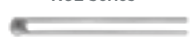







5 ABS/ESC

<p>Low Temperature Co-fired Ceramics (LTCC) Ceramic Multilayer Substrates LFC</p> 	<p>Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series</p> 	<p>Chip Multilayer Ceramic Capacitors for Automotive GCM Series</p> 	<p>Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series</p> 
<p>AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCG Series</p> 	<p>Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCB Series</p> 	<p>Ceramic Resonators CERALOCK® CST Series</p> 	<p>Crystal Units XRC Series</p> 
<p>Accelerometers SCA Series</p> 	<p>Gyro Sensors SCC Series</p> 	<p>Thermistors NCG18/NCU Series</p> 	<p>High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series</p> 

6 Headlamp

<p>Low Temperature Co-fired Ceramics (LTCC) Ceramic Multilayer Substrates LFC</p> 	<p>Chip Multilayer Ceramic Capacitors for Automotive GCM Series</p> 
<p>Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series</p> 	<p>Ceramic Resonators CERALOCK® CST Series</p> 
<p>Crystal Units XRC Series</p> 	<p>Thermistors NCG18/NCU Series</p> 
<p>High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series</p> 	



7 EPS

<p>Low Temperature Co-fired Ceramics (LTCC) Ceramic Multilayer Substrates LFC</p> 	<p>Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series</p> 	<p>Chip Multilayer Ceramic Capacitors for Automotive GCM Series</p> 
<p>Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series</p> 	<p>AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCG Series</p> 	<p>Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCB Series</p> 
<p>Leaded MLCC for Automotive RCE Series</p> 	<p>Ceramic Resonators CERALOCK® CST Series</p> 	<p>Crystal Units XRC Series</p> 
<p>Accelerometers SCA Series</p> 	<p>Gyro Sensors SCC Series</p> 	<p>Thermistors NCG18/NCU Series</p> 
<p>Thermistors PRF/PTG/NCU Series</p> 	<p>High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series</p> 	

8 IMU

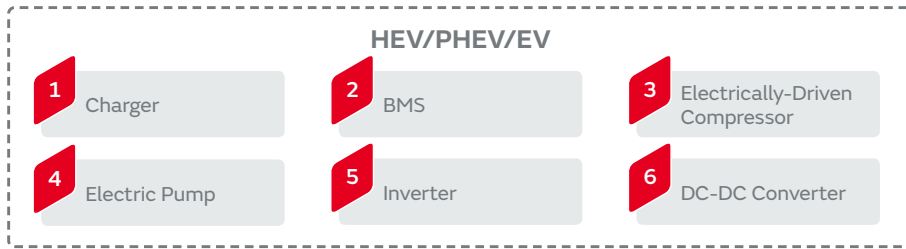
<p>Gyro Sensors SCC Series</p> 	<p>Ceramic Resonators CERALOCK® CST Series</p> 	<p>Crystal Units XRC Series</p> 
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9 Fuel Injection System

<p>Leaded MLCC for Automotive RCF Series</p> 	<p>High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series</p> 
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General Purpose (High Reliability)	Chip Multilayer Ceramic Capacitors for Automotive	GCM Series	Coupling/Decoupling	150°C
	Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive	GCB Series	Coupling/Decoupling	
	Leaded MLCC for Automotive	RCE Series	Noise Suppression/Decoupling	125°C
	150°C/175°C/200°C Operation Leaded MLCC for Automotive	RH Series	Noise Suppression/Decoupling	150°C 175°C 200°C
	Chip Inductors (Chip Coils)	LQH32CH/MDH/DFEH Series	Voltage Conversion	85°C 150°C
	Chip Inductors (Chip Coils)	LQG15HH Series	Impedance Matching/Choke	125°C
	Chip Ferrite Beads	BLM_SH/BLM_BH/BLE_SH Series	Noise Suppression	125°C
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for Automotive/Feed Through Noise Filters	NFM_H/NFE_H Series	Noise Suppression	125°C
	Chip Common Mode Choke Coils	DLW31SH/DLW32SH/DLW43SH/DLW43MH/DLW5ATH/DLW5BTH Series	Common Mode Noise Suppression	125°C

85°C 85°C max. 125°C 125°C max. 150°C 150°C max. 175°C 175°C max. 200°C 200°C max.



1 Charger

Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series	Chip Multilayer Ceramic Capacitors for Automotive GCM Series	Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series	Safety Standard Certified Lead Type Disc Ceramic Capacitors for Automotive DE6 Series
Ceramic Resonators CERALOCK® CST Series	Crystal Units XRC Series	Large-current Common Mode Choke Coils PLT10HH/BLT5BP Series	Thermistors PRF/PTG/NCU Series
			High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series

2 BMS

Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series	Chip Multilayer Ceramic Capacitors for Automotive GCM Series
Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series	AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCG Series
Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCB Series	Ceramic Resonators CERALOCK® CST Series
Crystal Units XRC Series	Thermistors PRF/PTG/NCU Series
	High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series












3 Electrically-Driven Compressor

Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series	Chip Multilayer Ceramic Capacitors for Automotive GCM Series
Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series	AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCG Series
Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCB Series	Thermistors PRF/PTG/NCU Series
Ceramic Resonators CERALOCK® CST Series	Crystal Units XRC Series
	High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series











4 Electric Pump

Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series	Chip Multilayer Ceramic Capacitors for Automotive GCM Series	Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series	AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCG Series	Low Temperature Co-fired Ceramics (LTCC) Ceramic Multilayer Substrates LFC
Large-current Common Mode Choke Coils PLT10HH/BLT5BP Series	Thermistors PRF/PTG/NCU Series	Ceramic Resonators CERALOCK® CST Series	Crystal Units XRC Series	High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series

5 Inverter

<p>Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series</p> 	<p>Chip Multilayer Ceramic Capacitors for Automotive GCM Series</p> 	<p>Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series</p> 	<p>AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCG Series</p> 
<p>Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCB Series</p> 	<p>150°C/175°C/200°C Operation Leaded MLCC for Automotive RH Series</p> 	<p>Large-current Common Mode Choke Coils PLT10HH/BLT5BP Series</p> 	
<p>Thermistors PRF/PTG/NCU Series</p> 	<p>Ceramic Resonators CERALOCK® CST Series</p> 	<p>Crystal Units XRC Series</p> 	<p>High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series</p> 

6 DC-DC Converter

<p>Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series</p> 	<p>Chip Multilayer Ceramic Capacitors for Automotive GCM Series</p> 	<p>Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series</p> 	<p>AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCG Series</p> 
<p>Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCB Series</p> 	<p>Ceramic Resonators CERALOCK® CST Series</p> 	<p>Crystal Units XRC Series</p> 	
<p>Large-current Common Mode Choke Coils PLT10HH/BLT5BP Series</p> 	<p>Thermistors PRF/PTG/NCU Series</p> 	<p>High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series</p> 	

General Purpose	AEC-Q 200 Compliant Chip Multilayer Ceramic Capacitors for Infotainment	GRT Series	Coupling/Decoupling
	Chip Inductors (Chip Coils)	LQW Series	Matching/High Frequency Choke
	Chip Inductors (Chip Coils)	LQM/LQH/DEF Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	EMI Suppression Filters EMIFIL®	NFL/NFE Series	Noise Suppression
	Chip Common Mode Choke Coils	DLW Series	Common Mode Noise Suppression

General Purpose (High Reliability)	Chip Multilayer Ceramic Capacitors for Automotive	GCM Series	Coupling/Decoupling	150°C
	Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive	GCB Series	Coupling/Decoupling	
	Leaded MLCC for Automotive	RCE Series	Noise Suppression/Decoupling	125°C
	150°C/175°C/200°C Operation Leaded MLCC for Automotive	RH Series	Noise Suppression/Decoupling	150°C 175°C 200°C
	Chip Inductors (Chip Coils)	LQH32CH/MDH/DFEH Series	Voltage Conversion	85°C 150°C
	Chip Inductors (Chip Coils)	LQG15HH Series	Impedance Matching/Choke	125°C
	Chip Ferrite Beads	BLM_SH/BLM_BH/BLE_SH Series	Noise Suppression	125°C
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for Automotive/Feed Through Noise Filters	NFM_H/NFE_H Series	Noise Suppression	125°C
Chip Common Mode Choke Coils	DLW31SH/DLW32SH/DLW43SH/DLW43MH/DLW5ATH/DLW5BTH Series	Common Mode Noise Suppression	125°C	

85°C 85°C max. 125°C 125°C max. 150°C 150°C max. 175°C 175°C max. 200°C 200°C max.

Information/Comfort/Accessory

1 Navigation/
Infotainment

2 Remote Keyless Entry

3 Meter/HUD

4 Power Seat/
Power Mirror

5 Parking Assist



1 Navigation/Infotainment

Accelerometers
SCA Series



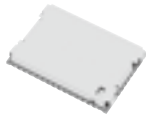
Ceramic Filters CERAFIL®
SFECF Series



Piezoelectric Sounders
PKLCS/PKMCS Series



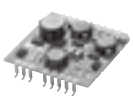
Bluetooth Modules



Wi-Fi Modules



DC-DC Converters



Ceramic Resonators CERALOCK®
CST Series



Crystal Units
XRC Series



Thermistors
PRF/PRG/PTG/NCU Series



Chip Multilayer Diplexers
LFD Series



Chip Multilayer LC Filters
LF Series



Chip Multilayer Hybrid Baluns
LDB/LDM Series



Chip Multilayer Hybrid Couplers
LDC/LDJ Series



Chip Ferrite Beads
BLM Series



2 Remote Keyless Entry

Ceramic Filters CERAFIL®
SFECF Series



Ceramic Resonators CERALOCK®
CST Series



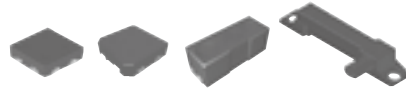
Crystal Units
XRC Series



Piezoelectric Sounders
PKLCS/PKMCS Series



Antenna Coils
SA3D14/SA3D12/SA3M08/STA8121 Series



Coin Manganese Dioxide Lithium Batteries
Standard Type



Chip Inductors (Chip Coils)
LQW/LQP/LQG Series

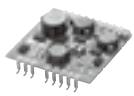


Chip Ferrite Beads
BLM Series



3 Meter/HUD

DC-DC Converters



Ceramic Resonators CERALOCK®
CST Series



Crystal Units
XRC Series



Piezoelectric Sounders
PKM/PKLCS/PKMCS Series



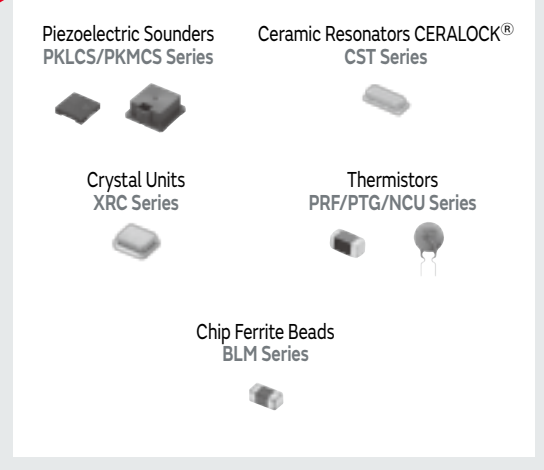
Thermistors
PRF/PTG/NCU Series



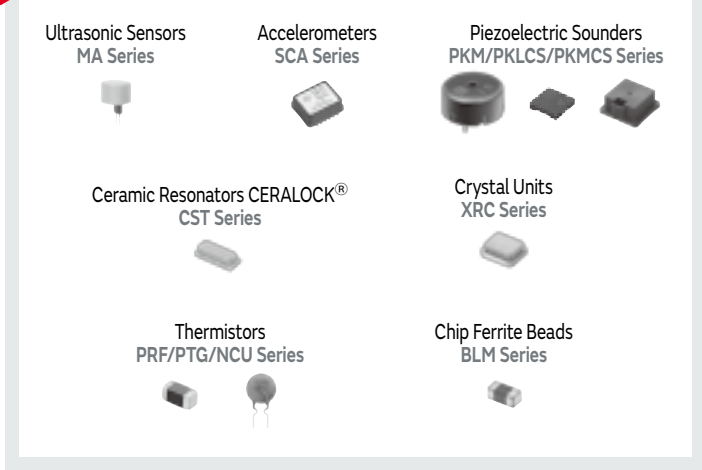
Chip Ferrite Beads
BLM Series



4 Power Seat/Power Mirror



5 Parking Assist



General Purpose	AEC-Q 200 Compliant Chip Multilayer Ceramic Capacitors for Infotainment	GRT Series	Coupling/Decoupling
	Chip Inductors (Chip Coils)	LQW Series	Matching/High Frequency Choke
	Chip Inductors (Chip Coils)	LQM/LQH/DEF Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	EMI Suppression Filters EMIFIL®	NFL/NFE Series	Noise Suppression
	Chip Common Mode Choke Coils	DLW Series	Common Mode Noise Suppression

General Purpose (High Reliability)	Chip Multilayer Ceramic Capacitors for Automotive	GCM Series	Coupling/Decoupling	150°C
	Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive	GCB Series	Coupling/Decoupling	
	Leaded MLCC for Automotive	RCE Series	Noise Suppression/Decoupling	125°C
	150°C/175°C/200°C Operation Leaded MLCC for Automotive	RH Series	Noise Suppression/Decoupling	150°C 175°C 200°C
	Chip Inductors (Chip Coils)	LQH32CH/MDH/DFEH Series	Voltage Conversion	85°C 150°C
	Chip Inductors (Chip Coils)	LQG15HH Series	Impedance Matching/Choke	125°C
	Chip Ferrite Beads	BLM_SH/BLM_BH/BLE_SH Series	Noise Suppression	125°C
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for Automotive/Feed Through Noise Filters	NFM_H/NFE_H Series	Noise Suppression	125°C
Chip Common Mode Choke Coils	DLW31SH/DLW32SH/DLW43SH/DLW43MH/DLW5ATH/DLW5BTH Series	Common Mode Noise Suppression	125°C	

85°C 85°C max. 125°C 125°C max. 150°C 150°C max. 175°C 175°C max. 200°C 200°C max.

Bike/EV Bike

Electromotive

1

Charger/Battery

2

Inverter

3

DC-DC Converter

Electric Installation

4

Accelerometer
for Fuel Cut

5

Headlamp

6

Fuel Injection System



1 Charger/Battery

Lithium Ion
Storage Modules



Metal Terminal Type Multilayer
Ceramic Capacitors for Automotive
KCM Series



Chip Multilayer Ceramic
Capacitors for Automotive
GCM Series



Soft Termination Chip Multilayer
Ceramic Capacitors for Automotive
GCJ Series



Safety Standard Certified
Lead Type Disc Ceramic
Capacitors for Automotive
DE6 Series



Ceramic Resonators
CERALOCK®
CST Series



Crystal Units
XRC Series



Large-current Common Mode Choke Coils
PLT10HH/BLT5BP Series



Thermistors
PRF/PTG/NCU Series



High Reliability Chip Ferrite Beads
BLM_SH1/BH1/TH1/JH1 Series



2 Inverter

Chip Multilayer Ceramic
Capacitors for Automotive
GCM Series



Soft Termination Chip Multilayer
Ceramic Capacitors for Automotive
GCJ Series



AgPd Termination Conductive
Glue Mounting Chip Multilayer
Ceramic Capacitors for Automotive
GCG Series



Ni Plating + Pd Plating Termination
Conductive Glue Mounting Chip Multilayer
Ceramic Capacitors for Automotive
GCB Series



150°C/175°C/200°C Operation
Leaded MLCC for Automotive
RH Series



Large-current
Common Mode Choke Coils
PLT10HH/BLT5BP Series



Thermistors
PRF/PTG/NCU Series



Ceramic Resonators CERALOCK®
CST Series



Crystal Units
XRC Series



High Reliability Chip Ferrite Beads
BLM_SH1/BH1/TH1/JH1 Series



3 DC-DC Converter

DC-DC Converters
MYPMA Series



Metal Terminal Type Multilayer
Ceramic Capacitors for Automotive
KCM Series



Chip Multilayer Ceramic
Capacitors for Automotive
GCM Series



Soft Termination Chip Multilayer
Ceramic Capacitors for Automotive
GCJ Series



AgPd Termination Conductive
Glue Mounting Chip Multilayer
Ceramic Capacitors for Automotive
GCG Series



Ni Plating + Pd Plating Termination
Conductive Glue Mounting Chip Multilayer
Ceramic Capacitors for Automotive
GCB Series



Ceramic Resonators CERALOCK®
CST Series



Crystal Units
XRC Series



Large-current Common Mode Choke Coils
PLT10HH/BLT5BP Series












Thermistors
PRF/PTG/NCU Series



High Reliability Chip Ferrite Beads
BLM_SH1/BH1/TH1/JH1 Series













4 Accelerometer for Fuel Cut

<p>Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series</p> 	<p>Chip Multilayer Ceramic Capacitors for Automotive GCM Series</p> 	<p>Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series</p> 
<p>AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCG Series</p> 	<p>Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCB Series</p> 	<p>Ceramic Resonators CERALOCK® CST Series</p> 
<p>Crystal Units XRC Series</p> 	<p>Accelerometers SCA Series</p> 	<p>Gyro Sensors SCC Series</p> 
	<p>Thermistors NCG18/NCU Series</p> 	<p>High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series</p> 

5 Headlamp

<p>Chip Multilayer Ceramic Capacitors for Automotive GCM Series</p> 	
<p>Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series</p> 	
<p>Ceramic Resonators CERALOCK® CST Series</p> 	<p>Crystal Units XRC Series</p> 
<p>Thermistors NCG18/NCU Series</p> 	<p>High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series</p> 

6 Fuel Injection System

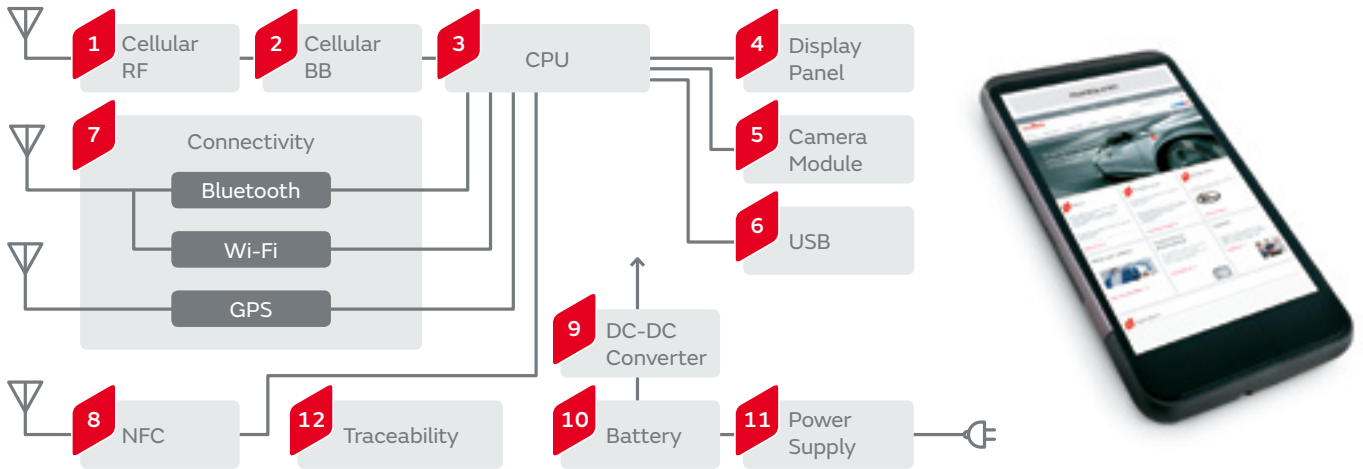
<p>Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series</p> 	<p>Chip Multilayer Ceramic Capacitors for Automotive GCM Series</p> 
<p>Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series</p> 	<p>AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCG Series</p> 
<p>Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCB Series</p> 	<p>Ceramic Resonators CERALOCK® CST Series</p> 
<p>Crystal Units XRC Series</p> 	<p>Thermistors PRF/PTG/NCU Series</p> 
<p>High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series</p> 	<p>Accelerometers SCA Series</p> 

General Purpose	AEC-Q 200 Compliant Chip Multilayer Ceramic Capacitors for Infotainment	GRT Series	Coupling/Decoupling
	Chip Inductors (Chip Coils)	LQW Series	Matching/High Frequency Choke
	Chip Inductors (Chip Coils)	LQM/LQH/DEF Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	EMI Suppression Filters EMIFIL®	NFL/NFE Series	Noise Suppression
	Chip Common Mode Choke Coils	DLW Series	Common Mode Noise Suppression

General Purpose (High Reliability)	Chip Multilayer Ceramic Capacitors for Automotive	GCM Series	Coupling/Decoupling	150°C
	Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive	GCB Series	Coupling/Decoupling	
	Leaded MLCC for Automotive	RCE Series	Noise Suppression/Decoupling	125°C
	150°C/175°C/200°C Operation Leaded MLCC for Automotive	RH Series	Noise Suppression/Decoupling	150°C 175°C 200°C
	Chip Inductors (Chip Coils)	LQH32CH/MDH/DFEH Series	Voltage Conversion	85°C 150°C
	Chip Inductors (Chip Coils)	LQG15HH Series	Impedance Matching/Choke	125°C
	Chip Ferrite Beads	BLM_SH/BLM_BH/BLE_SH Series	Noise Suppression	125°C
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for Automotive/Feed Through Noise Filters	NFM_H/NFE_H Series	Noise Suppression	125°C
Chip Common Mode Choke Coils	DLW31SH/DLW32SH/DLW43SH/DLW43MH/DLW5ATH/DLW5BTH Series	Common Mode Noise Suppression	125°C	

85°C 85°C max. 125°C 125°C max. 150°C 150°C max. 175°C 175°C max. 200°C 200°C max.

Smart Phones



1 Cellular RF

SAW Duplexers SAY Series 	SAW Filters SAF Series 	Chip Multilayer LC Filters LF Series 	Chip Multilayer Diplexers LFD Series
Chip Multilayer Hybrid Baluns LDB/LDM Series 	Chip Multilayer Hybrid Dividers LDD Series 	Chip Multilayer Hybrid Couplers LDC/LDJ Series 	
High-Frequency Matching Transformers SMST Series 	Microwave Coaxial Cable Connectors Microwave Coaxial Connectors with Switch 	Chip Inductors (Chip Coils) LQW/LQP Series 	
ESD Protection Devices LXES Series 	Band-Selectable Phase Adjustment Device (B-SPADE) 	Thermistors NCP/PRF Series 	

2 Cellular BB

3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose NFM Series
Chip Common Mode Choke Coils/ Common Mode Noise Filters/ LC Trap Filters DLW/DLP/NFP/BLF/LQZ Series
Chip Common Mode Choke Coils/ Common Mode Noise Filters DLW/DLP/NFP Series
Frequency Specified Noise Filters BLF Series
LC Trap Filters LQZ Series
Thermistors NCP/PRF Series

3 CPU

Crystal Units XRC Series 	Chip Ferrite Beads BLM Series 	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose NFM Series
Thermistors NCP/PRF Series 	Silicon Capacitors 	

4 Display Panel


Ceramic Resonators CERALOCK® CST Series 	EMI Suppression Filters EMIFIL® NFA Series
ESD Protection Devices LXES Series 	Thermistors NCP/PRF Series
Chip Common Mode Choke Coils/ Noise Filters DLW/DLP/NFP Series 	

5 Camera Module


Chip Multilayer Ceramic Capacitors for Camera Flash Circuit Only GR7 Series 	Chip Ferrite Beads BLM Series
ESD Protection Devices LXES Series 	Low Temperature Co-fired Ceramics (LTCC) Ceramic Multilayer Substrates LFC
Thermistors NCP/PRF Series 	

6 USB


Chip Common Mode Choke Coils/
Noise Filters
DLW/DLP/NFP/DLM Series




Chip Ferrite Beads
BLM Series



ESD Protection Devices
LXES Series



Thermistors
NCP/PRF Series



7 Connectivity

Chip Multilayer Diplexers
LFD Series



Chip Multilayer Hybrid Couplers
LDC/LDJ Series




Bluetooth Modules



Wi-Fi Modules



Bluetooth - Wi-Fi Combo Modules



SAW Filters
SAF Series




Chip Multilayer LC Filters
LF Series



Chip Multilayer LC Filters
LF Series




Microwave Coaxial Cable Connectors
Microwave Coaxial Connectors with Switch



ESD Protection Devices
LXES Series



Thermistors
NCP/PRF Series




Crystal Units
XRC Series




8 NFC


NFC Antennas
FLAN Series



Crystal Units
XRC Series




Chip Ferrite Beads
BLM Series




Chip Inductors (Chip Coils)
LQW18C/LQM18J Series



Variable Capacitors
LXRW Series




ESD Protection Devices
LXES Series




9 DC-DC Converter


Chip Multilayer Ceramic Capacitors
on Interposer Board for General Purpose
ZRB Series




Metal Terminal Type Multilayer Ceramic Capacitors
for General Purpose
KRM Series



Polymer Aluminum
Electrolytic Capacitors
ECAS/ECNS Series




Thermistors
NCP/PRF Series



10 Battery

Thermistors
NCP/PRF/PRG Series




12 Traceability

RFID Tag Device
(MAGICSTRAP®)
LXMS Series




11 Power Supply


Chip Multilayer Ceramic Capacitors
for General Purpose
GR/GA Series




Safety Standard Certified Resin
Molding SMD Type Ceramic
Capacitors for General Purpose
DK1 Series



Safety Standard Certified Lead Type Disc
Ceramic Capacitors for General Purpose
DE1/DE2 Series



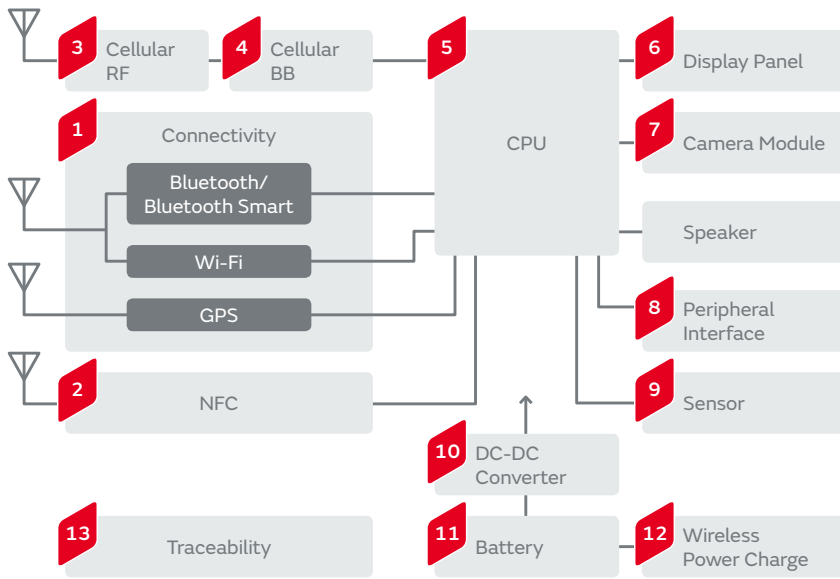
Chip Inductors (Chip Coils)
LQM/LQH/DFE Series



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM/NFZ Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression

Wearable Devices



1 Connectivity

Bluetooth Modules	Wi-Fi Modules	Bluetooth - Wi-Fi Combo Modules	SAW Filters SAF Series	Chip Multilayer LC Filters LF Series
Chip Multilayer Hybrid Baluns LDB/LDM Series	Chip Multilayer Diplexers LFD Series	Chip Multilayer Hybrid Couplers LDC/LDJ Series	Microwave Coaxial Cable Connectors	Microwave Coaxial Connectors with Switch
Crystal Units XRC Series	ESD Protection Devices LXES Series	Thermistors NCP/PRF Series		

2 NFC

NFC Antennas FLAN Series	Crystal Units XRC Series	Chip Inductors (Chip Coils) LQW18C/LQM18J Series	Variable Capacitors LXRW Series	ESD Protection Devices LXES Series
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3 Cellular RF

Chip Multilayer Diplexers LFD Series	SAW Duplexers SAY Series	SAW Filters SAF Series	Chip Multilayer LC Filters LF Series
Chip Multilayer Hybrid Baluns LDB/LDM Series	Chip Multilayer Hybrid Dividers LDD Series	Chip Multilayer Hybrid Couplers LDC/LDJ Series	
High-Frequency Matching Transformers SMST Series	Microwave Coaxial Cable Connectors	ESD Protection Devices LXES Series	
Band-Selectable Phase Adjustment Device (B-SPADE)	Microwave Coaxial Connectors with Switch	Thermistors NCP/PRF Series	

4 Cellular BB

Thermistors NCP/PRF Series

5 CPU

Crystal Units XRC Series	Thermistors NCP/PRF Series
Silicon Capacitors	

6 Display Panel

Ceramic Resonators CERALOCK®
CST Series



Crystal Units
XRC Series



ESD Protection Devices
LXES Series



Thermistors
NCP/PRF Series



7 Camera Module

Chip Multilayer Ceramic Capacitors
for Camera Flash Circuit Only
GR7 Series



ESD Protection Devices
LXES Series



Thermistors
NCP/PRF Series



8 Peripheral Interface

Ceramic Resonators CERALOCK®
CST Series



Crystal Units
XRC Series



Chip Common Mode Choke Coils/
Noise Filters
DLW/DLP/NFP/DLM Series



ESD Protection Devices
LXES Series



Thermistors
NCP/PRF Series



9 Sensor

Thermistors
NCP/PRF Series



10 DC-DC Converter

Chip Multilayer Ceramic Capacitors
on Interposer Board
for General Purpose
ZRB Series



Metal Terminal Type
Multilayer Ceramic Capacitors
for General Purpose
KRM Series



Polymer Aluminum
Electrolytic Capacitors
ECAS/ECNS Series



Thermistors
NCP Series



11 Battery

Thermistors
NCP/PRF/PRG Series



Coin Manganese Dioxide
Lithium Batteries
Standard Type



12 Wireless Power Charge

LW Reversed Low ESL Chip
Multilayer Ceramic Capacitors
for General Purpose
LLL Series



Thermistors
NCP/PRF Series



13 Traceability

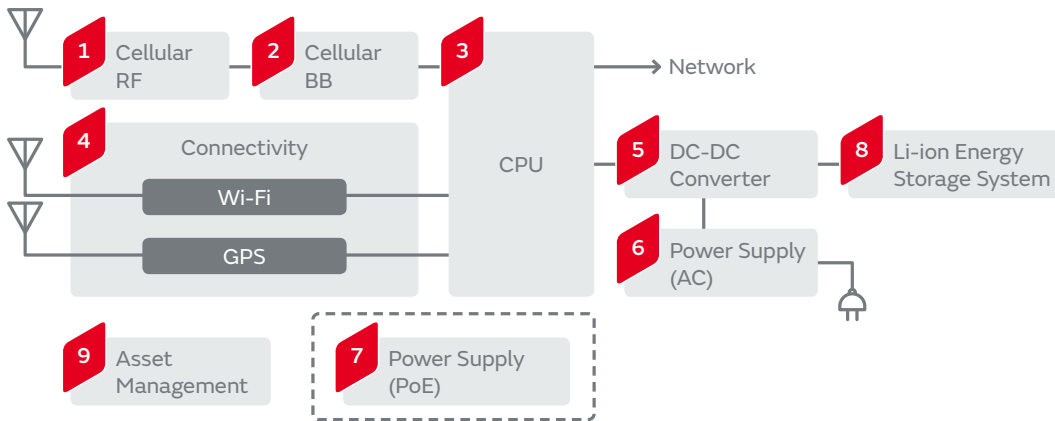
RFID Tag Device
(MAGICSTRAP®)
LXMS Series



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM/NFZ Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression
Piezoelectric Sounders	PKLCS/PKMCS Series	Sound Component

Base Stations



1 Cellular RF

<p>Chip Multilayer Diplexers LFD Series</p>	<p>Chip Multilayer LC Filters LF Series</p>	<p>Chip Multilayer Hybrid Baluns LDB/LDM Series</p>
<p>Chip Multilayer Hybrid Couplers LDC/LDJ Series</p>	<p>Chip Inductors (Chip Coils) LQW/LQP/LQG Series</p>	<p>ESD Protection Devices LXES Series</p>
<p>Thermistors PRF Series</p>	<p>Precision TCXO XTCLH/XNCLH Series</p>	<p>Silicon Capacitors</p>

2 Cellular BB

<p>3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose NFM Series</p>	
<p>Chip Common Mode Choke Coils/ Noise Filters DLW/DLP/NFP Series</p>	
<p>Thermistors PRF Series</p>	<p>Precision TCXO XTCLH/XNCLH Series</p>

3 CPU

<p>Crystal Units XRC Series</p>
<p>Chip Ferrite Beads BLM Series</p>
<p>3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose NFM Series</p>
<p>Thermistors PRF Series</p>

4 Connectivity


<p>Wi-Fi Modules</p>	<p>Chip Multilayer LC Filters LF Series</p>	<p>Chip Multilayer Hybrid Baluns LDB/LDM Series</p>	<p>Chip Multilayer Diplexers LFD Series</p>
<p>Chip Multilayer Hybrid Couplers LDC/LDJ Series</p>	<p>ESD Protection Devices LXES Series</p>	<p>Thermistors PRF Series</p>	<p>Crystal Units XRC Series</p>

5 DC-DC Converter


<p>Isolated DC-DC Converters MYB Series</p>	<p>Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series</p>	<p>Metal Terminal Type Multilayer Ceramic Capacitors for General Purpose KRM Series</p>
<p>Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series</p>		<p>Thermistors PRF Series</p>

6 Power Supply (AC)


Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series




Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series



Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series




Chip Inductors (Chip Coils) LQM/LQH/DFE Series




7 Power Supply (PoE)

Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series




Metal Terminal Type Multilayer Ceramic Capacitors for General Purpose KRM Series



Crystal Units XRC Series



Chip Inductors (Chip Coils) LQM/LQH/DFE Series




Isolated DC-DC Converters for PoE + PD MYBSP Series




8 Li-ion Energy Storage System


Energy Storage Module Model IJ1101M Series



BMU (Battery Management Unit) IJ8101C Series




BMU-HUB IJ1101K Series



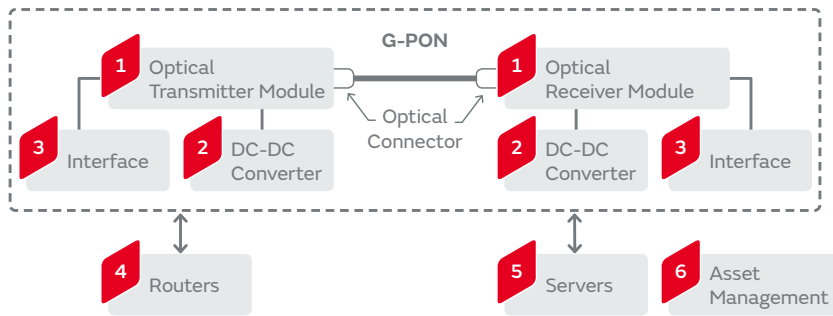
9 Asset Management

RFID Tag Device (MAGICSTRAP®) LXMS Series



General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
	Microwave Absorbers	EA Series	Noise Suppression
	Coin Manganese Dioxide Lithium Batteries	Standard Type/Heat-resistant Type	Battery Backup

G-PON



1 Optical Transmitter Module/Optical Receiver Module

Wire Bonding Mount Multilayer Microchip Capacitors for General Purpose
GMA Series



Wire Bonding/AuSn Soldering Mount Chip Multilayer Ceramic Capacitors for General Purpose
GMD Series



Single Layer Microchip Capacitors
CLB Series



Thin Film Circuit Substrate RUCYT®
RUCYT Series



Silicon Capacitors



2 DC-DC Converter

Isolated DC-DC Converters
MYB Series



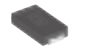
Non-Isolated DC-DC Converters
MYMGK/MYSGK/OKL/MYLSM Series



Isolated DC-DC Converters for PoE + PD
MYBSP Series



Polymer Aluminum Electrolytic Capacitors
ECAS/ECNS Series

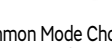


Thermistors
PRF Series

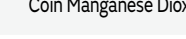
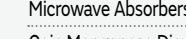
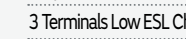
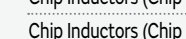
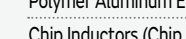
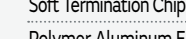
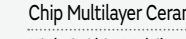
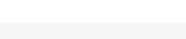
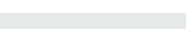
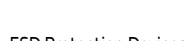


3 Interface

Low ESL Chip Multilayer Ceramic Capacitors for General Purpose
LLL/LLA/LLM Series



Chip Common Mode Choke Coils/ Noise Filters
DLW/DLP/NFP/DLM Series



4 Routers

Low ESL Chip Multilayer Ceramic Capacitors for General Purpose
LLL/LLA/LLM Series



Chip Multilayer Ceramic Capacitors for General Purpose
GR/GA Series



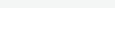
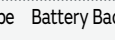
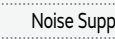
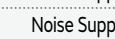
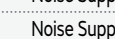
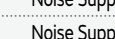
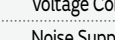
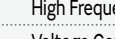
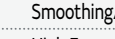
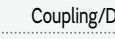
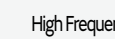
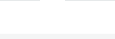
Wire Bonding Mount Multilayer Microchip Capacitors for General Purpose
GMA Series



Wire Bonding/AuSn Soldering Mount Chip Multilayer Ceramic Capacitors for General Purpose
GMD Series



Crystal Units
XRC Series



5 Servers

Polymer Aluminum Electrolytic Capacitors
ECAS/ECNS Series

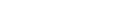
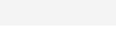
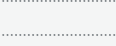
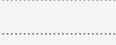
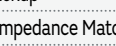
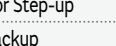
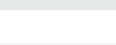


Crystal Units
XRC Series



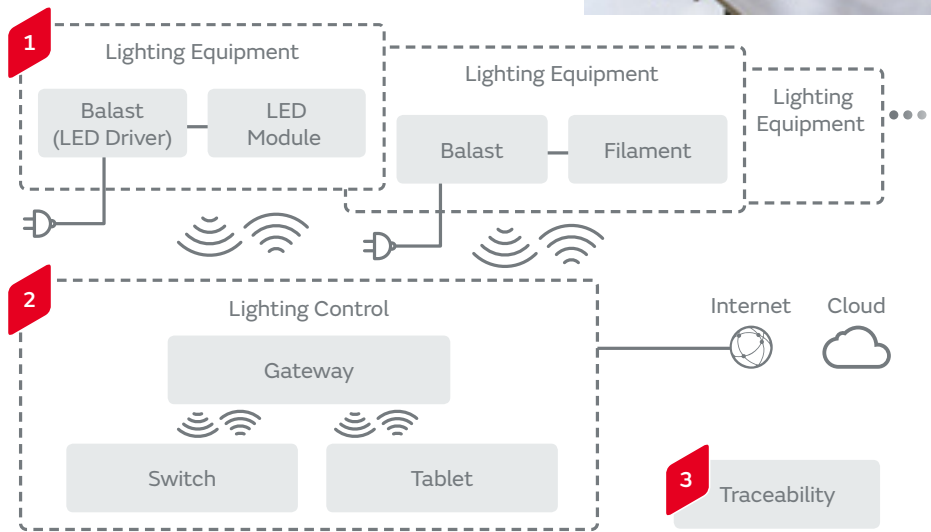
6 Asset Management

RFID Tag Device (MAGICSTRAP®)
LXMS Series



Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression
Coin Manganese Dioxide Lithium Batteries	Standard Type/Heat-resistant Type	Battery Backup

Lighting



1 Lighting Equipment

Ballast for LED Lighting



Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series



Wi-Fi Modules



Thermistors NCP/PRF/PRG/PTG Series



Microwave Coaxial Cable Connectors



Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series



Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series



LPWA Modules



Piezoelectric Sounders PKLCS/PKMCS Series



Microwave Coaxial Connectors with Switch



2 Lighting Control

Wi-Fi Modules



Crystal Units XRC Series



Microwave Coaxial Cable Connectors



LPWA Modules



Ceramic Resonators CERALOCK® CST Series



Microwave Coaxial Connectors with Switch



Pyroelectric Infrared Sensors IRA Series



Isolated DC-DC Converters for PoE + PD MYBSP Series



3 Traceability

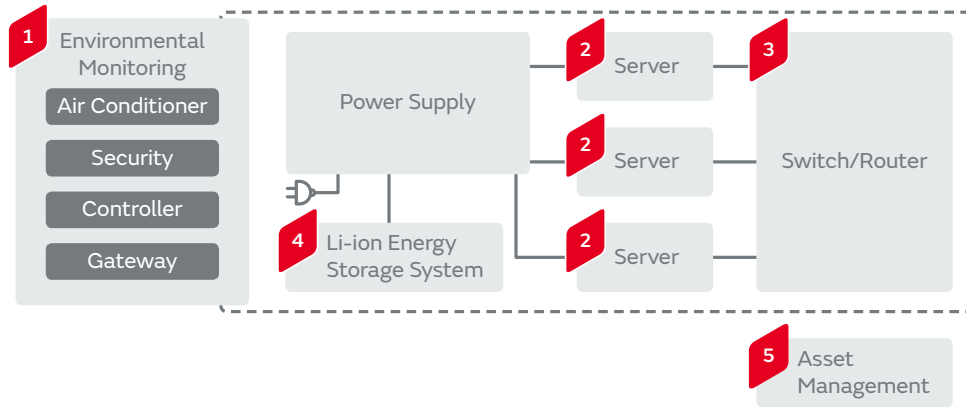
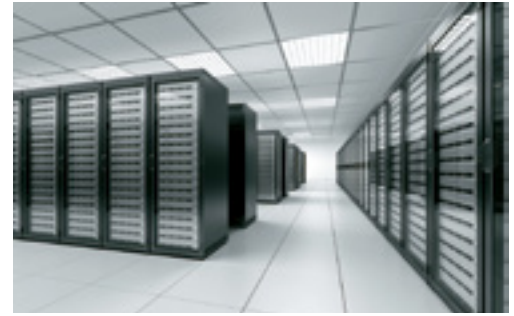
RFID Tag Device (MAGICSTRAP®) LXMS Series







General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM/NFZ Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression

Data Center













1 Environmental Monitoring

<p>Wi-Fi Modules</p> 	<p>LPWA Modules</p> 
<p>Magnetic Sensors (AMR Sensors) MR Series</p> 	<p>Thermistors NCU Series</p> 

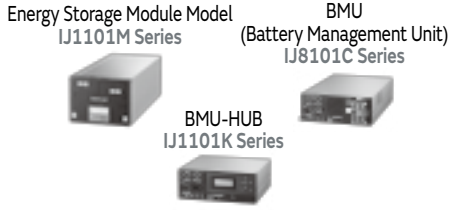
2 Server

<p>Isolated DC-DC Converters MYB Series</p> 	<p>Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series</p> 
<p>Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series</p> 	<p>Crystal Units XRC Series</p> 

3 Switch/Router

<p>Isolated DC-DC Converters MYB Series</p> 	<p>Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series</p> 	<p>Low ESL Chip Multilayer Ceramic Capacitors for General Purpose LLL/LLA/LLM Series</p> 	<p>Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series</p> 	<p>Wire Bonding Mount Multilayer Microchip Capacitors for General Purpose GMA Series</p> 
<p>Wire Bonding/AuSn Soldering Mount Chip Multilayer Ceramic Capacitors for General Purpose GMD Series</p> 	<p>Chip Common Mode Choke Coils/ Noise Filters DLW/DLP/NFP Series</p> 	<p>Crystal Units XRC Series</p> 	<p>Silicon Capacitors</p> 	<p>Precision TCXO XTCLH/XNCLH Series</p> 

4 Li-ion Energy Storage System



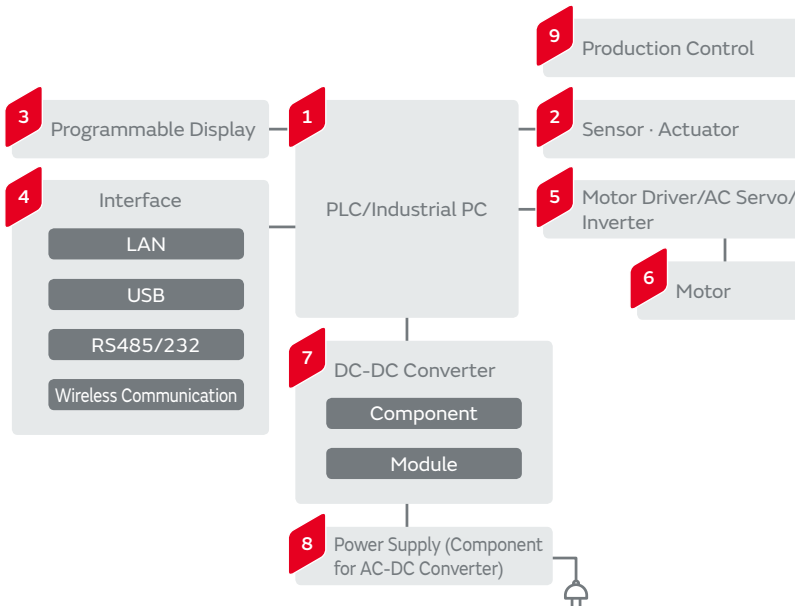
5 Asset Management



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
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Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression
Coin Manganese Dioxide Lithium Batteries	Standard Type/Heat-resistant Type	Battery Backup

Industrial Automation



1 PLC/Industrial PC

<p>Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series</p>	<p>Crystal Units XRC Series</p>	<p>Chip Ferrite Beads BLM Series</p>	<p>3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose NFM Series</p>
<p>Thermistors PRF/NCU Series</p>	<p>Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series</p>	<p>Isolated DC-DC Converters for PoE + PD MYBSP Series</p>	<p>Piezoelectric Sounders PKMCS/PKLCs/PKM Series</p>

2 Sensor · Actuator

<p>Magnetic Sensors (AMR Sensors) MR Series</p>	<p>Accelerometers SCA Series</p>	<p>Gyro sensors SCC Series</p>
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3 Programmable Display

<p>Ceramic Resonators CERALOCK® CST Series</p>	<p>Crystal Units XRC Series</p>	<p>Power Inductors LQH Series</p>	<p>Chip Common Mode Choke Coils/ Noise Filters DLW/DLP/NFP Series</p>
<p>Coin Manganese Dioxide Lithium Batteries Standard Type/Heat-resistant Type</p>	<p>Non-Isolated DC-DC Converters MYMGK/MYSGK/ OKL/MYLSM Series</p>	<p>Isolated DC-DC Converters for PoE + PD MYBSP Series</p>	

4 Interface (LAN · USB · RS485/232 · Wireless Communication)

<p>Wireless Communication Modules Based on the ISA100 Wireless™ Standard Type 1EU</p>	<p>Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series</p>	<p>Crystal Units XRC Series</p>	<p>Chip Common Mode Choke Coils/ Noise Filters DLW/DLP/NFP/DLM Series</p>	<p>ESD Protection Devices LXES Series</p>	<p>Thermistors PRG Series</p>
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5 Motor Driver/AC Servo/Inverter

Chip Multilayer Ceramic Capacitors for General Purpose
GR/GA Series

Crystal Units
XRC Series

Large-current Common Mode Choke Coils
PLT10/PLT5B/DLW5A/DLW5B/UCMH Series

Ceramic Resonators CERALOCK®
CST Series

Thermistors
PRF/PTG Series

6 Motor

Rotary Sensors

7 DC-DC Converter (Module · Component)

Isolated DC-DC Converters
MYB Series

Non-Isolated DC-DC Converters
MYMGK/MYSGK/OKL/MYLSM Series

Metal Terminal Type Multilayer Ceramic Capacitors for General Purpose
KRM Series

Polymer Aluminum Electrolytic Capacitors
ECAS/ECNS Series

Power Inductors
LQH Series

Thermistors
PRF/NCU Series

8 Power Supply (Component for AC-DC Converter)

Chip Multilayer Ceramic Capacitors for General Purpose
GR/GA Series

Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose
DK1 Series

Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose
DK1 Series

Ceramic Resonators CERALOCK®
CST Series

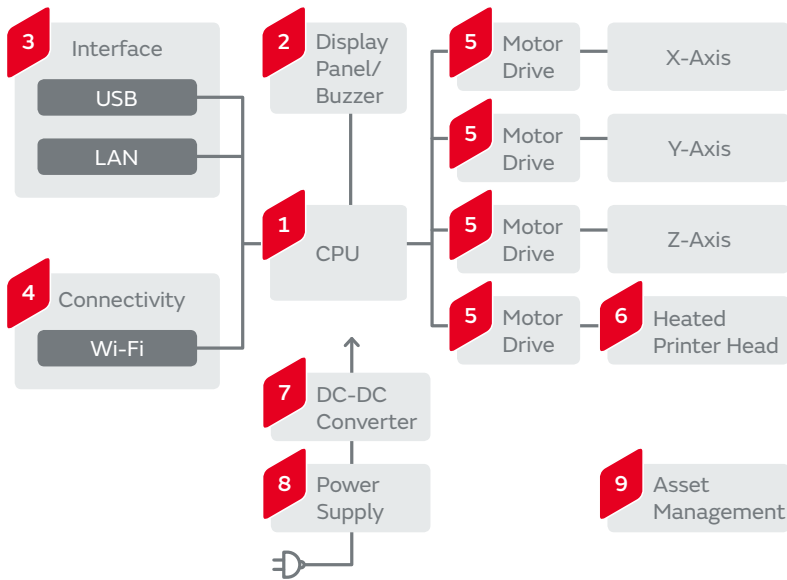
Thermistors
PRF/NCU Series

9 Production Control

RFID Tag Device (MAGICSTRAP®)
LXMS Series

General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
	Microwave Absorbers	EA Series	Noise Suppression
	Piezoelectric Sounders	PKLCS/PKMCS Series	Sound component

3D Printer



1 CPU

Isolated DC-DC Converters
MYB Series



Polymer Aluminum
Electrolytic Capacitors
ECAS/ECNS Series



Non-Isolated DC-DC Converters
MYMGK/MYSGK/OKL/MYLSM Series



Crystal Units
XRC Series



Ceramic Resonators CERALOCK®
CST Series



Thermistors
NCP/PRF Series



2 Display Panel/Buzzer

Ceramic Resonators CERALOCK®
CST Series



Piezoelectric Sounders
PKMCS/PKLCs/PKM Series



3 Interface

Polymer Aluminum
Electrolytic Capacitors
ECAS/ECNS Series



Crystal Units
XRC Series



Chip Common Mode Choke Coils/
Noise Filters
DLW/DLP/NFP/DLM Series



ESD Protection Devices
LXES Series



Thermistors
PRG Series



4 Connectivity

Wi-Fi Modules



Ceramic Resonators CERALOCK®
CST Series



Crystal Units
XRC Series



Chip Inductors (Chip Coils)
LQW/LQP/LQG Series



ESD Protection Devices
LXES Series



5 Motor Drive

Isolated DC-DC Converters
MYB Series



Non-Isolated DC-DC Converters
MYMGK/MYSGK/OKL/MYLSM Series



Chip Multilayer Ceramic
Capacitors for General Purpose
GR/GA Series



Ceramic Resonators CERALOCK®
CST Series



Crystal Units
XRC Series



Large-current Common Mode Choke Coils
PLT10HH/PLT5BPH/DLW5ATN/UCMH Series



Thermistors
PRF/PTG Series



6 Heated Printer Head

Thermistors
NCP/PRF Series



7 DC-DC Converter

Metal Terminal Type Multilayer
Ceramic Capacitors for General Purpose
KRM Series



Polymer Aluminum
Electrolytic Capacitors
ECAS/ECNS Series



Thermistors
NCP/PRF Series



Isolated DC-DC Converters
for PoE + PD
MYBSP Series



8 Power Supply

Chip Multilayer Ceramic Capacitors
for General Purpose
GR/GA Series



Safety Standard Certified Resin
Molding SMD Type Ceramic
Capacitors for General Purpose
DK1 Series



Safety Standard Certified Lead Type Disc
Ceramic Capacitors for General Purpose
DE1/DE2 Series



Thermistors
NCP/PRF/PRG Series



9 Asset Management

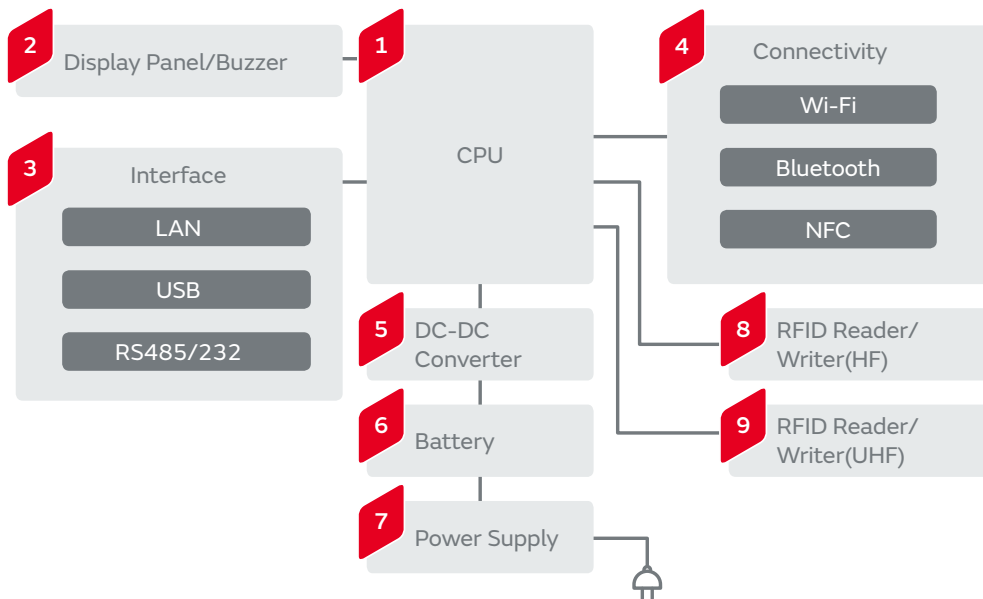
RFID Tag Device (MAGICSTRAP®)
LXMS Series



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM/NFZ Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression

Electronic POS



1 CPU

<p>ESD Protection Devices LXES Series</p>	<p>Ceramic Resonators CERALOCK® CST Series</p>
<p>Non-Isolated DC-DC Converters MYMGK/MYSGK/ OKL/MYLSM Series</p>	<p>Crystal Units XRC Series</p>

2 Digital Panel/Buzzer

<p>Metal Terminal Type Multilayer Ceramic Capacitors for General Purpose KRM Series</p>	<p>Ceramic Resonators CERALOCK® CST Series</p>
<p>Power Inductors LQH Series</p>	<p>Thermistors PRF/PRG Series</p>
<p>Piezoelectric Sounders PKMCS/PKLCS/PKM Series</p>	

3 Interface

<p>Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series</p>	<p>Crystal Units XRC Series</p>
<p>Chip Common Mode Choke Coils/Noise Filters DLW/DLP/NFP/DLM Series</p>	<p>ESD Protection Devices LXES Series</p>
<p>Thermistors PRG Series</p>	<p>Ceramic Resonators CERALOCK® CST Series</p>

4 Connectivity

<p>Bluetooth Modules</p>	<p>Bluetooth - Wi-Fi Combo Modules</p>	<p>Bluetooth Smart Modules</p>
<p>Wi-Fi Modules</p>	<p>NFC Antennas FLAN Series</p>	<p>Crystal Units XRC Series</p>
<p>Microwave Coaxial Cable Connectors</p>		<p>Microwave Coaxial Connectors with Switch</p>

5 DC-DC Converter

Metal Terminal Type
Multilayer Ceramic Capacitors
for General Purpose
KRM Series



Polymer Aluminum
Electrolytic Capacitors
ECAS/ECNS Series



Power Inductors
LQH/DEM/DFE Series



Thermistors
NCP/PRF Series



Isolated DC-DC Converters
for PoE + PD
MYBSP Series



6 Battery

Thermistors
NCP/PRF/PRG Series



7 Power Supply

Chip Multilayer
Ceramic Capacitors
for General Purpose
GR/GA Series



Safety Standard Certified Resin Molding
SMD Type Ceramic Capacitors
for General Purpose
DK1 Series



Safety Standard Certified Lead Type Disc
Ceramic Capacitors for General Purpose
DE1/DE2 Series



Thermistors
NCP/PRF/PRG Series



8 RFID Reader/Writer(HF)

Crystal Units
XRC Series



RFID Reader/Writer(HF)
LXRF Series



9 RFID Reader/Writer(UHF)

Crystal Units
XRC Series



RFID Reader/Writer(UHF)
LXRF Series

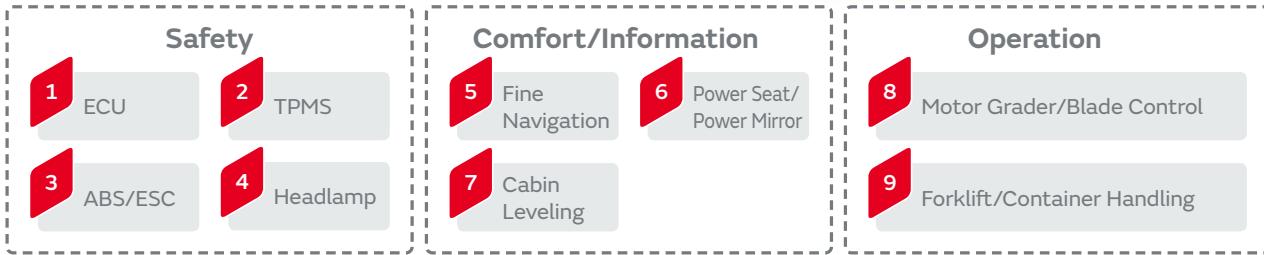


Isolated DC-DC Converters
for PoE + PD
MYBSP Series



General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
	Microwave Absorbers	EA Series	Noise Suppression
	Coin Manganese Dioxide Lithium Batteries	Standard Type	Battery Backup

Heavy Duty Vehicles



Safety

1 ECU

Low Temperature Co-fired Ceramics (LTCC) Ceramic Multilayer Substrates LFC



Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series



Chip Multilayer Ceramic Capacitors for Automotive GCM Series



Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series



AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCG Series



Ceramic Resonators CERALOCK® CST Series



Crystal Units XRC Series



Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCB Series



Leaded MLCC for Automotive RH/RCE Series



Accelerometers SCA Series



Gyro Sensors SCC Series



Thermistors PRF/PTG/NCU Series



High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series



2 TPMS

Shock Sensors For Tire Pressure Monitoring System, PKGS Series



Pressure Sensor Elements SCB10H Series



Thermistors PRF/NCU Series



Ceramic Filters CERAFIL® SFEFCF Series



Ceramic Resonators CERALOCK® CST Series



Crystal Units XRC Series



Coin Manganese Dioxide Lithium Batteries Heat-resistant Type



High Reliability Chip Inductors LQG15HH Series



High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series



3 ABS/ESC

Low Temperature Co-fired Ceramics (LTCC) Ceramic Multilayer Substrates LFC



Metal Terminal Type Multilayer Ceramic Capacitors for Automotive KCM Series



Chip Multilayer Ceramic Capacitors for Automotive GCM Series



Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series



AgPd Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCG Series



Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive GCB Series



Ceramic Resonators CERALOCK® CST Series



Crystal Units XRC Series



Accelerometers SCA Series



Gyro Sensors SCC Series



Thermistors NCG18/NCU Series



High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series



4 Headlamp

Chip Multilayer Ceramic Capacitors for Automotive GCM Series



Soft Termination Chip Multilayer Ceramic Capacitors for Automotive GCJ Series



Ceramic Resonators CERALOCK® CST Series



Crystal Units XRC Series



Thermistors NCG18/NCU Series



Low Temperature Co-fired Ceramics (LTCC) Ceramic Multilayer Substrates LFC



High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series



Comfort/Information

5 Fine Navigation

Accelerometers SCA Series
Gyro Sensors SCC Series
High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series
Ceramic Resonators CERALOCK® CST Series
Crystal Units XRC Series

6 Power Seat/Power Mirror

Piezoelectric Sounders PKLCS/PKMCS Series
Ceramic Resonators CERALOCK® CST Series
Crystal Units XRC Series
Thermistors PRF/PTG/NCU Series
High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series

7 Cabin Leveling

Accelerometers SCA Series
Gyro Sensors SCC Series
Ceramic Resonators CERALOCK® CST Series
Crystal Units XRC Series
High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series

Operation

8 Motor Grader/Blade Control

Accelerometers SCA Series
Gyro Sensors SCC Series
Crystal Units XRC Series
Ceramic Resonators CERALOCK® CST Series
High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series

9 Forklift/Container Handling

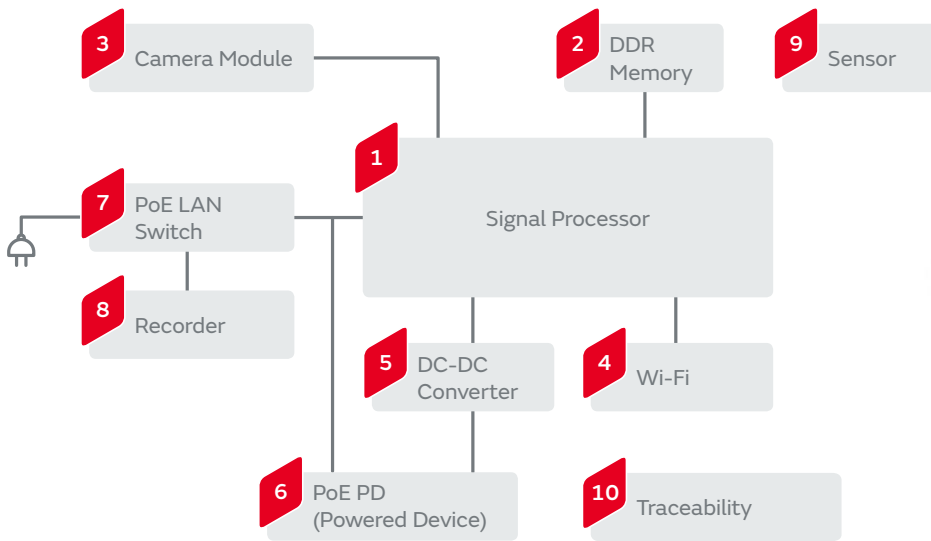
Accelerometers SCA Series
Ceramic Resonators CERALOCK® CST Series
Crystal Units XRC Series
RFID Reader/Writer(UHF) LXR Series
High Reliability Chip Ferrite Beads BLM_SH1/BH1/TH1/JH1 Series

General Purpose	AEC-Q 200 Compliant Chip Multilayer Ceramic Capacitors for Infotainment	GRT Series	Coupling/Decoupling
	Chip Inductors (Chip Coils)	LQW Series	Matching/High Frequency Choke
	Chip Inductors (Chip Coils)	LQM/LQH/DEF Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	EMI Suppression Filters EMIFIL®	NFL/NFE Series	Noise Suppression
	Chip Common Mode Choke Coils	DLW Series	Common Mode Noise Suppression

General Purpose (High Reliability)	Chip Multilayer Ceramic Capacitors for Automotive	GCM Series	Coupling/Decoupling	150°C
	Ni Plating + Pd Plating Termination Conductive Glue Mounting Chip Multilayer Ceramic Capacitors for Automotive	GCB Series	Coupling/Decoupling	
	Leaded MLCC for Automotive	RCE Series	Noise Suppression/Decoupling	125°C
	150°C/175°C/200°C Operation Leaded MLCC for Automotive	RH Series	Noise Suppression/Decoupling	150°C 175°C 200°C
	Chip Inductors (Chip Coils)	LQH32CH/MDH/DFEH Series	Voltage Conversion	85°C 150°C
	Chip Inductors (Chip Coils)	LQG15HH Series	Impedance Matching/Choke	125°C
	Chip Ferrite Beads	BLM_SH/BLM_BH/BLE_SH Series	Noise Suppression	125°C
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for Automotive/Feed Through Noise Filters	NFM_H/NFE_H Series	Noise Suppression	125°C
	Chip Common Mode Choke Coils	DLW31SH/DLW32SH/DLW43SH/DLW43MH/DLW5ATH/DLW5BTH Series	Common Mode Noise Suppression	125°C

85°C 85°C max. 125°C 125°C max. 150°C 150°C max. 175°C 175°C max. 200°C 200°C max.

Security Camera



1 Signal Processor

Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series



Ceramic Resonators CERALOCK® CST Series



Crystal Units XRC Series



3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose NFM Series



Thermistors PRF/NCU Series



2 DDR Memory

Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series



Chip Ferrite Beads BLM Series



Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series



3 Camera Module

Chip Ferrite Beads BLM Series



Isolated DC-DC Converters for PoE + PD MYBSP Series



4 Wi-Fi

Wi-Fi Modules



Chip Inductors (Chip Coils) LQW/LQP/LQG Series



Chip Multilayer LC Filters LF Series



Chip Multilayer Diplexers LFD Series



Chip Multilayer Hybrid Baluns LDB/LDM Series



Chip Multilayer Hybrid Couplers LDC/LDJ Series



Crystal Units XRC Series



5 DC-DC Converter

Metal Terminal Type Multilayer Ceramic Capacitors for General Purpose KRM Series



Power Inductors LQH/DFE Series



Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series



Thermistors PRF/NCU Series



6 PoE PD (Powered Device)

Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series



Thermistors NXRT/PRF/NCU Series










Crystal Units XRC Series



Isolated DC-DC Converters for PoE + PD MYBSP Series



7 PoE LAN Switch


<p>Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series</p> 	<p>Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series</p> 	<p>Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series</p> 	<p>Metal Terminal Type Multilayer Ceramic Capacitors for General Purpose KRM Series</p> 
<p>Crystal Units XRC Series</p> 	<p>Thermistors NXRT/PRF/NCU Series</p> 	<p>Isolated DC-DC Converters for PoE + PD MYBSP Series</p> 	

8 Recorder

<p>Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series</p> 	<p>Ceramic Resonators CERALOCK® CST Series</p> 	<p>Crystal Units XRC Series</p> 	<p>Thermistors PRF/NCU Series</p> 
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9 Sensor

Pyroelectric Infrared Sensors IRA Series



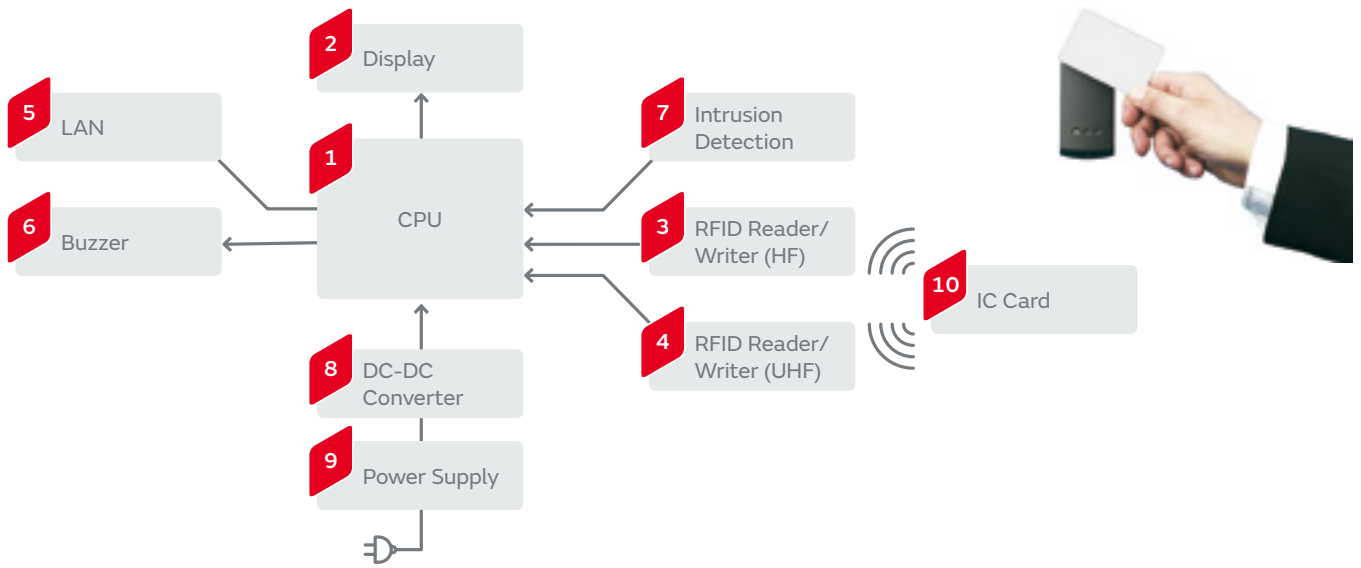
10 Traceability

RFID Tag Device (MAGICSTRAP®) LXMS Series



General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
	Microwave Absorbers	EA Series	Noise Suppression
	Coin Manganese Dioxide Lithium Batteries	Standard Type/Heat-resistant Type	Backup

Entrance and Exit Management System



1 CPU

Non-Isolated DC-DC Converters
MYMGK/MYSGK/OKL/MYLSM Series

Ceramic Resonators CERALOCK®
CST Series

Crystal Units
XRC Series

2 Display

Ceramic Resonators CERALOCK®
CST Series

ESD Protection Devices
LXES Series

Thermistors
NCP/PRF Series

3 RFID Reader/Writer (HF)

Crystal Units
XRC Series

RFID Reader/Writer(HF)
LXRF Series

4 RFID Reader/Writer (UHF)

Crystal Units
XRC Series

RFID Reader/Writer(UHF)
LXRF Series

5 LAN

Polymer Aluminum Electrolytic Capacitors
ECAS/ECNS Series

Crystal Units
XRC Series

ESD Protection Devices
LXES Series

Thermistors
PRG Series

6 Buzzer

Piezoelectric Sounders
PKMCS/PKLCs/PKM Series

7 Intrusion Detection

Pyroelectric Infrared Sensors
IRA Series

Ultrasonic Sensors
MA Series

Magnetic Sensors (AMR Sensors)
MR Series

8 DC-DC Converter

Thermistors
NCP/PRF Series



Polymer Aluminum
Electrolytic Capacitors
ECAS/ECNS Series



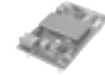
Metal Terminal Type
Multilayer Ceramic Capacitors
for General Purpose
KRM Series



Non-Isolated DC-DC Converters
MYMGK/MYSGK/OKL/MYLSM Series



Isolated DC-DC Converters
for PoE + PD
MYBSP Series



9 Power Supply

Chip Multilayer Ceramic Capacitors
for General Purpose
GR/GA Series



Safety Standard Certified Resin Molding
SMD Type Ceramic Capacitors
for General Purpose
DK1 Series



Safety Standard Certified Lead Type Disc
Ceramic Capacitors for General Purpose
DE1/DE2 Series



Ceramic Resonators CERALOCK®
CST Series

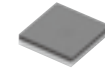


Thermistors
NCP/PRF Series



10 IC Card

RFID Tag Device (MAGICSTRAP®)
LXMS Series



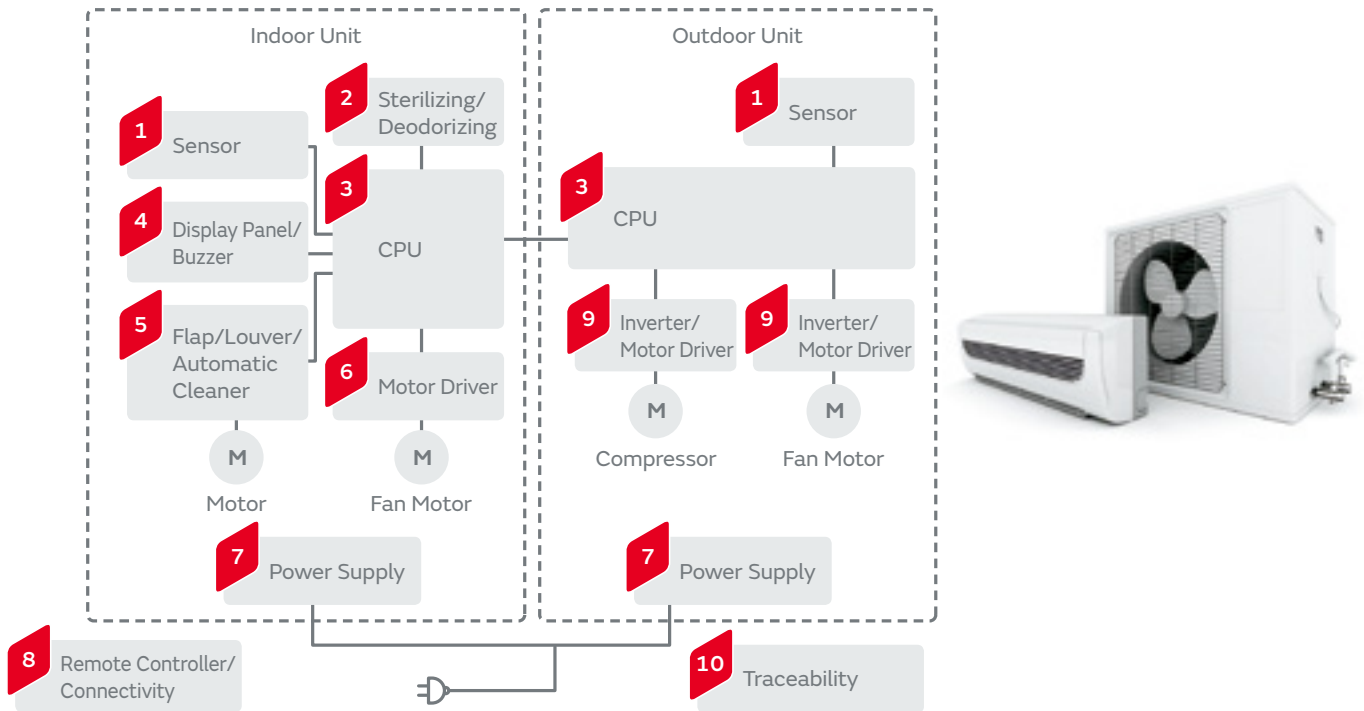
Silicon Capacitors



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression

Air Conditioner



1 Sensor

- Pyroelectric Infrared Sensors IRA Series
- Ultrasonic Sensors MA Series
- Thermistors NCP/NXR/PRF Series

2 Sterilizing/Deodorizing

- Ionizer Modules Ionissimo® MHM300 Series
- Ozonizer Modules Ionissimo® MHM500 Series
- High Voltage Resistors MHR Series

3 CPU

- Ceramic Resonators CERALOCK® CST Series
- Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series

4 Display Panel/Buzzer

- Ceramic Resonators CERALOCK® CST Series
- Piezoelectric Sounders PKMCS/PKLCs/PKM Series

5 Flap/Louver/Automatic Cleaner

- Rotary Position Sensors SV Series

6 Motor Driver

- Thermistors NCP/NXR/PRF Series

7 Power Supply

- Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series
- Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series
- Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series
- Thermistors PTG Series

8 Remote Controller/Connectivity

Bluetooth Modules



Wi-Fi Modules



LPWA Modules



Microwave Coaxial Cable Connectors



Microwave Coaxial Connectors with Switch



Crystal Units
XRC Series



Ceramic Resonators CERALOCK®
CST Series



Piezoelectric Sounders
PKMCS/PKLCs/PKM Series



9 Inverter/Motor Driver

Ceramic Resonators CERALOCK®
CST Series



Thermistors
NCP/NXR/PRF Series



10 Traceability

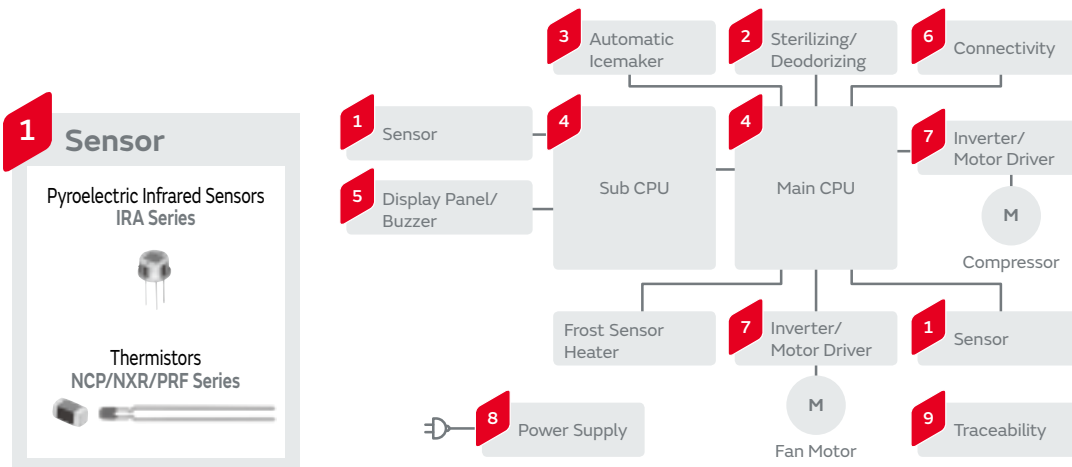
RFID Tag Device (MAGICSTRAP®)
LXMS Series



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM/NFZ Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression

Refrigerator



1 Sensor

Pyroelectric Infrared Sensors
IRA Series

Thermistors
NCP/NXR/PRF Series

2 Sterilizing/Deodorizing

Ionizer Modules
Ionissimo®
MHM300 Series

Ozonizer Modules
Ionissimo®
MHM500 Series

High Voltage Resistors
MHR Series

Microblowers

3 Automatic Icemaker

Microblowers

4 CPU

Ceramic Resonators
CERALOCK®
CST Series

Non-Isolated DC-DC Converters
MYMGK/MYSGK/OKL/MYLSM Series

5 Display Panel/Buzzer

Ceramic Resonators CERALOCK®
CST Series

Piezoelectric Sounders
PKMCS/PKLCs/PKM Series

7 Inverter/Motor Driver

Thermistors
NCP/NXR/PRF Series

Ceramic Resonators
CERALOCK®
CST Series

6 Connectivity

Bluetooth Modules

Wi-Fi Modules

LPWA Modules

Microwave Coaxial
Cable Connectors

Microwave Coaxial
Connectors with Switch

Crystal Units
XRC Series

8 Power Supply

Chip Multilayer
Ceramic Capacitors
for General Purpose
GR/GA Series

Safety Standard Certified Resin
Molding SMD Type Ceramic
Capacitors for General Purpose
DK1 Series

Safety Standard Certified Lead Type Disc
Ceramic Capacitors for General Purpose
DE1/DE2 Series

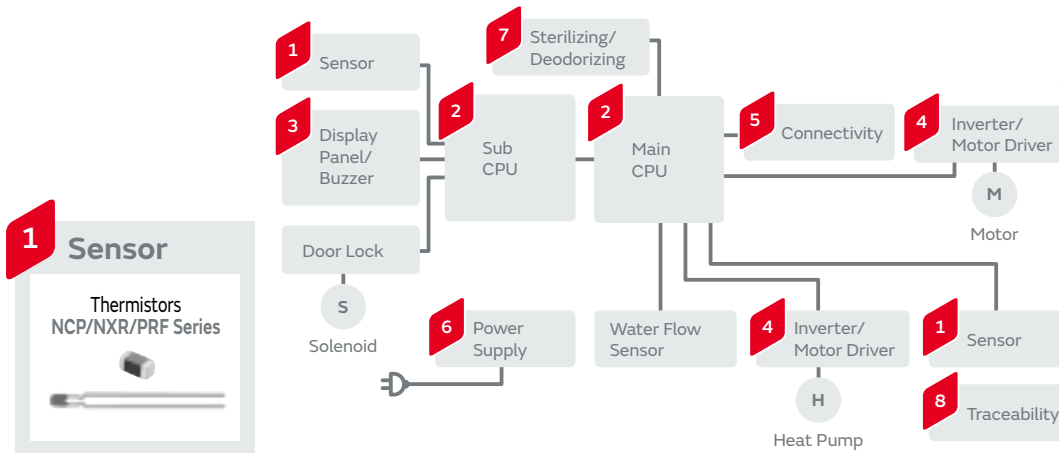
Thermistors
PTG Series

9 Traceability

RFID Tag Device
(MAGICSTRAP®)
LXMS Series

General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM/NFZ Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
	Microwave Absorbers	EA Series	Noise Suppression

Washing Machine



1 Sensor

Thermistors
NCP/NXR/PRF Series

2 CPU

Ceramic Resonators
CERALOCK®
CST Series

Non-Isolated DC-DC Converters
MYMGK/MYSGK/OKL/MYLSM Series

3 Display Panel/Buzzer

Rotary Position Sensors
SV Series

Ceramic Resonators
CERALOCK®
CST Series

Piezoelectric Sounders
PKMCS/PKLCs/PKM Series

4 Inverter/Motor Driver

Thermistors
NCP/NXR/PRF Series

5 Connectivity

Bluetooth Modules

Wi-Fi Modules

LPWA Modules

Microwave Coaxial Cable Connectors

Microwave Coaxial Connectors with Switch

Crystal Units
XRC Series

6 Power Supply

Chip Multilayer Ceramic Capacitors for General Purpose
GR/GA Series

Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose
DK1 Series

Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose
DE1/DE2 Series

Thermistors
PTG Series

7 Sterilizing/Deodorizing

Ozonizer Modules
Ionissimo®
MHM500 Series

8 Traceability

RFID Tag Device (MAGICSTRAP®)
LXMS Series

General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
	Microwave Absorbers	EA Series	Noise Suppression
	Coin Manganese Dioxide Lithium Batteries	Standard Type	Battery Backup

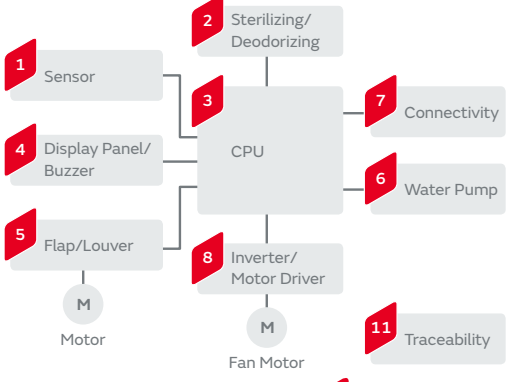
Air Purifier

1 Sensor

Pyroelectric Infrared Sensors
IRA Series

Ultrasonic Sensors
MA Series

Thermistors
NCP/NXR/PRF Series



2 Sterilizing/Deodorizing

Ionizer Modules Ionissimo®
MHM300 Series

Ozonizer Modules Ionissimo®
MHM500 Series



High Voltage Resistors
MHR Series



3 CPU

Ceramic Resonators
CERALOCK®
CST Series

Non-Isolated DC-DC Converters
MYMGK/MYSGK/
OKL/MYLSM Series



4 Display Panel/Buzzer

Ceramic Resonators
CERALOCK®
CST Series

Piezoelectric Sounders
PKMCS/PKLCS/PKM Series



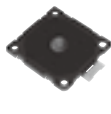
5 Flap/Louver

Rotary Position
Sensors
SV Series



6 Water Pump

Microblowers



7 Connectivity

Bluetooth Modules

Wi-Fi Modules

LPWA Modules

Microwave Coaxial Cable Connectors

Microwave Coaxial Connectors with Switch

Crystal Units
XRC Series



8 Inverter/Motor Driver

Thermistors
NCP/NXR/PRF Series



9 Power Supply

Chip Multilayer Ceramic Capacitors for General Purpose
GR/GA Series

Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose
DE1/DE2 Series



Safety Standard Certified Resin Molding
SMD Type Ceramic Capacitors for General Purpose
DK1 Series



Thermistors
PTG Series

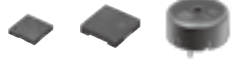


10 Remote Controller

Ceramic Resonators CERALOCK®
CST Series



Piezoelectric Sounders
PKMCS/PKLCS/PKM Series



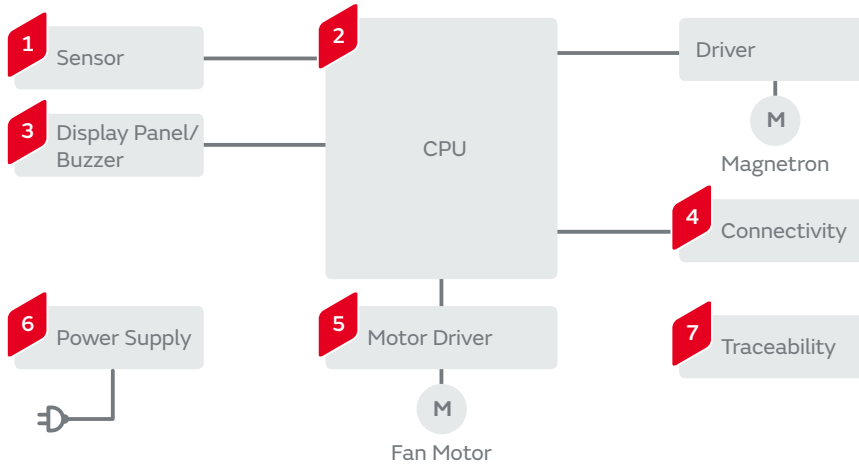
11 Traceability

RFID Tag Device (MAGICSTRAP®)
LXMS Series



Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression
Coin Manganese Dioxide Lithium Batteries	Standard Type	Battery Backup

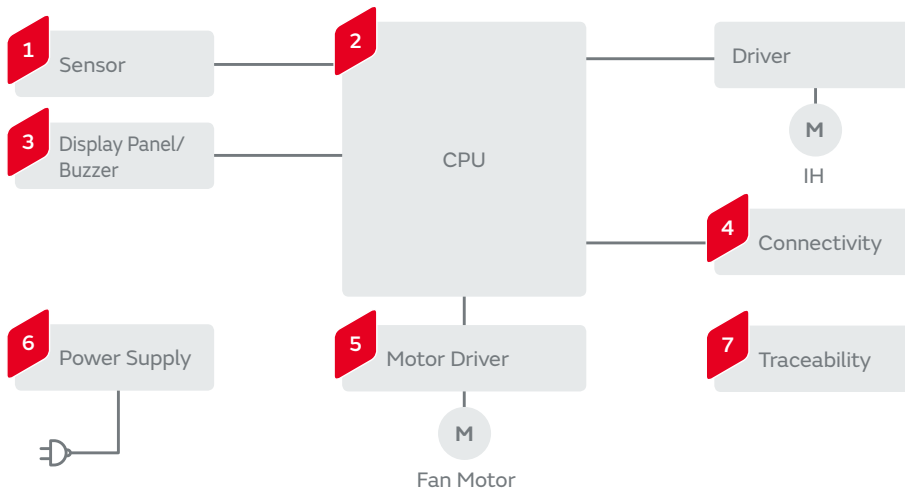
Microwave Oven



1 Sensor Thermistors NCP/NXR/PRF Series 	2 CPU Ceramic Resonators CERALOCK® CST Series Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series 	3 Display Panel/Buzzer Ceramic Resonators CERALOCK® CST Series Piezoelectric Sounders PKMCS/PKLCs/PKM Series 	
4 Connectivity Bluetooth Modules Wi-Fi Modules LPWA Modules Microwave Coaxial Cable Connectors Microwave Coaxial Connectors with Switch Crystal Units XRC Series 			5 Motor Driver Thermistors NCP/NXR/PRF Series
6 Power Supply Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series Thermistors PTG Series 			7 Traceability RFID Tag Device (MAGICSTRAP®) LXMS Series

General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM/NFZ Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
	Microwave Absorbers	EA Series	Noise Suppression

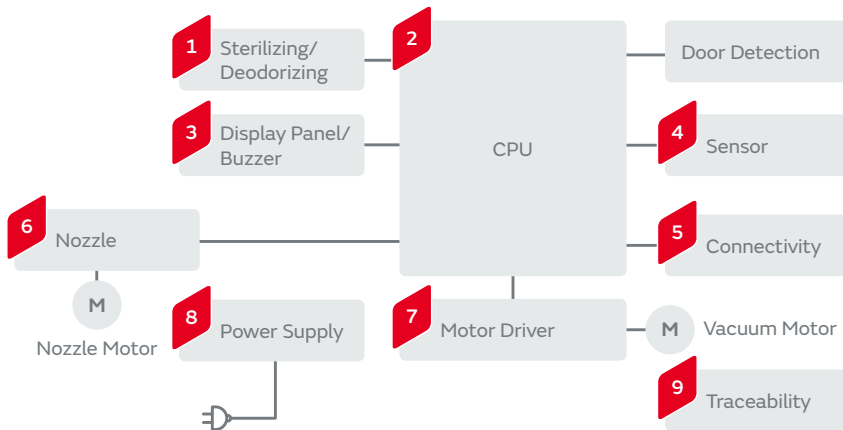
IH Rice Cooker



1 Sensor Thermistors NCP/NXR/PRF Series 	3 Display Panel/Buzzer Ceramic Resonators CERALOCK® CST Series Piezoelectric Sounders PKMCS/PKLCs/PKM Series 	4 Connectivity Bluetooth Modules Wi-Fi Modules LPWA Modules Microwave Coaxial Cable Connectors Microwave Coaxial Connectors with Switch Crystal Units XRC Series
2 CPU Ceramic Resonators CERALOCK® CST Series Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series 	6 Power Supply Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series Thermistors PTG Series 	5 Motor Driver Thermistors NCP/NXR/PRF Series 7 Traceability RFID Tag Device (MAGICSTRAP®) LXMS Series

General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
	Microwave Absorbers	EA Series	Noise Suppression
	Coin Manganese Dioxide Lithium Batteries	Standard Type	Battery Backup

Vacuum Cleaner



1 Sterilizing/Deodorizing

Ionizer Modules Ionissimo®
MHM300 Series

High Voltage Resistors
MHR Series

2 CPU

Ceramic Resonators CERALOCK®
CST Series

Non-Isolated DC-DC Converters
MYMGK/MYSGK/OKL/MYLSM Series

3 Display Panel/Buzzer

Ceramic Resonators CERALOCK®
CST Series

Piezoelectric Sounders
PKMCS/PKLCS/PKM Series

4 Sensor

Ultrasonic Sensors
MA Series

Thermistors
NCP Series

5 Connectivity

Bluetooth Modules Wi-Fi Modules LPWA Modules Microwave Coaxial Cable Connectors Microwave Coaxial Connectors with Switch Crystal Units XRC Series

6 Nozzle

Thermistors
PTG Series

7 Motor Driver

Thermistors
NCP/NXP/PRF Series

8 Power Supply

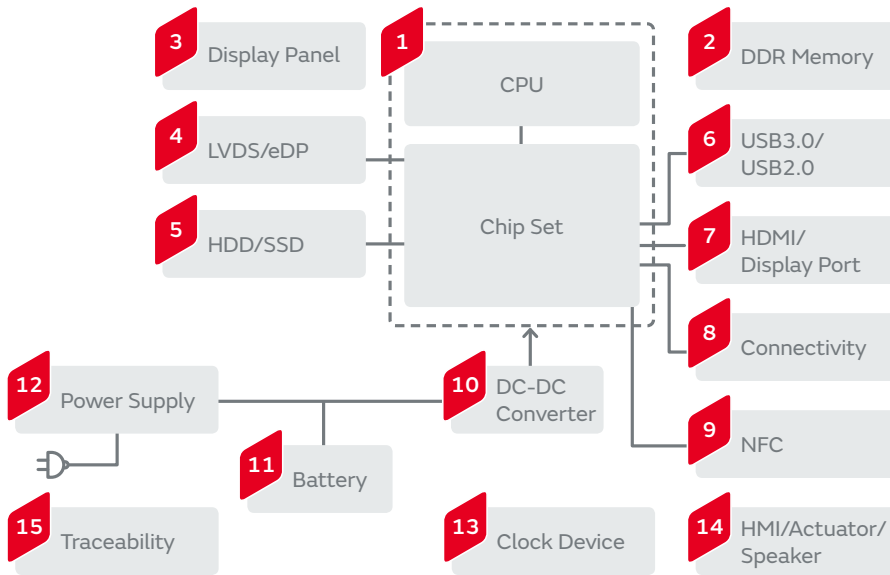
Chip Multilayer Ceramic Capacitors for General Purpose GR/GA Series Safety Standard Certified Resin Molding SMD Type Ceramic Capacitors for General Purpose DK1 Series Safety Standard Certified Lead Type Disc Ceramic Capacitors for General Purpose DE1/DE2 Series Thermistors PTG Series

9 Traceability

RFID Tag Device (MAGICSTRAP®)
LXMS Series

General Purpose	Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
	High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
	Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
	Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
	Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
	Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
	Chip Ferrite Beads	BLM/NFZ Series	Noise Suppression
	3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
	Feed Through Chip EMI Filters	NFE Series	Noise Suppression
	Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
	Microwave Absorbers	EA Series	Noise Suppression

Tablet Terminators



1 CPU/Chip Set

- Low ESL Chip Multilayer Ceramic Capacitors for General Purpose LLL/LLA/LLM Series
- Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series
- Crystal Units XRC Series
- Chip Ferrite Beads BLM Series
- 3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose NFM Series
- Thermistors NCP/PRF Series
- Silicon Capacitors

2 DDR Memory

- Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series
- Chip Ferrite Beads BLM Series

3 Display Panel

- Metal Terminal Type Multilayer Ceramic Capacitors for General Purpose KRM Series
- Ceramic Resonators CERALOCK® CST Series
- Power Inductors LQH Series
- Thermistors PRF/PRG Series

4 LVDS/eDP

- Chip Common Mode Choke Coils/Noise Filters DLW/DLP/NFP/DLM Series
- ESD Protection Devices LXES Series
- Thermistors NCP/PRF Series

5 HDD/SSD

- Shock Sensors PKGS Series
- Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series
- Actuators
- Crystal Units XRC Series
- Thermistors NCP/PRF Series

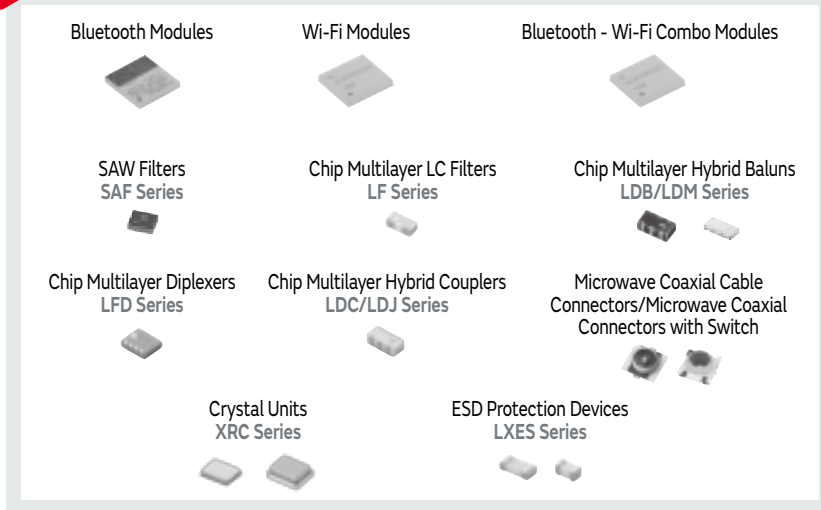
6 USB3.0/USB2.0

- Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series
- Crystal Units XRC Series
- Chip Common Mode Choke Coils/Noise Filters DLW/DLP/NFP/DLM Series
- Chip Ferrite Beads BLM Series
- ESD Protection Devices LXES Series
- Thermistors PRG Series

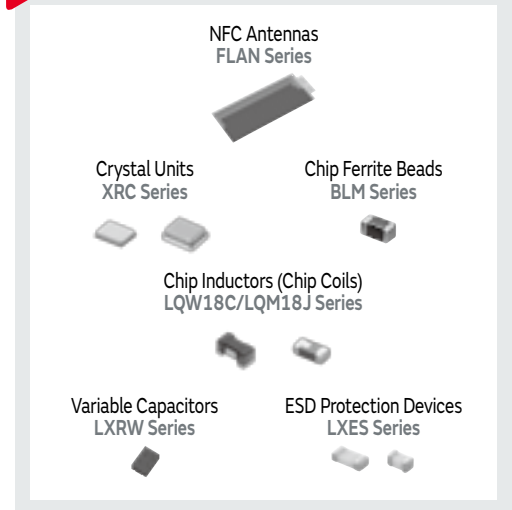
7 HDMI/Display Port

- Chip Common Mode Choke Coils/Noise Filters DLW/DLP/NFP/DLM Series
- ESD Protection Devices LXES Series
- Thermistors PRG Series
- Crystal Units XRC Series

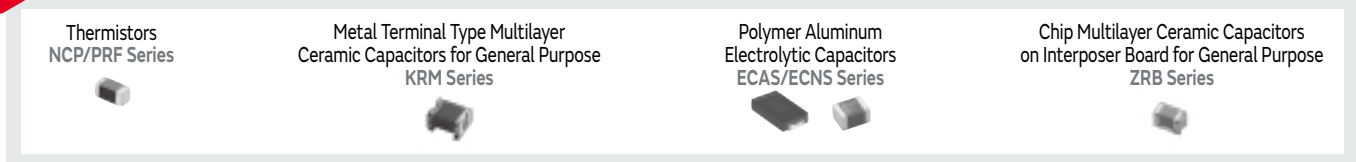
8 Connectivity



9 NFC



10 DC-DC Converter



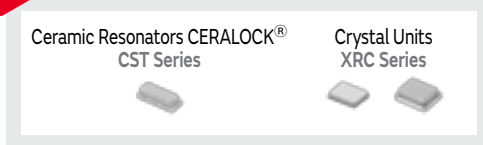
11 Battery



12 Power Supply



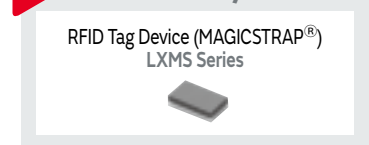
13 Clock Device



14 HMI/Actuator/Speaker



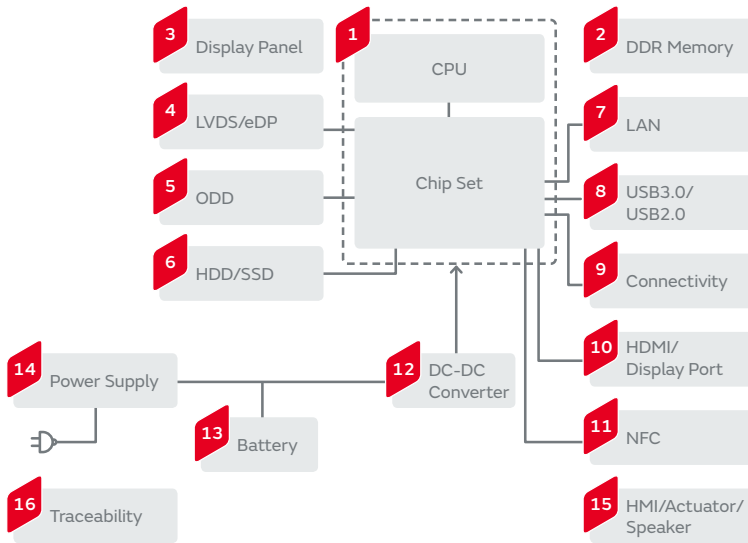
15 Traceability



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM/NFZ Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression

Notebook Computers



1 CPU/Chip Set

- Low ESL Chip Multilayer Ceramic Capacitors for General Purpose LLL/LLA/LLM Series
- Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series
- Crystal Units XRC Series
- Chip Ferrite Beads BLM Series
- 3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose NFM Series
- Thermistors NCP/PRF Series
- Silicon Capacitors

2 DDR Memory

- Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series
- Chip Ferrite Beads BLM Series
- Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series

3 Display Panel

- Metal Terminal Type Multilayer Ceramic Capacitors for General Purpose KRM Series
- Ceramic Resonators CERALOCK® CST Series
- Power Inductors LQH Series
- Thermistors PRF/PRG Series
- Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series

4 LVDS/eDP

- Chip Common Mode Choke Coils/ Noise Filters DLW/DLP/NFP/DLM Series
- ESD Protection Devices LXES Series
- Thermistors NCP/PRF Series

5 ODD

- Ceramic Resonators CERALOCK® CST Series
- Crystal Units XRC Series
- Thermistors NCP Series

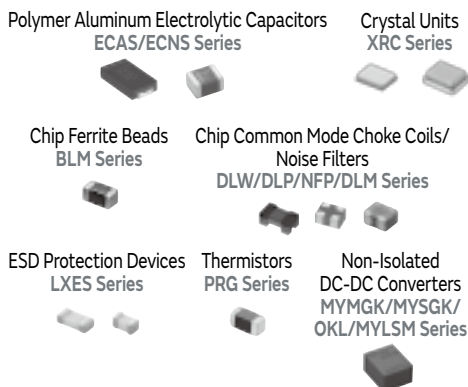
6 HDD/SSD

- Shock Sensors PKGS Series
- Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series
- Actuators
- Crystal Units XRC Series
- Thermistors NCP/PRF Series
- Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series

7 LAN

- Chip Multilayer Ceramic Capacitors for Ethernet LAN and Primary-secondary Coupling of DC-DC converters GR4 Series
- Chip Common Mode Choke Coils/ Noise Filters DLW/DLP/NFP/DLM Series
- Crystal Units XRC Series

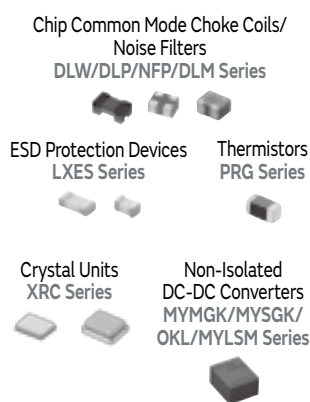
8 USB3.0/USB2.0



9 Connectivity



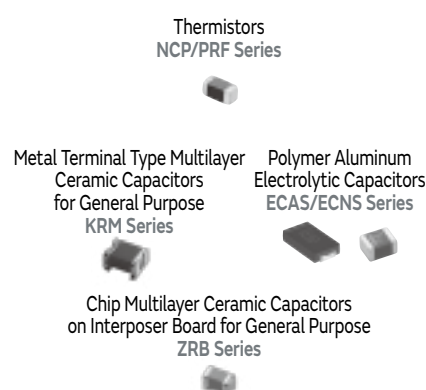
10 HDMI/Display Port



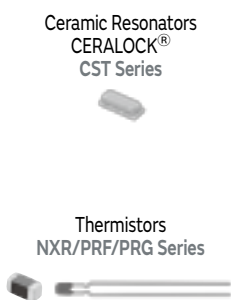
11 NFC



12 DC-DC Converter



13 Battery



14 Power Supply



15 HMI/Actuator/Speaker



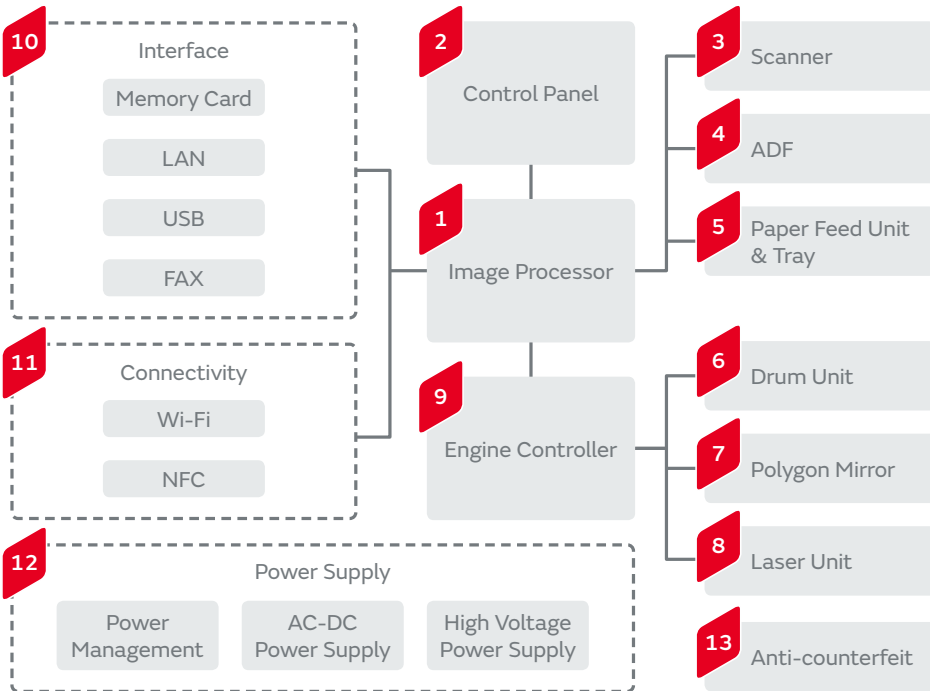
16 Traceability



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression
Coin Manganese Dioxide Lithium Batteries	Standard Type	Battery Backup

MFP (Multi Function Printer/Product/Peripheral)



1 Image Processor

Isolated DC-DC Converters MYB Series 	Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series 	Low ESL Chip Multilayer Ceramic Capacitors for General Purpose LLL/LLA/LLM Series
Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series 	Crystal Units XRC Series 	Thermistors NCP/PRF Series

3 Scanner

Ultrasonic Sensors
MA Series

2 Control Panel

Rotary Position Sensors SV Series 	Metal Terminal Type Multilayer Ceramic Capacitors for General Purpose KRM Series 	Ceramic Resonators CERALOCK® CST Series 	Crystal Units XRC Series 	Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series
Piezoelectric Sounders PKMCS/PKLCs/PKM Series 	Chip Common Mode Choke Coils/ Noise Filters DLW/DLP/NFP Series 	Thermistors NCP/PRF Series 	Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series 	Isolated DC-DC Converters for PoE + PD MYBSP Series

4 ADF

Ultrasonic Sensors MA Series 	Accelerometers SCA Series 	Rotary Position Sensors SV Series
--------------------------------------------	-----------------------------------------	-------------------------------------------------

5 Paper Feed Unit & Tray

Magnetic Sensors (AMR Sensors) MR Series 	Rotary Position Sensors SV Series
--------------------------------------------------------	-------------------------------------------------

6 Drum Unit

Thermistors
NCP/PRF Series

7 Polygon Mirror

Accelerometers
SCA Series



8 Laser Unit

Thermistors
NCP/PRF Series



9 Engine Controller

Chip Multilayer Ceramic
Capacitors for General Purpose
GR/GA Series



Ceramic Resonators CERALOCK®
CST Series



Crystal Units
XRC Series



Thermistors
PRF/PTG Series



Non-Isolated DC-DC Converters
MYMGK/MYSGK/OKL/MYLSM Series



10 Interface

Polymer Aluminum Electrolytic Capacitors
ECAS/ECNS Series



Crystal Units
XRC Series



Chip Common Mode Choke Coils/
Noise Filters
DLW/DLP/NFP/DLM Series



ESD Protection Devices
LXES Series



Thermistors
PRF Series



11 Connectivity

Wi-Fi Modules



NFC Antennas
FLAN Series



Crystal Units
XRC Series



Chip Inductors (Chip Coils)
LQW/LQP/LQG Series



ESD Protection Devices
LXES Series



12 Power Supply

Chip Multilayer Ceramic
Capacitors for General Purpose
GR/GA Series



Safety Standard Certified Resin Molding
SMD Type Ceramic Capacitors
for General Purpose
DK1 Series



Safety Standard Certified Lead Type
Disc Ceramic Capacitors
for General Purpose
DE1/DE2 Series



High Voltage Resistors
MHR Series



Large-current Common Mode Choke Coils
PLT10HH/PLT5BPH/DLW5A/DLW5B/UCMH Series



13 Anti-counterfeit

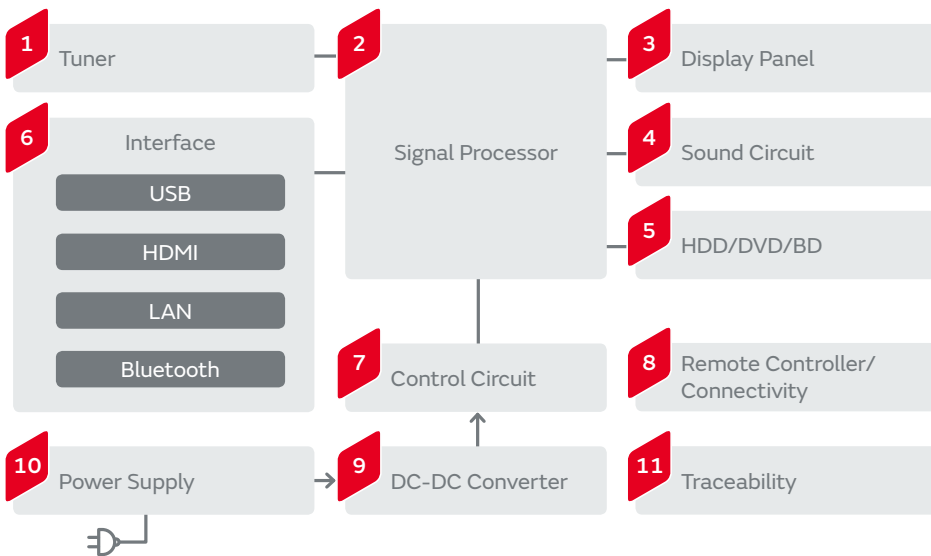
RFID Tag Device (MAGICSTRAP®)
LXMS Series



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression
Coin Manganese Dioxide Lithium Batteries	Standard Type	Battery Backup

Televisions



1 Tuner

Microchip Transformers (Baluns) DXP18B Series

Crystal Units XRC Series

Chip Inductors (Chip Coils) LQW Series

ESD Protection Devices LXES Series



2 Signal Processor

Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series

Ceramic Resonators CERALOCK® CST Series

Crystal Units XRC Series

3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose NFM Series

NFC Antennas FLAN Series

Thermistors NCP/PRF Series



3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose NFM Series



NFC Antennas FLAN Series



Thermistors NCP/PRF Series



3 Display Panel

Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series

Metal Terminal Type Multilayer Ceramic Capacitors for General Purpose KRM Series

Chip Multilayer Ceramic Capacitors on Interposer Board for General Purpose ZRB Series

Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series

Chip Common Mode Choke Coils/ Noise Filters DLW/DLP/NFP Series

Power Inductors LQH Series

Rotary Position Sensors SV Series

Thermistors NCP/PRF Series



4 Sound Circuit

Chip Common Mode Choke Coils DLW/DLP Series



5 HDD/DVD/BD

Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series

Ceramic Resonators CERALOCK® CST Series

Crystal Units XRC Series

Thermistors NCP/PRF Series

Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series



6 Interface

Bluetooth Modules



Bluetooth Smart Modules



Polymer Aluminum Electrolytic Capacitors
ECAS/ECNS Series



Ceramic Resonators CERALOCK®
CST Series



Crystal Units
XRC Series



Chip Common Mode Choke Coils/
Noise Filters
DLW/DLP/NFP/DLM Series



ESD Protection Devices
LXES Series



Thermistors
PRG Series



7 Control Circuit

Bluetooth Modules



Ceramic Resonators CERALOCK®
CST Series



8 Remote Controller/Connectivity

Bluetooth Modules



Wi-Fi Modules



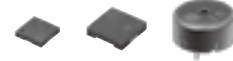
Bluetooth Smart Modules



Ceramic Resonators CERALOCK®
CST Series



Piezoelectric Sounders
PKMCS/PKLCs/PKM Series



ESD Protection Devices
LXES Series



Crystal Units
XRC Series



Chip Inductors (Chip Coils)
LQW/LQP/LQG/LQB Series



9 DC-DC Converter

Metal Terminal Type Multilayer Ceramic Capacitors
for General Purpose
KRM Series



Polymer Aluminum Electrolytic Capacitors
ECAS/ECNS Series



Power Inductors
LQH Series



Thermistors
NCP/PRF Series



10 Power Supply

Chip Multilayer Ceramic
Capacitors for General Purpose
GR/GA Series



Safety Standard Certified Resin
Molding SMD Type Ceramic
Capacitors for General Purpose
DK1 Series



Safety Standard Certified
Lead Type Disc Ceramic
Capacitors for General Purpose
DE1/DE2 Series



Thermistors
NCP/PRF/PTG Series



11 Traceability

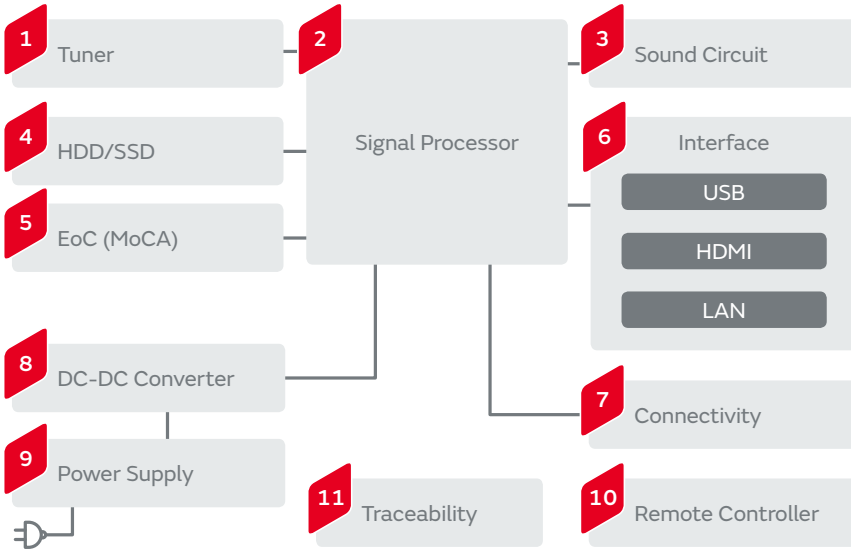
RFID Tag Device
(MAGICSTRAP®)
LXMS Series



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression

Set-top Box



1 Tuner

- Crystal Units XRC Series
- Chip Inductors (Chip Coils) LQW Series
- ESD Protection Devices LXES Series
- Microchip Transformers (Baluns) DXP18B Series

2 Signal Processor

- Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series
- Crystal Units XRC Series
- 3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose NFM Series

3 Sound Circuit

- Chip Common Mode Choke Coils DLW/DLP Series

4 HDD/SSD

- Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series
- Crystal Units XRC Series
- Thermistors NCP/PRF Series
- Non-Isolated DC-DC Converters MYMGK/MYSGK/OKL/MYLSM Series

5 EoC (MoCA)

- Chip Multilayer LC Filters LF Series
- Chip Multilayer Hybrid Baluns LDB/LDM Series
- Crystal Units XRC Series

6 Interface

- Polymer Aluminum Electrolytic Capacitors ECAS/ECNS Series
- Crystal Units XRC Series
- Chip Common Mode Choke Coils/Noise Filters DLW/DLP/NFP/DLM Series
- ESD Protection Devices LXES Series
- Thermistors PRG Series

7 Connectivity

- Wi-Fi Modules
- Microwave Coaxial Cable Connectors
- Microwave Coaxial Connectors with Switch
- Crystal Units XRC Series
- ESD Protection Devices LXES Series

8 DC-DC Converter

Non-Isolated DC-DC Converters
MYMGK/MYSGK/OKL/MYLSM Series



Chip Multilayer Ceramic Capacitors
on Interposer Board for General Purpose
ZRB Series



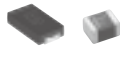
Power Inductors
LQH/DFE Series



Metal Terminal Type Multilayer
Ceramic Capacitors for General Purpose
KRM Series



Polymer Aluminum Electrolytic Capacitors
ECAS/ECNS Series



Thermistors
NCP/PRF Series



9 Power Supply

Chip Multilayer
Ceramic Capacitors
for General Purpose
GR/GA Series



Safety Standard Certified
Lead Type Disc Ceramic Capacitors
for General Purpose
DE1/DE2 Series



Safety Standard Certified Resin
Molding SMD Type Ceramic
Capacitors for General Purpose
DK1 Series



Thermistors
NCP/PRF/PTG Series



10 Remote Controller

Crystal Units
XRC Series



Ceramic Resonators CERALOCK®
CST Series



Piezoelectric Sounders
PKMCS/PKLCS/PKM Series



11 Traceability

RFID Tag Device (MAGICSTRAP®)
LXMS Series



General Purpose

Chip Multilayer Ceramic Capacitors for General Purpose	GRM Series	High Frequency Filter Circuit/Coupling/Decoupling/For Step-up
High Q Chip Multilayer Ceramic Capacitors for General Purpose	GJM Series	High Frequency Filter Circuit
Soft Termination Chip Multilayer Ceramic Capacitors for General Purpose	GRJ Series	Coupling/Decoupling/For Step-up
Polymer Aluminum Electrolytic Capacitors	ECAS/ECNS Series	Smoothing/Transient Backup
Chip Inductors (Chip Coils)	LQW/LQP/LQG Series	High Frequency Circuit-Impedance Matching/Resonance
Chip Inductors (Chip Coils)	LQM/LQH/DFE Series	Voltage Conversion
Chip Ferrite Beads	BLM Series	Noise Suppression
3 Terminals Low ESL Chip Multilayer Ceramic Capacitors for General Purpose	NFM Series	Noise Suppression
Feed Through Chip EMI Filters	NFE Series	Noise Suppression
Common Mode Choke Coils/Noise Filters	DLW/DLP/NFP Series	Noise Suppression
Microwave Absorbers	EA Series	Noise Suppression
Coin Manganese Dioxide Lithium Batteries	Standard Type	Battery Backup

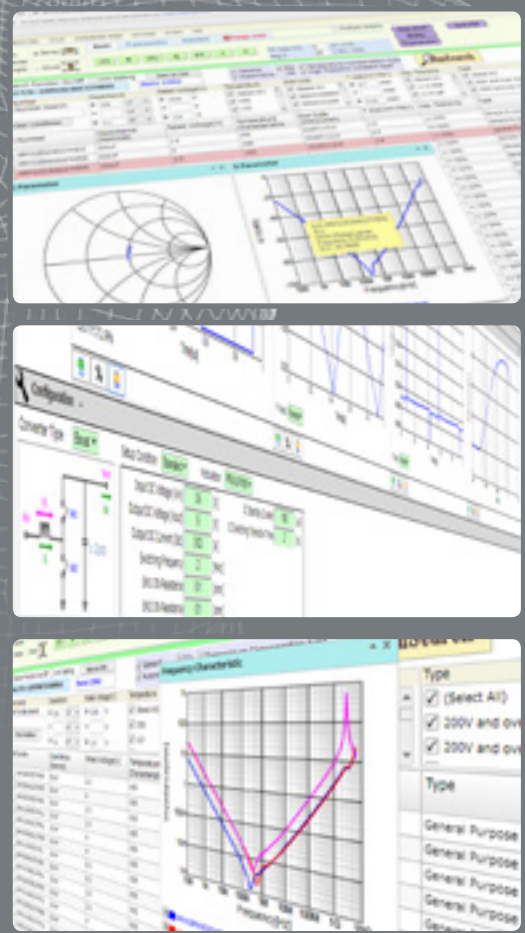
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- ⑧ Disaster prevention / crime prevention equipment
- ⑨ Data-processing equipment
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