AVNET® ABACUS

New product introductions
from Avnet Abacus: Summer 2019

NPI solutions

Welcome to the NPI brochure from Avnet Abacus, our round up of the latest product and technology innovations to enhance your design. To view full product details and datasheets, scan the QR code on the products.

Featured manufacturers

ABB

aimtec
Your Power Partner

Amphenol®

ARTESYN
EMBEDDED TECHNOLOGIES

AVAX
A KYOCERA GROUP COMPANY

bel
POWER SOLUTIONS & PROTECTION
a bel group

BOURNS®

C&K

DELTA

HARWIN

HRS HIROSE ELECTRIC EUROPE B.V.

MW MEAN WELL

molex

muRata
INNOVATOR IN ELECTRONICS

OMRON

pui audio inc

samtec

SCHURTER
ELECTRONIC COMPONENTS

TE connectivity

VISHAY

YAGEO

AVNET® ABACUS

For more information about any of the new products featured here, contact one of our technical specialists in your local language at avnet-abacus.eu/ask-an-expert

Content

Connectors

AMPHENOL ECOMATE RECEPTACLE

Amphenol has launched the ecomate series of single hole mounting receptacles, optimised for constricted spaces and easy mounting. They are rated to IP65/67 and feature crimp contacts for automated processing. The series is ideal for a wide range of applications in agriculture, lighting and industrial markets.
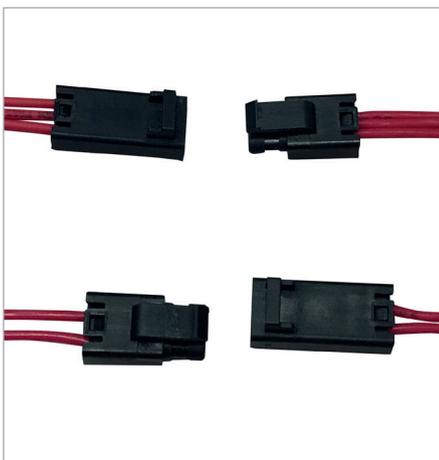
Features and benefits
- Easy mounting
- Optimised constructed space
- IP65/67
- Crimp contacts for automated processing

Applications
- Agriculture
- Lighting
- Measuring and control technology
- Machine building

AMPHENOL ICC FLH SERIES

Amphenol ICC's FLH series mini sealed 2.50mm pitch connectors provide a wire-to-wire IP67 sealing in mated conditions. FLH series mini sealed 2.50mm pitch connectors provide a wire-to-wire IP67 sealing in mated conditions. Its waterproof characteristics make it ideal for applications in harsh environments. These connectors can generally be used in industrial, lighting appliances, HVAC and smart home. The compact design of FLH series is suitable for space-saving applications.

Features and benefits
- Wire-to-Wire IP67 sealing in mated conditions
- Ensure waterproof and reliable connections in harsh environment
- Compact design
- PCB space saving
- High current design options (8A - 18AWG; 5A - 20AWG; 3A - 22AWG)
- Allows design flexibility and meets various power expectations
- Offer connector system with header and receptacle counterparts
- Ease of design and assembly
- RoHS compliant
- Meets environmental, health and safety requirements

Applications
- Communications
- HVAC
- Consumers
- Lighting appliances
- Industrial and instrumentation
- Harsh environment application

AMPHENOL ICC WATERPROOF USB TYPE C

Amphenol ICC's waterproof USB Type C connectors are expected to be widely used as a next-generation interface. They support a variety of protocols such as USB 2.0, USB 3.1 Gen 1, Gen 2 and meet SuperSpeed communication 10Gb/s, 5A and 20V power supply requirements. The usability for USB 3.1 Type C connector is enhanced also by its low profile and reversible product design. Right angle stand-off, straddle mount configurations and waterproof types are available.

Features and benefits

- Tailored for emerging product designs
- Similar size as micro USB
- Supports high speed transmission up to 10Gb/s
- Copper alloy material for terminal design
- 24 pin assignment for different kinds of protocol requirements
- Up to 10,000 mating cycles
- Waterproof glue, O-ring added and liquid insert-mould implemented in the front end of the shell
- Reversible plug and cable orientation for better user experience
- Smaller connector size saves space
- Meets USB 3.1 Gen 1 and Gen 2 specifications
- Backward compatible with USB 2.0
- Extended 5A current rating for USB power delivery

- Supports audio and video signal output with alternate mode
- Enhanced durability
- Meets IPX2 to IPX8 ratings

Applications

- Charger
- Car media player/hub
- Connector hub
- Flash disk
- Mobile phone/tablet
- VR camera
- Hard disk drives
- Solid state drives
- Industrial computer
- POS system
- Medical

HARWIN M225 SERIES

The Harwin M225 series of connectors is aimed at the industrial market, and is a 2.00mm pitch, high performance industrial connector range from Harwin. Designed to resist industrial levels of vibration and shock, in a practical package suitable for automated assembly at high volume.

This cable-to-board, double row design mates a throughboard PCB male connector to a choice of crimp contacts, accommodating 22 to 28AWG wires on the female connector. The female crimp contacts are available in both loose (for prototyping) and reeled (for high-volume automation) packaging, and a hand crimp tool can be ordered for low-volume work.

Features and benefits

- 3A per signal contact (all electrically loaded; 3.3A per individual contact) at 2mm pitch
- Capable of signal and low power within a compact design, saving PCB real estate
- Innovative 3-finger stamped single-piece contact design
- Supplied in bandolier/carrier strip format for easy use on automated crimping systems
- Polarised housings with shrouded contacts
- Prevents accidental damage and incorrect mating orientations for ease of assembly
- Expanding rubber locking fixing
- Fast and secure connection between mated connectors, resistance to vibration

- From a manufacturer of avionics-grade connectors
- High quality manufacturing with modern production standards, EN9100 approval

Applications

- Industrial: factory and mobile machinery, control panels and sub-systems, drives, robotics and other automation
- Instrumentation: test equipment, portable hand-held devices
- Site control: remote control devices, ground and machinery monitoring

Connectors

HIROSE DF51 AND DF51K SERIES
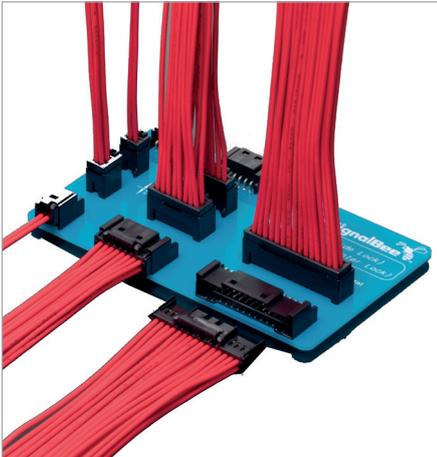
Hirose introduces the DF51 series of robust wire-to-board connectors for applications requiring more strength and durability.

DF51 connectors feature a side lock design that allows the connectors to be placed next to each other widthways to save space on the board. The mating operation is user-friendly and a clear tactile click confirms secure engagement and a reliable connection.

These connectors feature a strong contact lance strength which increases the contact retention in the housing and prevents the contacts from pulling loose if the cables are wrenched.

Features and benefits
- Number of contacts: 1 row: 2-6, 2 rows: 4-30
- Contact pitch: 2mm
- Current rating: 2A (max.)
- Voltage rating: AC/DC 250V
- Temperature:-55°C to +105°C
- Cable size: AWG 22-30
- Accepts resin sealing
- UL/C-UL certified

Applications
- Industrial machinery
- Medical devices
- Smart meters
- Industrial robots

MOLEX 105431, 105430 AND 105429 SERIES

Molex has introduced the 105431, 105430 and 105429 series Nano-Fit SMT version power connectors. Power application customers are faced with the decision of choosing between headers with exposed terminals, leaving connectors susceptible to damage, and large, fully-isolated headers that take up too much space. Compact Nano-Fit connectors provide design engineers fully protected header terminals in a small package. Another challenge that design engineers face is meeting the requirement to use multiple headers of the same circuit size on one PCB. This complicates the assembly due to possible mis-mating of a receptacle to the wrong header. Nano-Fit connectors offer different mechanical keying options, enabling customers to reduce the risk of cross mating while improving assembly speed with color-coding logic.

Features and benefits
- Smallest fully isolated headers in the market
- Optional TPA (terminal position assurance) retainer
- Ultra-low mate force terminal
- Positive-lock housing with anti-snag design
- Provides audible click while mating. Protects latch from damage due to wire snags
- Enables use of multi-layer boards by eliminating the need for through holes
- Available in embossed tape for pick-and-place assembly
- Multiple mechanical keying and color-coding options
- Retention tang and contact rib
- Terminal interface with 4 points of contact
- Fully isolated terminals
- Terminals available in gold and tin plating
- Short electrical path

Applications
- Automotive
- Consumer
- Defence
- Industrial
- Medical
- Telecommunications/networking

MOLEX 145135 SERIES

The Molex 145135 series standard discrete cable assemblies deliver off-the-shelf solutions with a broad offering of Molex connectors and a variety of cable lengths to facilitate both prototyping and global production.

Features and benefits

- Custom assemblies for production also available
- Pico-Clasp cable assembly offers a small 1.00mm pitch and 1.0A current rating with positive lock
- Pico-Lock cable assembly offers a low profile, high current and positive locks
- PicoBlade cable assembly capable of carrying a maximum 1.0A of current with 1.25mm pitch
- Micro-Lock Plus cable assembly offers 1.25mm-pitch form factor and carries 1.5A with positive lock
- MicroClasp cable assembly capable of carrying a maximum 3.0A of current with 2.00mm pitch
- CLIK-Mate cable assembly carries 2.5A with a 1.50mm pitch

- Micro-Fit TPA cable assembly has a maximum 5.0A current rating and a 3.00mm pitch
- Nano-Fit TPA cable assembly has up to a 6.5A current rating in a small package

Applications

- Consumer
- Commercial vehicle
- Industrial
- Medical
- Patient monitors
- Aerospace and defence
- Telecommunications

MOLEX 207458, 207459, 207478 AND 207479 SERIES

Molex's L1NK 396 connectors prevent mis-mating with their unique keying design and clear audible click for connection assurance.

Some applications have high mis-mating probably due to repetitive mating requirements. L1NK 396 connectors prevent mis-mating with their unique keying design and clear audible click for connection assurance.
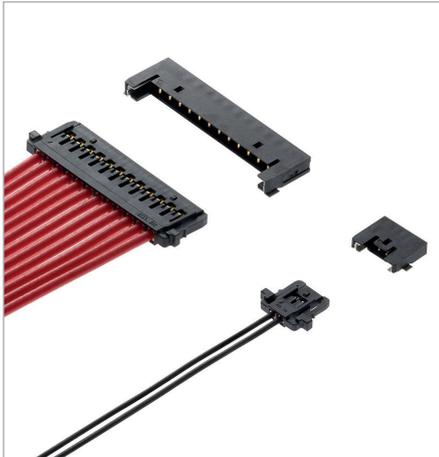
Features and benefits

- Reflow options available
- Reflow-capable header
- TPA
- Positive-locking latch
- Unique keying design
- V-0/glow wire combination resin

Applications

- Automotive
- Consumer
- Industrial
- Medical
- Telecommunications/networking

Connectors

MOLEX 503764, 503763, 504051 AND 504050 SERIES

Molex's new Pico-Lock system, now available in 1.00 and 1.50mm pitch versions is, the first miniature wire-to-board connector system to combine all these features to meet these needs

Notebook and tablet PCs with large graphic displays continue to get thinner in design and more powerful in functionality. This combination has created a need for a new style of connector that offers a very low profile, high current-carrying capability and a robust positive lock to maintain connection even when subjected to shock or vibration. The new Pico-Lock system is the first miniature wire-to-board connector system to combine all these features to meet these needs.

Features and benefits

- Ultra-low-profile mated height (1.50mm and 2.00mm versions)
- Beveled header pin design
- Polarisation/mating guide features
- Side positive locks
- Wide robust fitting nails (solder tabs)
- Top friction locks

Applications

- Automotive
- Consumer
- Industrial
- Lighting
- Smart phones and mobile devices

MOLEX 68767 SERIES

Molex's 68767 series high-performance fully shielded HDMI cables offering superior reliability, durability and 4K display resolution, making them ideal for a variety of markets and applications.

Features and benefits

- Supports high quality 4K resolution display
- Fully shielded EMI/RFI protectionn
- V1.4 compliant
- Up to 10.2Gbps bandwidth
- Supports ethernet speeds up to 100Mbps
- Suits a variety of user-application requirements
- High durability: 10,000 mating cycles

Applications

- Consumer
- Industrial and commercial
- Medical

MOLEX 68768 AND 68789 SERIES

Molex 68768 and 68789 series high-performance fully shielded USB cables supporting up to 5Gbps speed and offering superior reliability and durability, making them ideal for a variety of markets and applications.

Features and benefits
- Up to 5Gbps data speed
- Ideal for high-speed network applications
- USB 3.0: 5,000 mating cycles
- Delivers a high durability
- Available in USB 2.0 and 3.0 speeds
- Suits a variety of user-application requirements
- Fully shielded
- Provides EMI/RFI protection
- USB 2.0: 10,000 mating cycles
- Delivers high durability

Applications
- Consumer
- Industrial and commercial
- Medical
- Datacom

MOLEX 68783 SERIES

Molex 68783 series high-performance fully shielded DisplayPort cables offering superior reliability, durability and 4K display resolution, making them ideal for a variety of markets and applications

Features and benefits
- 10,000 mating cycles
- Delivers high durability
- Up to 32.4Gbps bandwidth
- Detect lock
- Provides secure mating
- Fully shielded
- Provides EMI/RFI protection
- V1.3 compliant
- Supports 4K resolution display
- Delivers high quality display

Applications
- Consumer
- Industrial and commercial
- Medical
- Datacom

Connectors

SAMTEC MPOWER™ POWER SYSTEM

Samtec announces the release of mPOWER™ connectors – the ultimate micro high-power solution with incredible design flexibility for power-only or power/signal applications. This 2mm pitch power connector system (UMPT/UMPS) features a small form factor while achieving up to 18A per blade.

Features and benefits

- Up to 21A per blade (1 blade powered)
- Design flexibility as a power-only system or a two-piece system for power/signal applications
- Use with Samtec's high-speed connector systems for a unique power/signal system (see chart)
- Choice of 2, 3, 4 and 5 position counts, 5mm to 12mm stack heights available
- Tin or 0.25μ gold plated power blades (0.76μ gold plating available to meet specific regulations)
- Optional weld tabs

- Right-angle, rugged shielding and cable assembly in development
- 30A system currently in development

SCHURTER GP21 AND GS21 CONNECTOR SYSTEM

With the GP21 plug connector and the GS21 socket outlet, Schurter launches the world's first UL approved IEC TS 62735-1 standardised DC connector sytem designed to enable efficient DC power distribution in data centre power distribution strips and UPS.

With a complete DC power supply architecture, from source to load, the cost-intensive and failure-prone transformations and conversions, including their components, are completely eliminated. Operational reliability increases with improved efficiency.

Features and benefits

- First IEC connector system on the market for
  > 400VDC according to TS 62735-1 (2.6kW)
  > Designed for PDU and UPS in data center
  > Various terminal options
  > Safe disconnect under load

TE CONNECTIVITY AMPLIMITE CONNECTORS
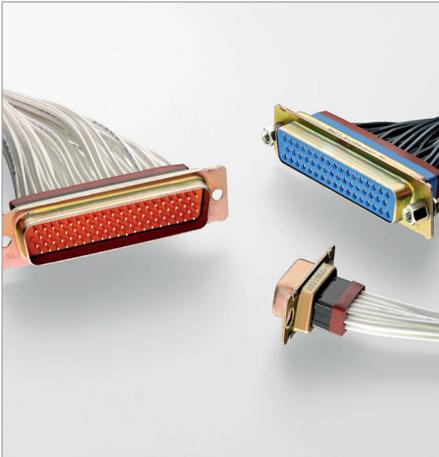
TE Connectivity, a world leader in connectivity and sensors, recently released its new line of rugged AMPLIMITE D-subminiature (D-sub) connectors that put the same corrosion resistance of connectors made with cadmium into an environmentally-friendly, stainless-steel housing. The new stainless-steel housing is designed to meet the performance requirements of MIL-DTL-24308, offering up to 500 hours of resistance to salt spray in harsh environments.

Features and benefits

- Stainless steel housing designed to meet the requirements of MIL-DTL-24308
- Available with standard 20 AWG crimp contacts or higher density 22 AWG crimp contacts
- Passivated stainless steel shell requires no protective or toxic plating

Applications

- Military aerospace
- Weapons systems
- Launching systems
- Military ground vehicles
- Marine
- Harsh environments

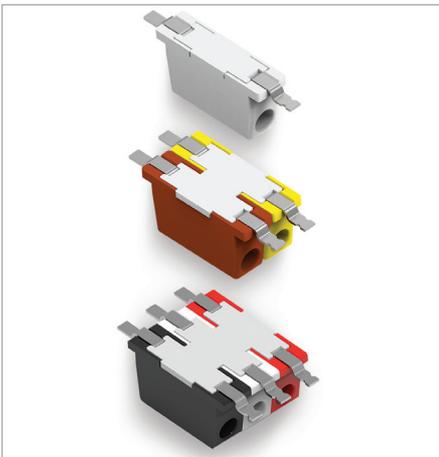# TE CONNECTIVITY BUCHANAN WIREMATE ITB MODULAR POKE-IN

TE Connectivity's inverted Thru-Board (ITB) connectors join the BUCHANAN WireMate family from TE Connectivity, specially designed for use in linear and circular LED modules found in all sorts of commercial and industrial lighting systems. The unique headers enable power delivery from the underside of the PCB and LED arrays, eliminating top-surface wire management issues. With their easy-to-use poke-in and wire release features, the new connectors help shorten installation time and provide extra flexibility for reuse and wire replacement. The reduced profile of the connector takes only 2mm in height above the PCB top surface while horiseontal wire insertion minimises space usage beneath the PCB. The connectors are modular in design, available for up to five wire connections and in different colors to help installers avoid mistakes when inserting wires. The connectors conform to the UL 1977 standard for component connectors for use in data, signal, control and power applications.

Features and benefits

- Reliable poke-in technology (no wire crimping) for fast and easy termination
- ITB application reduces profile for good lighting affect
- Wire release feature enables easy re-work and robust design of release mechanism helps prevent damage during wire assembly and rework
- Space saving low profile design
- Lower inventory and production costs with higher connection variations supported by a side by side stackable design on 4mm spacing

Applications

- Commercial lighting
- Office lighting
- Industrial lighting

Connectors

TE CONNECTIVITY ETHERNET JACKS

Ethernet jacks with integrated magnetics and Power over Ethernet (PoE) from TE Connectivity offer a highly integrated connectivity PCB solution for Industrial Ethernet applications. Using a 3-wire choke improves EMI performance and allows for remote powering of peripherals over the Ethernet cable. The new jacks comply to the IEEE 802.3at (PoE+) standard, which supports up to 25.5W of power per ports. The Ethernet jacks support an industrial temperature range and can be used in reflow soldering production processes at 260°C for easy and cost effective manufacturing. All features combined with high corrosion resistivity makes the new series of jacks extremely suited for a broad spectrum of industrial applications.

Features and benefits

- Supporting 260°C reflow solder processes to simplify manufacturing without extra process step
- Reduction of electrical problems and corrosion via thicker plating
- Fits Industrial applications: –40°C to +85°C temperature range
- Compact design on PCB using integrated magnetics
- Remote powering supported by 802.3at PoE
- Enhanced EMI with 3 wire choke

Applications

- Industrial communications and Ethernet
- Industrial machinery
- Industrial production equipment
- Automated test equipment

TE CONNECTIVITY LUMAWISE ENDURANCE S CONNECTOR SYSTEM

TE Connectivity LUMAWISE Endurance S connector system is a complete set of products specially designed for street lighting control, compliant with Zhaga Book 18. This consists of a receptacle connector placed on a streetlight and several base and dome combinations to house sense and control modules from the surrounding harsh environments. The IP66 rated receptacle assembly, base and dome combinations provide a sealed electrical interface between new slim design LED streetlights and the associated sensor modules. The LUMAWISE Endurance S base and dome form the module that is IK09 impact resistance rated which provides a robust packaging solution. This compact design is UV resistant, appealing to the eye and can be mounted facing upward, downwards or sideways bringing flexibility to the street light designer.

Features and benefits

- Follows industry standard Zhaga Book 18
- Extend product life in harsh environments with an IP65 and IP66 rated product
- IK09 high impact resistant
- Flexibility in design with upwards, downwards and sideways facing mounting versatility
- Secure low torque mating of sealing cap or base and receptacle
- Condensation minimised with an optional vent feature

Applications

- Street and area lighting
- Sensor ready control applications
- Outdoor luminaires
- Photo controls
- Central management system
- City management system
- Other sensor modules e.g. occupancy

TE CONNECTIVITY M12 8/12 PIN CONNECTORS

TE Connectivity extends its M12 connector portfolio. The latest connectors, with 8 and 12 positions for direct mounting onto PCBs and panels, complement field-installable connectors and cable assembly solutions. The new connectors, which are UL certified and have an IP67 rating (indicating that they are dust-tight and water-proof down to a depth of at least one metre), ensure efficient, high quality and reliable signal transmission. The high pin density on the 12-pin connector in particular provides customers with a very compact design.

Features and benefits

- Compact design with high density connection
- Plug-&-Play mating for easy and fast installation
- Quick and reliable connection for PCB and panel mount

Applications

- Machinery
- Automation integration
- Vision system
- Semiconductor manufacturing
- Factory automation machines

TE CONNECTIVITY M12 L-CODE CONNECTORS

TE Connectivity (TE)'s new M12 Power L-Code connectors are designed for panel mount PCB applications and provide a compact solution for high-power connections in automation devices. An extension of TE Connectivity's M12 product portfolio, they handle up to 16A per pin – the highest in TE Connectivity's M12 family – delivering four times the power of standard M12 connectors while providing reliable and efficient power supply. M12 Power L-Coded connectors take up to 40% less space than 22.23mm connectors traditionally used for high-power connections, allowing for a more compact build of a high-power solutions for automation devices.

Features and benefits

- Provides four times the power of standard M12 connectors for compact high-power solution.
- PNO approved for immediate implementation into PROFINET standard and embracing miniaturisation of distribution boxes.
- Ideal for factory automation and use in harsh and wet industrial environments.

Applications

- Motors and drives
- Industrial machinery and devices
- Robotics
- Industrial lighting
- Distribution boxes

Connectors

TE CONNECTIVITY MINI-SAS HD CONNECTOR

TE Connectivity's new competitively priced external mini-SAS HD connectors and cable assemblies enable you to easily design for enterprise storage, high performance computing, networking and data centers. We offer a full portfolio of internal and external connectors and cages in 1x1, 1x2 and 1x4 configurations, and our cable assemblies now feature a low profile design.

Features and benefits
- 30 to 50% PCB space savings over mini-SAS connectors
- Supports PCIe and SAS protocols
- Cable assemblies are available in an industry leading range of wire sizes from 30 to 24 AWG

Applications
- Enterprise storage
- High performance computing

TE CONNECTIVITY SENSOR ACTUATOR M8/M12 ASSEMBLIES

TE Connectivity now offers over 2000 parts of IP67 rated M8/M12 cable assemblies for applications such as sensors, robotics and production equipment, where extreme temperatures and harsh environments are likely to be encountered. They are also ideal for non-industrial applications where compact and reliable connections are required. With the circular connectors overmolded to a cord set, the new cable assemblies can be installed quickly, helping to reduce unnecessary downtime and help maintain continuous operation in critical areas.

Features and benefits
- M12 cable assemblies are IP67 sealed and tested in TE's factory to eliminate the possibility of false wiring and to ensure robust connection
- Reduce downtime in harsh environments with reliable industry standard solution that includes quick turn, prototype cable assemblies.
- Full solution offering including customised and general market cable assemblies enables one-stop-shopping and reduced TCO

Applications
- Industrial communications
- Industrial machinery
- Industrial automation
- Robotics
- Machine tools
- Semiconductor manufacturing
- Manufacturing of solenoid and sensor valves
- Process control systems
- Vision systems
- Electronics manufacturing

TE CONNECTIVITY SFP56 AND QSFP56 CABLE ASSEMBLY

TE Connectivity's signal integrity expertise provides one of the highest performing SFP56 and QSFP56 cable assembly portfolios in the market to support aggregate data rates of 100 and 200 Gbps in high speed data center applications.

Features and benefits

- Enterprise switches
- Servers
- Routers
- Storage devices
- High performance computing
- Wireless infrastructure
- Test and measurement equipment

Applications

- Support aggregate data rates of 100 and 200 Gbps
- Compatible with IEEE 802.3cd, IEEE 802.3bj, IEEE 802.3by and InfiniBand EDR
- Optimised construction minimises insertion loss and cross-talk
- Full solution - pair with TE Connectivity's SFP56 and QSFP56 connectors and cages
- Backwards compatible with existing QSFP and SFP connectors and cages

TE CONNECTIVITY SLIDING POWER CONNECTOR

TE Connectivity's sliding power connector is one of the only connectors of its kind that allows for hot swapping of components in a server drawer. This power solution is ideal for applications up to 75A and eliminates the need for a bulky cable management system within the drawer. The sliding power connector also shows improved voltage drop over cables due to a more direct path from the power source to the server. With limited cabled connections, the sliding power connector is also more reliable. With no need for complex cable management or loose moving parts within the drawer, the sliding power connector provides a simpler design that is less prone to disconnection from the power source.

Features and benefits

- Allows for hot swapping of components
- Ideal for applications up to 75A
- Eliminates the need for bulky cable management systems
- Improved voltage drop over cables
- Simple design benefits
- Minimal system downtime
- Energy efficiency
- Higher reliability

Applications

- Hard disk drives
- Power supply units
- Open Compute Project (OCP) cubby
- Racks
- Servers
- Storage units
- High current applications

Connectors

TE CONNECTIVITY Z-PACK CONNECTORS

The TE Connectivity Z-PACK 2mm eHM board-to-board connector is designed in compliance with the CompactPCI Express specification to provide excellent electrical and mechanical performance at an economical price.

Features and benefits

- W-500Vrms rated voltage
- 1 to 5A current rating
- 104MΩ min. insulation resistance
- 20mΩ max. contact resistance
- 250 matings and unmatings
- −55°C to +125°C operating temperature range

Applications

- Modular test instruments
- Industrial computers
- High speed rail subsystems
- Medical imaging devices

Electromechanical

C&K ATP19 AND ATP22 SERIES

C&K's ATP19 and ATP22 series are high-strength, lightweight metal switches that meet the IP67/IK10 requirements, ensuring their suitability for operation in harsh conditions and the ability to withstand potential malicious damage.

Both the ATP19 and ATP22 series are available in momentary or self-lock actuation versions suitable for application versatility. Able to withstand heavy physical abuse, including attempted damage using metal tools, the switches target applications such as control panels in car parks and traffic lights, industrial instruments, elevators, escalators, communication equipment and alarms, safety and security systems.

Features and benefits

- SPDT and DPDT N.O./N. C. contact arrangement
- Able to switch up to 3A, resistive load at 250VAC
- IP67 sealed and IK10 (on stainless steel bushing)
- Available in metal bushing/housing: stainless, brass or aluminium alloy
- UL certified

Applications

- Pedestrian crossing signal activation switches
- Intercom `push-to-talk´ devices at the entrance
- Parking lot ticket machines and ticket paying stations
- Alarm, safety, and security systems
- Automatic food and drink vending machines

OMRON C3AW SERIES

The Omron C3AW series of durable, shock resistant trigger switches from Omron is designed for DC brushless tools. The series features an anti-dust design (IEC IP6X) with a sealed cover over moveable parts and an ultrasonic welding connection between cover cases, making it ideal for cordless power tools and gardening tools.

Features and benefits

- C3AW achieves anti-dust (IEC IP6X) by mounting sealed boots and ultrasonic welding connection between cover cases
- Strengthens contact shock resistance (less than 100µs chattering within 3,000m/s2)
- Highly durable with a mechanical life of more than 300,000 cycles
- Wire saving by connecting flat cable AWG 28 directly to the switch
- RoHS compilant

Applications

- Cordless power tools
- Gardening tools

OMRON G3VM SERIES

Omron has extended its line of G3VM MOSFET relays with a DIP-6Pin high current type and VSON(R) voltage driven type.

The DIP-6Pin high current models feature higher current compared with previous models, a high operating temperature of ~110°C and a reduction of maximum Turn-OFF time.

Features and benefits

- Wide range of packages: DIP, SOP, SSOP, USOP, VSON, and S-VSON (smallest in the industry: 2mm x 1.45mm x 1.65mm)
- Single and dual-contact models available with both NO and NC contacts
- ON-resistance as low as 5mΩ (typical)
- OFF-state capacitance as low as 0.3pF (typical)
- Trigger LED forward currents as low as 0.2mA
- Switching times down to 0.2ms
- Models available with current-limiting functions
- 100,000 hours of continuous operation
- Dielectric strength up to 5000VAC for 1 second
- Models switching up to 10A in a small package

Applications

- Communications
- Security
- Power supplies
- Test and measurement
- Industrial

Passive

AVX MV SERIES

AVX Thin Film Technologies is pleased to introduce a novel MIM (Metal-Insulator-Metal) capacitor using a transmission line wire bond pad structure with backside ground. The transmission line MIM can be supplied on quartz, alumina, glass and other substrates to minimise losses. Copper traces are used for optimal conductivity. Front and backside gold metalisation make this device suitable for epoxy, gold wire bond/ribbon bond attachments.

Features and benefits

- HFSS design unique for every device
- Gold wire bondable
- Copper conductor design for improved circuit conductivity
- Designs optimised for RF/performance
- RoHS compliant

Applications

- DC blocking at UHF
- High frequency link
- RF/microwave applications

BOURNS 2011 SERIES

Bourns is pleased to announce the release of the Model 2011 series Gas Discharge Tube (GDT) surge arrestor with FLAT® technology. Bourns sets a new industry standard by offering a 2-electrode in an innovative flat-package design. Bourns' FLAT® technology delivers a low profile GDT solution for high density and height-restricted PCB applications.

The 2011 series is a fast acting GDT designed for use with a Bourns® TBU® High-Speed Protector (HSP). The series is designed to limit high rate of rise voltage transients to levels below the TBU® device's maximum voltage impulse rating (Vimp). The new 2011 GDT along with the TBU® HSP is an ideal protection solution for RS-485 applications. It should be noted the 2011 series is suitable for use in any applications requiring small size, robust current handling and superior voltage limiting.

Features and benefits

- Large flat top surface and lighter weight, ideal for high-speed pick and place
- Robust current rating
- Stable performance over life
- Low leakage
- Constant capacitance regardless of voltage
- Low arc voltage
- Significant height reduction compared to standard 5mm SMD GDT
- Devices do not impact signal or system operation
- Voltage limiting suitable for sensitive equipment and for use with the TBU® high-speed protector
- Long term reliability and performance
- RoHS compliant
- Halogen free

Applications

- Telecom equipment
- Industrial communications
- Surge protective devices
- High density PCB assemblies

BOURNS CDSOT23-TXXC-Q SERIES

Bourns is pleased to announce that the existing model CDSOT23-T03, CDSOT23-T08C and CDSOT23-T15C TVS diodes are now AEC-Q101 compliant as model CDSOT23-T03-Q, CDSOT23-T08C-Q and CDSOT23-T15C-Q.

These AEC-Q101 compliant products are also well suited for applications that require high reliability such as portable electronics, power supplies and equipment used in harsh environments.

Features and benefits

- ESD protection 30kV max.
- Protects one or two lines
- Unidirectional and bidirectional configurations
- RoHS compliant
- AEC-Q101 compliant

Applications

- Protection of power buses
- Protection of I/O interfaces
- Overvoltage transient protection
- Telecom, computer, industrial and consumer electronics applications

BOURNS CDSOT23-TXXLC-Q SERIES

Bourns is pleased to announce that the existing model CDSOT23-T05LC and CDSOT23-T08LCTVS diodes are now AEC-Q101 compliant as models CDSOT23-T05LC-Q and CDSOT23-T08LC-Q.

The CDSOT23-TxxLC-Q series' low capacitance of 5pF allows designers to use theseTVS diodes for protecting communication lines against ESD and voltage transients, up to rated limits. These AEC-Q101 compliant products are also well suited for applications that require high reliability such as portable electronics, power supplies and equipment used in harsh environments.

Features and benefits

- ESD protection 30kV max.
- Surge protection >24A
- Protects 1 line
- Unidirectional configuration
- RoHS compliant
- AEC-Q101 compliant

Applications

- Protection of power buses
- Protection of I/O interfaces
- Overvoltage transient protection
- Telecom, computer, industrial and consumer electronics applications

BOURNS CFG AND CFN SERIES

Bourns is pleased to introduce its CFG and CFN series metal foil current sense resistors. These new surface mount models help strengthen the already broad range of surface mount current sense resistors offered by Bourns.

The new model CFG and CFN series are constructed with a metal foil resistive element mounted on a ceramic substrate for excellent heat conductivity. The model CFG series is available in an 0612 (1632 metric) wide terminal footprint. The CFN series is offered in two different sizes: 0805 (2012 metric) and 1206 (3216 metric).

Features and benefits

- Wide terminal type
- Excellent heat dissipation
- Metal foil
- RoHS compliant and halogen free
- High power density
- High reliability and stability

Applications

- Current sensing
- Power supplies
- Stepper motor drives
- Input amplifiers

BOURNS P-TCO-U AND P-TCO-N SERIES

Bourns is pleased to announce the introduction of a new family of Polymeric Thermal Cutoff (P-TCO) devices designed to protect USB-C cables from destructive and potentially dangerous thermal runaway events. The new P-TCO family includes two series: the P-TCO-U series in a 1210 footprint, and the P-TCO-N series in an ultra-compact 1206 footprint.

Features and benefits

- Surface mount packaging for automated assembly
- Small footprint sizes (1210 and 1206)
- Low profiles for over-molding considerations
- Ultra-low resistance
- RoHS compliant and halogen free

Applications

- Thermal runaway protection for USB-C cables
- USB C-C, C-B, and C-A connector configurations
- USB 3.2, 3.1, 3.0, and 2.0 protocols
- Other charging cables

BOURNS PTVS10-086C-M SERIES

Bourns is pleased to announce the release of a 10kA, 86V bidirectional high current Power TVS Diode, extending the existing range of its PTVS series. This model was designed for use in DC bus clamping applications.

The Bourns® Model PTVS10 series offers bidirectional port protection meeting IEC 61000-4-5 8/20µs current surge requirements and is RoHS compliant and halogen free. When compared to typical competing MOV technology, the use of silicon technology in the Power TVS products provides a lower clamping voltage under surge, greater performance stability and increased reliability.

These devices exhibit an excellent surge response versus temperature; the maximum surge current at 150°C exceeds 70% of their rated value at 25°C.

Features and benefits

- 10 kA, 8/20µs surge capability
- 1 kA, 10/350µs surge capability
- Low clamping voltage under surge
- Bidirectional TVS
- Surface mount package
- Excellent overtemperature performance
- RoHS compliant

Applications

- DC line protection
- Protection of power supplies used in exposed and harsh environments
- Surge Protective Devices and dongles

BOURNS PWR221T-50 SERIES

Bourns is pleased to announce the introduction of the new model PWR221T-50 series high power thick film resistors. This series is available in a compact TO-220 package utilising thick film on ceramic technology which provides the advantage of low inductance and the ability to absorb power up to 50 watts when properly mounted to a heat sink.

Bourns offers a broad range of PWR series high power resistors in DPAK, D2PAK, TO-220 and TO-247 packages. This latest TO-220 package addition helps to further strengthen the PWR family.

The new PWR221T-50 series through-hole, radial leaded resistor is available with a wide resistance value range from 20 milliohms to 130 kiloohms and resistance tolerance options of 1% and 5%.

Features and benefits

- TO-220 housing
- Low inductance
- Ceramic backplane
- High power rating
- RoHS compliant

Applications

- Power supplies
- Motor drives
- Test and measurement
- Rectifiers

BOURNS SC SERIES

Bourns is pleased to announce the release of the model SC series miniature resettable Thermal Cutoff (TCO) devices. These are Bourns' next generation of surface mount miniature resettable Thermal Cutoff devices, following the successful SA series.

Miniature resettable thermal cutoff devices traditionally have been used in battery packs that use welding for assembly. However, the new SC series opens these circuit protection devices to multiple new applications as they can be reflow soldered onto printed circuit boards.

Features and benefits

- Miniature Thermal Cutoff (TCO) device
- Surface mount, smallest body size
- Overtemperature and overcurrent protection
- Controls abnormal, excessive current virtually instantaneously, up to rated limits
- Wide range of temperature options
- High corrosion resistance
- Two height options: low profile and high force withstand
- RoHS compliant

Applications

- Battery cell protection for:
  > Notebook PCs
  > Tablet PCs
  > Smartphones
- Overtemperature protection for:
  > USB type C cables (e.g. smart phone cables, notebook AC adapters)
  > Electronic cigarettes
  > Medical heaters

BOURNS SF-3812TM-T SERIES

Bourns is pleased to announce the introduction of a new family of Telefuse™ telecom protectors to the SinglFuse SMD fuse product line to complement its already successful line of SinglFuse™ SMD fuse products. The new SF-3812TM-T model family will serve as a replacement for the discontinued Telefuse™ part numbers B0500T, B1250T, and B2000T.

The new SF-3812TM-T model series is Telcordia GR-1089-CORE issue 4 and UL 60950 compliant, UL 248-14 listed, and intended for use in telecom circuit applications requiring low current protection with high surge tolerance.

Features and benefits

- Single blow fuse for overcurrent protection
- Ceramic tube wire-in-air design
- EIA 3812 size footprint
- Surface mount packaging for automated assembly
- Telcordia GR-1089-CORE and UL 60950 compliant
- UL 248-14 listed
- RoHS compliant and halogen free

Applications

- Telecom and networking equipment
- T1/E1/J1
- 10/100/1000 BaseT Ethernet
- xDSL (VDSL/VDSL2+, ADSL/ADSL2+)
- Fiber to the Curb (FTTC) SLIC interface
- Fiber to the Premises (FTTP) SLIC interface
- POTS systems

BOURNS SM8SF-Q SERIES
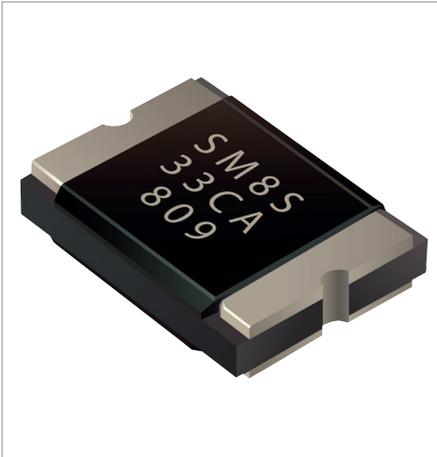
The Bourse SM8SF-Q series is AEC-Q101 compliant and well suited for protecting sensitive electronics against voltage transients generated by inductive load switching and lighting. Bourns® model SM8SF-Q series offers a high Peak Pulse Power (PPK 10/1000μs) of 7000W, assisting designers in meeting ISO7637-2/ISO16750-2 surge specifications. This AEC-Q101 compliant product is also well suited for applications requiring high reliability such as power supplies and equipment used in harsh environments.

Bourns® model SM8SF-Q series is available in a low-profile package just 1.3mm high, enabling designers to achieve compact, high power density, power supply designs.

Features and benefits
- Maximum peak power dissipation: 7000 watts
- Meets ISO7637-2/ISO16750-2 surge specification (varies by test condition)
- RoHS compliant
- AEC-Q101 compliant

Applications
- High peak power applications (up to rated limits)
- High temperature applications (up to rated limits)
- Clamping diode
- Load switching and lighting

BOURNS SM8S-Q SERIES

Bourns is pleased to announce the release of a new ESD/EFT/surge protection series, model SM8S-Q. These unidirectional and bidirectional TVS diodes are well suited for protecting against voltage transients and ESD protection of DC power supplies and data lines. These AEC-Q101 compliant products are also well suited for applications that require high reliability such as power supplies and equipment used in harsh environments.

Features and benefits
- Maximum peak power dissipation: 6600 watts
- Meets ISO7637-2/ISO16750-2 surge specification (varies by test condition)
- RoHS compliant
- AEC-Q101 compliant

Applications
- High peak power applications (up to rated limits)
- High temperature applications (up to rated limits)
- Clamping diode
- Load switching and lighting

Passive

BOURNS SM453229-231N7Y, SM453229-381N7Y, SRF2012A-801Y SERIES

Bourns inductive components product line is introducing the model SM453229-231N7Y and SM453229-381N7Y Chip LAN 10/100/1000 Base-T transformers.

Unlike traditional LAN magnetics built with multiple toroidal core transformers and common mode chokes in a single module, the Chip LAN transformer is a discrete, center-tapped component wound on a drum core and capped with a ferrite plate to emulate the result of the close magnetic path of a toroid core. The model SRF2012A-801Y common mode chip inductor pairs with the Chip LAN transformer to provide EMI suppression.

Features and benefits

- IEEE 802.3 Ethernet compatible
- Discrete transformers and common mode chokes for flexible PCB layout
- PoE+ (SM453229-231N7Y only)
- Pairs with Bourns® model SRF2012A-801Y common mode choke for EMI reduction
- Expanded temperature range: -40 to +85°C
- RoHS compliant
- Shielded construction – low radiation
- Bifilar wound
- Use with Chip LAN transformers SM45322-231N7Y and SM453222-381N7Y
- AEC-Q200 compliant
- RoHS compliant and halogen free

Applications

- LAN interfaces for a variety of telecommunication and network devices
- Pairs with Bourns® model SM453229 series chip LAN transformers to provide EMI suppression

BOURNS TBU-DF SERIES

Bourns is pleased to announce the release of the bidirectional, dual channel model TBU-DF series TBU® High-Speed Protectors (HSPs) for use in data line protection applications.

The Bourns® TBU-DF models are precise and fast switching TBU® protectors constructed using MOSFET semiconductor technology. These TBU® HSPs are designed to protect against faults caused by short circuits, overvoltage transients and faults in battery cells, up to rated limits.

Features and benefits

- Superior circuit protection
- Overcurrent protection
- Blocks surges up to rated voltage limit
- High-speed performance
- Small SMT package
- RoHS compliant

Applications

- RS-485 interfaces
- Exposed sense and data lines
- Factory automation
- Protection modules and dongles
- Process control equipment
- Test and measurement equipment
- General electronics

PUI AUDIO COPPERHEAD SERIES SPEAKERS

PUI Audio is pleased to announce its Copperhead series speakers.

More than ever before, high quality audio is becoming the determining factor when distinguishing between products and driving sales. When the sound quality of your product is on the line, choose high fidelity speakers from PUI Audio.

The Copperhead series was designed to create a family sound across three different speaker sizes: 36mm, 53mm and 78mm square. Specialised alloy cones are paired with optimised high-energy motors to achieve superior frequency response and output, with minimised harmonic distortion. Each speaker features an easy-to-mount square frame.

Features and benefits

- Coated alloy cone for extended frequency response to 40kHz
- 82dB output at 1m (102dB output at 10cm)
- High-energy, double-stacked magnetic motor
- Large 20mm diameter voice coil for high power handling
- Easy-to-mount square frame

VISHAY CRHP SERIES
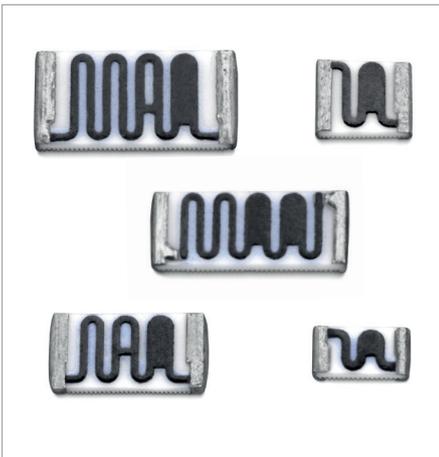
Vishay Intertechnology introduces a new series of high voltage thick film chip resistors that offer high power ratings up to 1.5W and working voltages to 3000V in five compact case sizes ranging from 1206 to 2512.

Available in a variety of styles, termination materials, configurations, and custom sizes for increased design flexibility

Standard devices feature solder-coated nickel barrier or solder-coated non-magnetic terminations in three-side wraparound or single-termination flip chip configurations

Also available with gold, palladium silver, platinum gold, platinum silver, or platinum palladium gold terminations, and a five-sided wraparound configuration

Features and benefits

- High power ratings up to 1.5W
- Working voltages to 3000V
- Available in five compact case sizes ranging from 1206 to 2512
- Outstanding stability of <0.5%
- Wide resistance range from 2MΩ to 50GΩ
- Tolerances down to ± 0.5%
- Temperature coefficients of ± 100ppm/°C
- RoHS-compliant and halogen-free
- Flow-solderable and epoxy- or wire-bondable

Applications

- Medical
- Telecommunications
- AMS
- Industrial
- Automotive
- Consumer applications

Passive

VISHAY CRMA SERIES

Vishay Intertechnology introduces a new series of AEC-Q200 qualified, medium voltage thick film chip resistors. Designed to save space and lower component counts in automotive and industrial applications, Vishay Techno CRMA series devices offer high working voltages up to 1415V in five compact case sizes ranging from 1206 to 2512.

Features and benefits

- AEC-Q200 qualified
- High working voltages up to 1415V
- Five compact case sizes ranging from 1206 to 2512
- Wide resistance range from 150Ω to 75 MΩ
- Tolerances down to ± 0.5%
- Temperature coefficients of ± 100ppm/°C
- Power ratings from 0.30W to 1.0W
- Available with solder-coated nickel barrier or solder-coated non-magnetic terminations
- Offered in three-side wraparound or top-only flip chip configurations

Applications

- Battery management and overvoltage protection in electric vehicles
- Voltage monitoring and regulation in power inverters
- High voltage power supplies
- Defibrillators
- Smart circuit breakers

YAGEO AQ SERIES

Yageo has launched the AQ series of high-frequency automotive grade MLCCs, featuring lead-free terminations, AEC-Q200 qualification, MSL 1 class and a 16V to 50V rated voltage.

Features and benefits

- AEC-Q200 qualified
- MSL 1 class
- AC series soldering compliant with J-STD-020D
- Halogen-free epoxy
- RoHS compliant
- Reduces environmentally hazardous waste
- High component and equipment reliability
- 0603 (1608) size
- 0.2pF to 2.0pF tolerance
- 16V, 25V, or 50V rated voltage

Applications

- General purpose
- Entertainment
- Comfort/security
- Information

ABB POWER ELECTRONICS CP3500AC65TEZ SERIES

ABB Power's CP3500AC65TEZ power supply has an extremely wide programmable output voltage capability. High-density front-to-back airflow is designed for minimal space utilisation and is highly expandable for future growth. This power supply incorporates both RS485 and I 2C communications buses that allow it to be used in a broad range of applications. Feature set flexibility makes this power supply an excellent choice for a set of applications requiring operation over a wide output voltage range.

Features and benefits

- Efficiency exceeding 96%
- Meets 80 PLUS® Titanium requirements
- Compact 1RU form factor with
- 40 W/in3 density
- 3500W from nominal
- 200-240VAC
- 1500W from nominal
- 100 – 120VAC for VO > 40VDC
- Output voltage programmable from
- 23V – 65VDC

Applications

- Lasers
- RF power amplifiers
- Industrial battery chargers

AIMTEC AM10G-NZ AND AM10GH-NZ SERIES

Aimtec adds the AM10G-NZ and AM10GH-NZ 10W series to its SIP8 DC-DC converter family. This new series now increases the power density of our SIP8 line from 9W to 10W. The AM10G-NZ series provides a 2:1 ultra-wide input voltage range while the AM10GH-NZ provides a 4:1 ultra-wide input voltage range (9-36VDC) and comes standard with single output voltages of 3.3, 5, 9, 12, 15 and 24VDC with I/O isolation of 1500VDC.

Features and benefits

- Ultra-wide input voltage range: 9-36VDC
- Operating temperature range: –40°C to +85°C
- Efficiency high up to 86%
- Input under-voltage protection, output short circuit, over-current protection
- High power density, SIP8 package
- International standard pin-out

Power

AIMTEC AM3A-Z SERIES

Aimtec is pleased to introduce its first ever 3-Watt single and dual output DC/DC converter in a compact SIP6 package. With a 4:1 ultra-wide input range, from 4.5-75VDC, the AM3A-Z comes with 1600VDC isolation and a regulated output. This is the smallest regulated and isolated 3-Watt converter ever designed for Aimtec.

This compact design comes with a high efficiency up to 84%, no minimum load requirement and continuous short circuit protection. Furthermore, the ambient operating temperature is from -40°C to +76°C with full power up to 71°C.

This truly innovative series can be used for applications that have limited board space such as mobile phone chargers, portable electronics, IoT and wireless applications.

Features and benefits

- I/O isolation 1600VDC
- Continuous short circuit protection
- Operating temp: -40 °C to +76 °C
- Compact footprint and high-power density
- 4:1 input voltage range
- Compact SIP6
- ON/OFF control
- Efficiency up to 84%

Applications

- IoT
- Industrial
- Telecom
- Portable equipment

AIMTEC AME60-VZ SERIES

The Aimtec AME60-VZ is a brand-new AC/DC converter that offers much greater cost effectiveness due to material normalisation and production automation also leading to improved reliability and performance. Due to these improvements, we are proud to offer you this converter at a price never yet seen for a 60W Aimtec AC/DC converter. Offering a commercial input voltage range of 85-264VAC and output voltages of 5, 12, 15, 24 and 48VDC, this series will greatly benefit your new system design.

This new series offers operating temperatures from -40°C to 70°C with full power up to 55°C depending on models. It also features a 4000VAC isolation for improved reliability and system safety.

Features and benefits

- Universal input: 85 -264VAC/100 -370VDC
- Operating temperature range: -40°Cto +70°C
- High isolation voltage: 4000VAC and regulated ripple and noise
- Output short circuit, over-current, over-voltage protection
- EMI performance meets CISPR32/EN55032 CLASS B
- Certified to IEC62368, UL62368, EN62368 standards (pending)

Applications

- Power grid
- Industrial
- Telecom
- Instrumentation

AIMTEC AMEOF5-BJZ SERIES
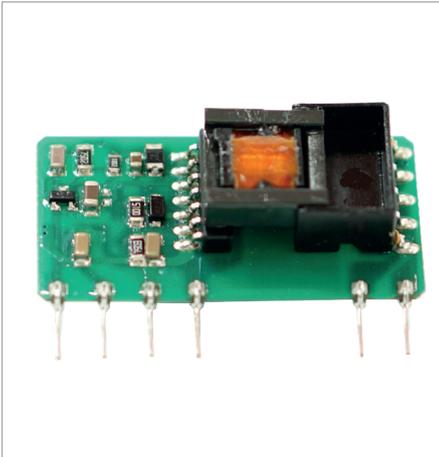
Aimtec's AMEOF5-BJZ features low power consumption, high efficiency and reliability, 4000VAC isolation and continuous short circuit protection. It also meets the IEC/UL/EN62368 standards, which makes it suitable for many industrial applications such as controls, test equipment and instrumentation. Furthermore, the ultra-wide input voltage range also makes this converter a perfect candidate for 3-phase applications.

Features and benefits

- Input: 90-528VAC, 47-63Hz or 100-745VDC
- I/O isolation 4000VAC
- Operating temperature -40°C to +85°C
- Compartopen frame SIP
- Low power consumption ≤ 0.5Wat 528VAC
- Over current protection
- Continuous short circuit protection
- Class II power supply

Applications

- Automation
- Test equipment
- Industrial
- 3-phase metering

AIMTEC AMSRB1-78JZ, AMSRL1-78JZ AND AMSRL-78JZ SERIES

Aimtec's switching regulators have always appealed to customers thanks to their compact size, high efficiency and cost effectiveness. Today, Aimtec is proud to introduce three new series of switching regulators, the AMSRB1-78JZ, the AMSRL1-78JZ and the AMSRL-78JZ all meeting EN62368, perfect for IoT applications.

Features and benefits

- Switching regulator
- SMD package
- Low noise
- Efficiency up to 95%
- Wide input
- Remote ON/OFF
- Non-isolated
- Short circuit protection
- Adjustable output voltage
- Low quiescent current 0.2mA
- High MTBF
- RoHS compliant

Applications

- Battery-operated systems
- Controls and sensors
- Medical-grade applications
- HVAC systems
- Telecommunications
- Highly precise measurement equipment

Power

ARTESYN CSU SERIES

Artesyn's CSU front end series is designed to provide a flexible power conversion solution for compute, storage, and networking equipment in the common redundant power supply (CRPS) form factor.

This series of AC-DC products is housed in the industry standard 1U x 73.5mm x 185mm CRPS form factor. Featuring individual power ratings from 550W up to 2400W, the choice for power supplies can cover cost-sensitive entry level systems, or power hungry applications where there are space constraints. Designed to provide the highest power in the smallest form factor, the series offers class-leading power density of 75W/in3. The common form, fit, and function for all products in the family provides a path for power capacity flexibility, future-proofing your system designs.

Features and benefits

- Platinum efficiency certified
- 12.2V main output
- 12.0V 42W standby output
- Up to 1400W at low line input
- Best iTHD performance
- Up to 55°C operating temperature

ARTESYN LGA50D PRODUCT SERIES

Artesyn's LGA50D is a non-isolated DC-DC converter that is designed for cost and space sensitive applications.

This non-isolated unit offers two independent and configurable 25A, 50W outputs, which can also be combined to a single configurable 50 amp, 100 watt output. With a footprint of 25.4 x 12.5mm.

The module offers two independent and configurable 25A, 50W outputs, which can also be combined to a single configurable 50A, 100W output. You can generate higher current rated rails by connecting up to 4 units in parallel so that up to 200A can be supplied as a single power rail.

Features and benefits

- Two-phase design
- Dual or single output configuration possible
- High efficiency up to 95.5%
- Size: 25.4 x 12.7 x 12.192mm (JJ) or 10.668mm (JSBJ)
- No minimum load requirement
- Wide operating temperature range
- Exceptional power density
- Analog or digital control
- Automatic loop compensation
- IPC9592B compliant @ Vin = 13.2VDC
- Tape and reel packaging
- Reflow compatible
- Possible to stack up to 4 for 200A
- I-mon and T-mon suported
- Two (2) variants supported:
  - > Block pin termination
  - > Solder bump termination
- Two year shelf life

BEL POWER SOLUTIONS PET2000-NAS446 SERIES

Bel Power Solutions' PET2000-NAS446 is a 2000 watt AC-DC power supply that converts mains AC power into four main +12VDC outputs, delivered through cables with connectors designed to power individual processor boards. This new front-end power supply is designed for complex server systems with multiple processor boards, including GPU, ASIC and FPGA devices, running high performance computing applications such as blockchain processing, cryptocurrency mining, artificial intelligence (AI), machine learning, cyber security, real-time consumer analytics and scientific data analysis or medical research.

Features and benefits
- Best-in-class, 80 PLUS® platinum efficiency
- Auto-selected input voltage ranges: 90–140VAC, 180–264VAC
- AC Input with power factor correction
- 2000W continuous output power capability
- Output cable wire harness set included
- Always-ON 12V standby output
- Full digital controls for improved performance
- High density design
- Small form factor: 73.5 x 40.0 x 331.6mm
- PMBus® communication interface for control, programming and monitoring
- Status LED with fault signaling

Applications
- Cryptocurrency mining
- Blockchain applications
- Networking switches
- Servers and routers

BEL POWER SOLUTIONS TET4000 SERIES

Bel Power Solutions' TET4000 series is a 4000W power supply designed to provide the highest efficiency (Titanium) power conversion for datacenters being built to Open Compute Project (OCP), Open Data Center Committee (ODCC) or Central Office Re-architected as a Datacenter (CORD) standards. The TET4000 series is the highest power 48VDC model in Bel Power Solutions' power supply portfolio and one of very few 4000W 48VDC server power supplies available as standard product.

Features and benefits
- Best-in-class efficiency of up to 98%
- Wide input voltage range: Full power available at 200-250VAC, reduced output power at 100-200VAC
- AC input with power factor correction
- 4000W main output with programmable voltage set-point of 42-58VDC
- Optional standby output 12VDC/60W
- One single rear side connector for input and output power and signaling
- Parallel operation with active digital current sharing through CAN bus
- Hot-plug capable

Applications
- Data center
- High performance servers
- Routers
- Switches

Power

BEL POWER SOLUTIONS PFE3600 SERIES

Bel Power Solutions' platinum efficiency PFE3600 series power supply, which delivers more power in a standard form factor for big data and cloud computing applications. This power supply features a compact form factor (69 x 42 x 555mm) which converts standard AC mains power or high voltage DC bus voltages into a main output of 12VDC.

Features and benefits

- Best-in-class, platinum efficiency
- Wide input voltage range: 90–300VAC
- AC input with power factor correction
- DC input voltage range: 192–400VDC
- Hot-plug capable
- Parallel operation with active current sharing thru analog bus

Applications

- High performance servers
- Routers
- Switches

DELTA ADT SERIES

The Delta ADT series range of 60W of AC-DC desktop adapters. This series offer single output voltages of 12VDC, 15VDC, 19VDC and 24VDC with 60W output power (ADT-060A). The products accept universal input voltage from 85-264VAC and has a wide operating temperature range from -10°C to +60°C with full power up to +40°C. The extremely low no load power consumption below 0.15W is much lower than the ErP Lot 7 requirement of 0.5W in the European Union (EU). The ADT-060A comes certified with IEC/EN/UL 62368-1 approval that will replace IEC 60950-1 for ITE which expires in December 20, 2020. In addition, they also meet the EMI approvals to EN 55032 Class B.

Features and benefits

- Up to 89% efficiency
- Meet ErP Lot 7 and DOE VI
- No load power consumption <0.15W
- Over-voltage/load/temperature and short circuit protections

DELTA CLIQ VA SERIES

Delta has introduced the CliQ VA series of DIN rail power supply with integrated LCD display. The CliQ VA series display module offers three key functionalities.

1. Display mode will scroll through values such as output voltage, output current, cap life expectancy, Power Supply Unit (PSU) temperature, etc.

2. Maintenance alarm setting allows the user to set a pre-determined maintenance alarm before the power supply reaches the end of its expected cap life.

3. Error mode will display the type of error if the PSU enters and recover from OVP, OLP, SCP or OTP mode. This enables the user to quickly identify the cause of any abnormalities.

Features and benefits

- Universal AC input voltage range
- LCD display monitoring output current/ voltage/peak current and PSU temperature
- Lifetime expectancy monitoring and alarm signal
- Built-in active PFC with up to 94% efficiency
- Power boost of 150% for 5 seconds
- Advanced Power Boost (APB) for breaking the fuse
- DC OK contact and LED indicator for DC OK/ overload
- Conformal coating on PCBAs to protect against common dust and chemical pollutants

DELTA PJU SERIES

The Delta PJU series open frame power supply comes with integrated DC-UPS function. The PJU-60W, is designed to operate with an external 12VDC or 24VDC SLA battery. They will switch over to battery mode operation (batteries not included) seamlessly to prevent system downtime in the event of power disruption or unexpected loss of AC input power. The diagnostic monitoring signals available in this series, for AC OK and battery low status can alert the user.

Features and benefits

- Universal AC input voltage range
- Zero switch over time from loss of AC to battery operation
- Protection against reverse polarity battery connection
- Built-in diagnostic monitoring for AC OK and battery low status
- Overvoltage/overcurrent/over temperature/ short circuit protections
- Built-in over current and short circuit protection in buffering (battery discharging) mode operation

Power

DELTA PMT2 SERIES

The Delta PMT2 series, designed based on a low profile of <30mm, is the latest series of panel mount power supply from Delta Electronics. This series is currently available in 50W, 100W and 150W output power with 12V and 24V output voltage. They offer a wide operating temperature range from -30°C to +70°C and can withstand shock and vibration requirements (in accordance to IEC 60068-2-27 and IEC 60068-2-6 respectively). The PMT2 series is designed for cost competitive applications without compromising on quality and reliability. The products have an expected life time of 10 years.

Features and benefits

- Safety approval IEC 60950-1, IEC 60335-1, IEC 61558-1 and IEC 61558-2-16
- Universal input and selective switch input for 150W
- No load power consumption <0.2 for 50W, <0.3 for 100W and <0.5 for 150W
- Low leakage current <0.75mA at 240VAC /50Hz
- Low profile design: <30mm height
- Conforms to harmonic current IEC/EN 61000-3-2, Class A

MEAN WELL EPP-500 SERIES

MEAN WELL is expanding the 127 x 76.2mm open frame product offering to reach 500W output power with EPP-500 series.

As a response to the increasing demands for higher power density in open frame power supply applications, MEAN WELL is expanding the 127 x 76.2mm open frame product offering to reach 500W output power. In addition to the large portfolio of industrial standard 76.2 x 50.8mm, 101.6 x 50.8mm, 127 x 76.2mm products such as the EPS/EPP 15~400W power supplies, MEAN WELL is proud to release the 500W high power density EPP-500 series.

Features and benefits

- 127 x 76.2mm high-power miniaturised design
- Full range 80~264VAC input with built-in PFC function
- 320W with cooling by free air convection and 500W with 25CFM forced air, 550W peak load (3 seconds)
- Suitable for installation in class I (with FG) or class II (no FG) systems
- No load power consumption <0.5W

Applications

- Industral automation maschinery
- Industrial control system
- Mechanical and electrical equipment
- Electronic instruments, equipments or apparatus

MEAN WELL NID35/65/100 SERIES

The MEAN WELL NID35/65/100 are pin to pin compatible with NID30/60 which features seamless upgrade. The main features are: 10.5~53VDC wide range input voltage to cover 24V/48V DC Bus voltage commonly used in systems, operating temperature -30 to +85°C with convection cooling. It can meet EN55032 class A EMI radiation standard without adding extra component, 3-year long-term warranty. It fits for use in information communication, networking equipment, industrial automation, telecom equipment and distributed power architecture and other related applications..

Features and benefits

- Economical open frame design
- Wide input range
- High efficiency up tp 97%
- Remote ON/OFF control
- Size 50.8 X 13.0048 X 10.9982mm (SIP package) - NID35
- Size 50.8 x 26.0096 x 10.9982mm (SIP package) - NID65
- Size 50.8 x 27.4828 x 11.9888mm (SIP package) - NID100
- Protection: short circuit/overload/over voltage
- -30~+85C wide working temperature

- Cooling by free air convection
- Comply to EN55032 class A without additional components
- Trimming output (optional)
- 3 years warranty

Applications

- Data center

MEAN WELL PWM-60/90(DA) SERIES

The MEAN WELL PWM (Pulse Width Modulation) series is designed with constant voltage output product which can operate with the regular LED soft strip for decoration application and further for any DC input luminaires. The whole series design with 3 in 1 or DALI dimming function can dim LED strip without extra PWM controller, reducing the total installation cost. It is a perfect fit for indoor decoration and commercial application. In addition, the DALI function follows the IEC 62386-101/102 and 207 regulations; it can operate with all DALI certify dimmer or controller.

Features and benefits

- Constant voltage PWM style output.
- Plastic housing with class II/class 2 (60W/90W) design.
- Built-in active PFC function and meet IEC61347 regulation.
- Fully encapsulated with IP67 level
- Dimming functions: 3 in 1 dimming (dim-to-off) or DALI.
- Protection functions: OVP, SCP, OLP, OTP
- 5 years warranty

Applications

- LED strip lighting
- Indoor LED lighting
- LED decorative lighting
- LED architecture lighting

Power

MEAN WELL XBG-160 SERIES

The MEAN WELL XBG-160 series is an LED driver for high bay and outdoor luminaires applications. With its patented appearance and cutting-edge circuitry design, XBG series is believed to blow up a phenomenon. XBG-160 series adopts the MEAN WELL patented metal housing circular design (patent number CN201220314551). The constant power circuitry design of the HBG series enables users to easily adjust drive current and greatly reduce the SKU of models.

Features and benefits

- Wide range 100~305VAC mains input
- Circular shape with patent design (patent no.CN201220314551) and seal housing IP67
- Built-in active PFC function and constant power mode
- AC input cable with waterproof connector for flexible using
- Surge protection: 6 KV/4KV
- Protections: short circuit, over voltage, over temperature
- Life time >50,000Hrs. and 5 years warranty

Applications

- LED bay lighting
- LED stage lighting
- LED spot lighting
- Explosion-proof lighting
- Type HL LED driver for class division 2

MURATA DSQ/DAQ/DCQ SERIES

Murata has introduced a series of 600W, DOSA compliant, 12V output, digital quarter-brick DC-DC converters from Murata Power Solutions. The series was designed for high reliability applications based on a 32-bit ARM processor that supports the latest PMBus commands for digital control and telemetry functions. The DSQ, DCQ and DAQ converters support the full 'TNV' input range of 36 – 75V, with a typical efficiency of 96% @ full load 48Vin.

Features and benefits

- Designed, tested and qualified according to the industry standard IPC9592 for reliability requirements
- State-of-the-art performance with an efficiency rating of 96% with 600W output power at 55°C
- Advanced pre bias start-up eliminates system start up issues
- Baseplate included on all variants for optimal thermal performance

Applications

- Telecommunications networking equipment
- Computing equipment
- Wireless base stations
- PoE systems
- MicroTCA
- Fan trays
- Test equipment

Sensors

AMPHENOL ADVANCED SENSORS NPA SERIES
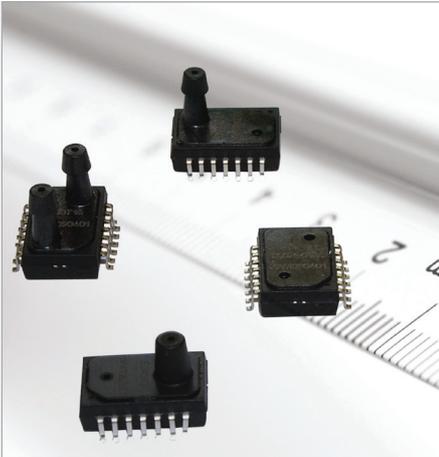
The Amphenol Advanced Sensor NPA series of surface-mount pressure sensors is provided in a miniature size as a cost effective solution for applications that require calibrated performance. Packaged in a SOIC14 pin surface mount, the NPA series is available in gauge, absolute and differential pressure ranges with either mV, amplified analog or digital outputs. The sensor is intended for printed circuit board mounting and delivered in tape and reel form to simplify manufacturing handling.

Features and benefits

- Surface-mountable
- Differential, gauge, absolute and low pressure
- 254mm H2O to 30PSI full scale
- Output options: amplified analog, digital serial (14bit), digital I2C, uncalibrated mV
- On chip temperature sensor in digital mode
- Operating temperature range of -40°C to 125°C
- Total error band <±1.5% FSO
- Up to 60psi proof pressure

AMPHENOL ADVANCED SENSORS TELAIRE SM-UART-04L SERIES

The Amphenol Telaire SM-UART-04L PM2.5 particulate dust sensor is designed for a wide range of air quality applications where fine particle dust needs to be measured. Applications include air quality meters and air purifiers for both residential and light industrial monitoring and control. The optical design leverages laser technology, which allows customers to achieve excellent performance with balanced reliability. SM-UART-04L is an ideal solution for industrial and consumer applications.

Features and benefits

- Laser optical dust sensing with high accuracy and fast response
- PM2.5 output
- PM10 calculated output
- ROHS and REACH compliant
- UART series digital output
- Compact size
- Flexible mounting style
- Protected from EMC intrusion by metal case
- Wide detection range
- Average time before re-calibration: 40,000hrs

Applications

- Indoor air quality monitoring
- Air conditioners and HVAC
- Air purifiers and cleaners
- Outdoor dust monitoring (with additional protection)

Sensors

BOURNS BPS SERIES ENVIRONMENTAL

Bourns Sensors and Controls Product Line is introducing a new line of environmental sensors based on Microelectromechanical Systems (MEMS) technology. The BPS line has been designed to provide high sensitivity/accuracy, long-term reliability, high temperature capability and harsh media compatibility.

Features and benefits
• Compensated output
• Tape and reel packaging
• RoHS compliant

TE CONNECTIVITY MS5840-02BA PRESSURE SENSOR

TE Connectivity (TE) introduces the MS5840-02BA pressure sensor; one of the lowest profile micro altimeters in the market. This ultra-compact gel-filled pressure and temperature sensor is optimised for both altimeter and barometer applications and is ideal for applications with tight space constraints. This MEMS based sensor includes a high-linearity pressure sensor with ultra-low power 24-bit digital output (I2C) and an altitude resolution at sea level of 13cm. The board level design delivers sensing accuracy for both pressure (±0.5 mbar) and temperature (±2°C) measurements.

Features and benefits
• Low profile and small footprint: 3.3 x 3.3 x 2.7mm
• Provide precise digital 24-bit pressure and temperature measurements with ultra-low power requirements
• Designed for harsh environments with a robust construction featuring a ceramic and metal package
• Ensure water resistance and component protection with silicone gel plus black pigments added for additional light protection
• Enable high integrity sealing when used with an O-ring (1.8 x 0.8mm)

Applications
• Multisport watches
• Fitness trackers
• Swim watches
• Bike computers
• Mobile altimeter/barometer systems
• Personal navigation devices
• e-cigarettes
• Drones

TE CONNECTIVITY TSD305 SERIES

TE Connectivity introduces the Digital Thermopile Sensor (TSD) contactless temperature measurement system which addresses a full range of critical design and performance demands: accuracy, speed, low power/energy efficiency, and limited space requirements. The TSD sensors include an infrared sensor (thermopile) and a sensor signal conditioner, and can be interfaced to any microcontroller by an I2C interface.

Features and benefits

- Measure temperature without physical contact and low current consumption
- Support greater design flexibility with improved EMI resistance and the need for fewer components like low offset/low noise amplifier and associated filters
- Fit into limited spaces with a small, TO5 package
- Streamline integration with an I2C interface

Applications

- Contactless temperature measurement
- Environmental monitoring
- Industrial process measurement and control
- Motion and occupancy sensing
- NDIR gas sensing

Wireless

MOLEX 208482 SERIES

The Molex 208482 series is designed for fast and easy integration into wireless devices at minimal implementation cost, side and center-fed cable flexible antennas enable high-performance RF transmission for the most demanding Wi-Fi applications.

Features and benefits

- Double sided TESA adhesive
- Cable and connector can be customised
- UFL-type connector
- Micro-coaxial cable, 100mm
- Solder pad for ground
- Highly compact, sidefed monopole antenna
- Solder pad for core
- Cable and connector can be customised
- Topside of the polyflexible antenna
- Rigid PCB antenna with two holes on both sides for screw-nut mounting
- Double-sided adhesive on the antenna reverse
- Micro-coaxial cable (50, 100, 150, 200, 250, 300mm options)

Applications

- Consumer
- Automotive
- Industrial

Wireless

MOLEX 208890 SERIES

The Molex GNSS/GPS-enabled devices need highly compact antennas with high radiation efficiency performance. Measuring only 3.20 x 1.60 x 1.10mm, Molex low-profile GNSS ceramic antennas offer maximum space savings with an average total radiation efficiency of at least 60% over 1561 to 1602MHz bands.

Features and benefits

- Feeding pad
- Antenna radiator (low-profile GNSS)
- Ceramic patch antenna (GPS/BEIDOU/GLONASS)
- RHCP version offers horizontal plan of PCB (GPS/BEIDOU/GLONASS)
- Pick-and-place feature (RHCP/helix SMT LDS-MID GPS antenna)
- Feeding pad (RHCP/Helix SMT LDS-MID GPS antenna)
- Ceramic antenna housing (low-profile GNSS)
- Feeding pad (double-sided adhesive) (GPS/BEIDOU/GLONASS)
- Silver pin (GPS/BEIDOU/GLONASS)

- Laser Direct Structuring (LDS)-formed antenna radiator (RHCP/Helix SMT LDS-MID GPS antenna)
- Gold (Au) over Nickel (Ni) traces (RHCP/Helix SMT LDS-MID GPS antenna)

Applications

- Commercial vehicle
- Consumer
- Industrial

MOLEX ISM ANTENNAS
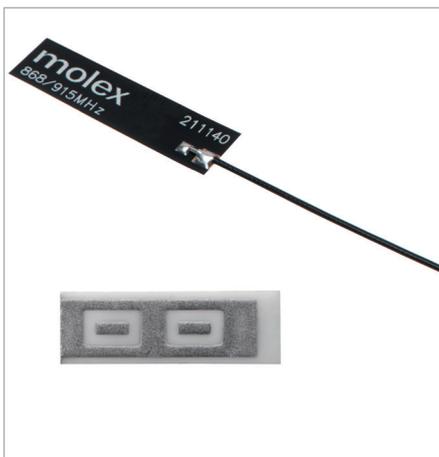
Molex ISM standalone antennas combine high RF performance with ease of integration over 433, 868 and 915MHz bands for advanced industrial, scientific and medical devices. They are built on proprietary MobliquA™ technology, which enables significant antenna volume reduction of up to 75% compared with conventional designs.

Features and benefits

- Topside of the poly-flexible antenna
- Double-sided adhesive on the antenna reverse
- 6 micro-coaxial cable length options (50, 100, 150, 200, 250, 300mm)
- UFL-type connector

Applications

- Industrial
- Scientific
- Medical

TE CONNECTIVITY GNSS ANTENNAS

TE Connectivity's new standard portfolio of GNSS antennas make positioning wireless connections more reliable by using a range of multi-band antennas for individual device configuration. With the upcoming 5G roll out and exponential increase of wireless traffic, quality of service and spectral efficiency are becoming more and more critical for a non-interrupted wireless experience. Our new standard portfolio of GNSS antennas address key antenna performance goals – efficiency and bandwidth – and cover different requirements, from generic consumer navigation to high precision positioning.

Features and benefits

- Reduce antenna size by integrating multi-band, multi-surface and multi-function (active) antennas into one device
- Save costs with minimum associated components required
- Support multi-band and multi-standard designs – GPS, GLONASS, BeiDou, Galileo

Applications

- Tracking devices
- Navigation devices
- Security applications
- Remote controls
- Autonomous driving
- Infotainment
- Unmanned vehicles
- Smart home
- Wireless handhelds

TE CONNECTIVITY MULTI FUNCTION AND WI-FI CEILING ANTENNA

The TE Connectivty multi function MiMo antenna delivers connectivity for GSM (up to LTE), global positioning (compatible with GPS, Glonass, Galileo, and Beidou standards) and Wi-Fi connectivity in a robust housing. Designed for outdoor use, the antenna is compliant to IP66 and even protects against washing system water jets. It also withstands direct sunlight.

Features and benefits

- Shark fin style design reduces energy consumption
- 2x2 multi function GSM function improves signal transmission and data speed
- GPS/Glonass/Galileo/Beidou function allows for positioning in the same antenna saving installation cost and time
- 2x2 or 3x3 Wi-Fi antenna function allows for positioning in the same antenna saving installation cost and time
- Installation in confined spaces (e.g. double decker) possible
- Better reception for passengers means enhanced customer satisfaction
- Placement of the antenna can be anywhere in the train, increasing the design flexibility
- Antenna is EN45545-2 HL1-3 approved and can be applied in rolling stock.

Applications

- Cars
- Trucks
- Pumps
- Generators
- Emergency vehicles
- Bus
- Tram
- Train
- Metro
- Passenger carriages
- Public transportation

Connectors

	Automotive connectors	Backplane – DIN 41612/2mm/high speed	Board-to-board	Cable – FFC/ribbon flat/round	Cable assemblies	Circular – heavy duty	Circular – industrial	Circular – medical	Circular – military and aerospace	Fibre optics	I/O – audio/signal/mobile	I/O – DSUB and accessories	I/O – DVI/HDMI/SCSI	I/O – modular jacks and plugs/SDL	High Speed I/O – USB/Firewire/Infiniband/IEC	Lighting	Memory card – multimedia/PC cards	Memory card – smart card/SIM	Power IEC – connectors/entry modules	Power IEC – distribution units	Rectangular – heavy duty	Rectangular – military and aerospace	RF inc. coax. and antennas	Sockets – DIL/SIL	Sockets – PLCC/PGA/BGA	Sockets – SIMM/DIMM	Sockets – battery/fuse	Terminal blocks	Terminal faston	Wire-to-board – FFC/FPC	Wire-to-board – IDC 2.54/2.00/1.27	Wire-to-board – headers/receptacles/others	Wire-to-wire	Accessories, pins and contacts
3M		•	•	•	•					•	•					•	•							•	•						•	•	•	•
Alps Alpine																	•	•																•
Amphenol	•	•	•	•	•	•	•	•	•	•	•	•			•						•	•	•								•	•	•	•
Aptiv (formerly Delphi Interconnection Systems)	•				•			•	•						•																	•	•	
AVX		•	•		•											•	•	•				•			•					•	•	•	•
Bel Stewart		•	•					•	•		•			•																				•
Bourns			•															•																•
Bulgin					•	•					•			•					•	•							•							
Cinch Connectivity																							•											
CviLux		•	•							•				•										•	•	•	•				•	•	•	•
Deltron Components		•	•							•									•	•														
Dubilier	•	•	•	•	•					•	•	•		•			•				•	•	•				•	•		•	•	•	•	•
Eaton																												•						•
Glenair				•		•	•		•		•	•										•	•											
Greenconn	•		•		•						•				•																•			
Harwin		•	•		•									•										•	•						•	•		•
Hirose	•		•	•		•	•	•	•		•	•		•			•													•	•	•	•	•
ITT	•	•			•			•	•		•	•					•				•	•	•	•									•	•
Kycon					•						•	•	•	•										•		•	•							
Lumberg	•		•		•		•				•			•															•		•	•	•	•
Molex	•	•	•	•	•	•	•		•		•			•					•			•	•	•			•			•	•	•	•	•
Omron			•	•			•				•			•									•	•	•									
PRECI-DIP		•																						•	•	•							•	•
Pulse														•									•							•				
Samtec		•	•	•	•		•				•	•			•									•	•	•					•	•	•	•
Schaffner																			•	•														
Schurter					•						•								•	•							•							
Switchcraft					•	•	•				•			•					•	•														
TE Connectivity	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•		•		•	•	•	•			•			•	•	•	•	•
Weidmuller					•																									•				

Electromechanical

	DIP switches	Push switches	Rocker/toggle/slide switches	Rotary switches	Tact switches	Snap-action/detector switches	Multi control switches	Stainless steel/security/rugged switches	Keypads and keyboards/touch panel switches	Keylock switches	Reed switches	Circuit breakers	Signal relays	Automotive relays	Power relays	PhotoMOS relays	Solid state relays	Contactor relays	Chassis filter	IEC inlet filters and output filters	Fans AC/DC/blower	Heatsinks	Thermal interface materials	Encoders	Potentiometers	Thermal printers	Enclosures, PCB hardware and accessories
3M																							•				
Aavid Thermalloy																					•	•	•				
Alps Alpine	•	•	•	•	•	•	•																	•	•	•	
Arcoelectric		•	•	•				•																			
Bourns		•		•	•																			•	•		
Bulgin		•						•												•							
C&K Components	•	•	•	•	•	•	•	•		•																	
Deltron Enclosures																											•
Diptronics	•	•	•	•	•	•	•																	•			
ebm Papst																					•						
Eledis	•	•	•	•	•	•	•	•		•	•	•												•	•		
Fujitsu													•	•	•			•									
Grayhill	•	•	•	•	•	•	•																	•			•
Harwin																											•
ITW Switches	•	•	•	•	•			•																			
knitter-switch	•	•	•	•	•	•	•	•		•	•													•			
Molex								•																			
Nidec Copal	•	•	•	•	•	•	•			•														•	•		
nVentSchroff																											•
Omron	•		•		•	•							•	•	•	•	•	•									
Panasonic		•			•	•	•																	•	•		
Panasonic Electric Works		•	•		•								•	•	•	•	•	•									
Roxburgh EMC																			•	•							
Schaffner																			•	•							
Schurter		•			•				•	•		•								•							
Switchcraft		•	•																								
TDK (inc Epcos)																			•	•							
TE Connectivity	•	•	•	•	•	•	•	•		•	•		•	•	•		•	•					•	•	•		•
Vishay																								•	•		

Passive

	Ceramic capacitors single layer	Ceramic capacitors leaded	Ceramic capacitors MLCC	Ceramic capacitors safety caps	Ceramic capacitors trimmer caps	Electrolytic capacitors leaded	Electrolytic capacitors SMD	Electrolytic capacitors snap-in and large can	Electric Doublelayer Capacitors (EDLC)	Tantalum capacitors leaded/leaded low ESR	Tantalum capacitors SMD/SMD low ESR	Polymer tant./aluminium/hybrid	Film capacitors leaded	Film capacitors SMD	Film capacitors suppression	Circuit protection – fuses, fuseholders	Circuit protection – resettable devices	Circuit protection – NTC/PTC thermistors	Circuit protection – varistors	Magnetics coils, inductors, chokes	Magnetic – soft ferrite	Resistive MELF	Resistive leaded	Resistive networks/arrays	Resistive precision pots	Resistive SMD	Resistive trimmer pots	Resistive wire wound	Filters and antennas	Frequency control crystals/oscillators/resonators	Electromagnetic/piezo buzzers, sounders, transducers and microphones	Active components
Abracon																				•									•	•		
AVX	•	•	•	•					•	•	•	•	•		•	•		•	•	•									•	•	•	•
Bel Fuse																•	•			•	•											
Bourns																•	•	•	•	•				•	•	•	•	•				•
Datatronic																				•	•								•			
Dubilier			•			•		•								•																
Eaton									•							•	•		•	•												
Fagor																																•
Fox Electronics																														•		
Harvatek																																•
Kemet	•	•	•	•		•	•	•	•	•	•	•	•	•						•	•								•			
Kingbright																																•
Kingstate																															•	
Micro Crystal																														•		•
Murata	•	•	•	•	•			•					•				•	•		•	•						•		•	•	•	•
NIC	•	•	•			•	•	•	•	•	•	•				•	•	•	•	•	•			•		•						•
Nichicon						•	•	•		•		•																				
Panasonic						•	•				•	•	•	•		•	•	•	•	•	•			•		•			•	•	•	
PUI Audio																															•	
Pulse																				•	•								•			
Qinlon																															•	
Rubycon						•	•	•				•	•	•																		
Samsung Electro-Mechanics			•								•									•							•		•			
Schaffner																				•	•											
Schurter																•													•			
Taiyo Yuden		•	•						•											•									•			•
TDK (inc Epcos)		•	•	•		•	•						•		•					•	•								•		•	
TE Connectivity			•				•				•					•	•	•	•	•	•	•	•	•	•	•	•	•	•			
Vishay	•	•	•	•	•	•	•	•		•	•					•	•	•	•	•	•	•	•	•	•	•	•	•		•		•
Vitrohm																						•	•			•	•					
VPG																								•	•	•			•			
Yageo		•	•			•	•						•						•	•	•		•	•		•			•	•		

Power

	Standard/bricks	DIN rail/panel mount	Medical	Digital	Railway/transportation	IGBT/MOSFET driver	Point of load/PIM	Regulators	EMI-filters	LED Driver	Open frame/U frame	Panel mount/metal case	Medical	Board mount	Adaptors/externals	Conduction cooled	Railway/transportation	Din rail	LED driver	Modular	Front end/high power	Power management	Inductors/chokes	Transformers
	DC – DC										AC – DC												Magnetics	
ABB Power Electronics	•		•	•			•	•			•	•				•					•			
Aimtec	•		•		•			•	•	•	•	•				•		•						
Artesyn	•		•	•			•	•			•	•	•	•	•	•	•	•	•	•				
Bel Power Solutions	•	•	•	•	•		•	•	•		•	•	•			•	•	•		•	•	•		
Cyntec						•	•																•	
Delta Electronics	•	•	•	•	•		•	•	•		•	•	•	•	•	•	•	•	•	•	•			
Excelsys											•	•				•	•			•	•			
Flex Power Modules	•			•	•		•	•																
Fulham (incl. Lumotech)										•									•					
Innergie															•									
Mean Well	•	•	•		•			•		•	•	•	•	•	•	•	•	•	•	•	•	•		
Murata PS	•		•	•	•	•	•				•	•	•			•					•		•	•
Premier Magnetics																							•	•

Wireless

	Inductive power and date transfer	NFC	RFID	ANT	Bluetooth	Zigbee	Thread	WiFi	Optical wireless communication	LoRa	SigFox	NB-IoT
		PAN				LAN				LPWAN		
Fujitsu					•					•		
Murata		•	•		•		•	•		•	•	•
Panasonic		•	•		•	•	•	•				
Taiyo Yuden		•		•	•	•	•	•	•			
TE Connectivity	•											

Sensors

Company	Audio	Electrical	Gas/atmospheric							Liquid				Magnetic					Motion				Objects/proximity						
	Microphone	Current	Air quality	Barometric	Dust	CO_2	Flow	Humidity	Pressure	Conductivity	Flow	Level	Turbidity	Hall effect	Ansiotropic magnetoresistive	Giant magnetoresistive	Tunnel magnetoresistive	Reed switch	Accelerometers	Gyroscopes	Inclinometers	Inertial (other)	Detect switch	Micro-displacement	Photosensor	Proximity	Triangular	Touch	Ultrasonic
Alps Alpine		•		•				•								•										•			
Amphenol Advanced Sensors			•	•	•	•	•	•	•	•			•																
AVX																													
Bourns														•															
C&K Components																•							•						
Diptronics																							•						
Eaton		•																											
Eledis																							•	•					•
Grayhill											•															•			
IST						•		•		•	•																		
KEMET (inc. NEC Tokin)		•																											
Kingbright																										•			
Kingstate	•																												•
Molex																										•			
Murata				•				•								•			•	•	•					•			
Nidec Copal		•						•																					
OMRON				•	•		•	•											•						•	•	•		
Panasonic				•		•		•											•	•	•		•			•	•	•	
PUI Audio	•																												•
Pulse		•																											
Quinlon																													•
Silicon Microstructures				•					•																				
TDK (inc Epcos/Invensense)	•	•		•		•	•	•								•			•	•		•							
TE Connectivity	•	•		•		•	•	•	•	•	•					•			•	•	•	•	•	•	•	•		•	•
Vishay														•															

	Optical				Position					Thermal		
	Ambient light	Human vision	Infrared	Microphone	Compass	Encoder – magnetic	Encoder – optical	Resistive	Resolver	IR thermopile	Temperature	Temperature switch

Offices

AUSTRIA
Schönbrunner Str. 297-307
A-1120 Vienna
Phone: +43 1 86642 0
Fax: +43 1 86642 250
wien@avnet-abacus.eu

BELARUS
c/o Avnet Abacus Russia
Office 26, Building 2
10 Korovinskoye Shosse,
127486 Moscow
Phone: +7 (495) 737 3689
Fax: +7 (495) 737 3686
belarus@avnet-abacus.eu

BELGIUM
De Kleetlaan 3
1831 Diegem
Phone: +32 2 227 2000
diegem@avnet-abacus.eu

BULGARIA
c/o Avnet Abacus Austria
Schönbrunner Str. 297-307
A-1120 Vienna
Phone: +43 1 86642 0
Fax: +43 1 86642 250
bulgaria@avnet-abacus.eu

CROATIA
c/o Avnet Abacus Slovenia
Dunajska Cesta 167
1000 Ljubljana
Phone: +386 (0)1 560 97 54
Fax: +386 (0)1 560 98 78
croatia@avnet-abacus.eu

CZECH REPUBLIC
c/o Avnet Abacus Austria
Schönbrunner Str. 297-307
A-1120 Vienna
Phone: +43 1 86642-0
Fax: +43 1 86642 250
praha@avnet-abacus.eu

DENMARK
Knudlundvej 24
DK-8653 Them
Phone: +45 86 84 84 84
Fax: +45 86 84 82 44
them@avnet-abacus.eu

Lyskær 9, DK-2730 Herlev
Phone: +45 86 84 84 84
Fax: +45 43 29 37 00
herlev@avnet-abacus.eu

EGYPT
Canan Residence
Hendem Cad.
No:54 Ofis A2
Serifali Umraniye Istanbul
TR – 34775 Turkiye
Phone: +90 216 52 88 370
Fax: +90 216 52 88 377
egypt@avnet-abacus.eu

ESTONIA
Aida 5,
EE-80011 Pärnu
Phone: +372 56637737
paernu@avnet-abacus.eu

FINLAND
Pihatörmä 1 B
FI-02240 Espoo
Phone: +358 (0) 207 499 220
Fax: +358 (0) 207 499 240
espoo@avnet-abacus.eu

FRANCE
Immeuble Carnot Plaza
14 Avenue Carnot
91349 Massy Cedex, Paris
Phone: +33 (0) 1 6447 2929
Fax: +33 (0) 1 6447 9150
paris@avnet-abacus.eu

8 chemin de la Terrasse
Bat D 1er étage
31500 Toulouse
Phone: +33 (0) 5 6247 4787
Fax: +33 (0) 5 6247 4761
toulouse@avnet-abacus.eu

35 avenue des Peupliers
Les Peupliers2
35510 Cesson
Phone: +33 (0) 2 9983 7720
Fax: +33 (0) 2 9983 4829
rennes@avnet-abacus.eu

Parc Club du Moulin à Vent
Bât 10, 33 rue du Dr. G Lévy
F-69693 Vénissieux Cedex,
Lyon
Phone: +33 (0) 4 7877 1370
Fax: +33 (0) 4 7877 1391
lyon@avnet-abacus.eu

GERMANY
Englische Str. 27
D – 10587 Berlin
Phone: +49 (0) 30 790 997 0
Fax: +49 (0) 30 790 997 51
berlin@avnet-abacus.eu

Industriestr. 26
D-76297 Stutensee
Phone: +49 (0)7249 910 149
Fax: +49 (0)7249 910 177
stutensee@avnet-abacus.eu

Wilhelmstr. 1, D-59439
Holzwickede / Dortmund
Phone: +49 (0) 2301 2959 27
Fax: +49 (0) 2301 2959 29
dortmund@avnet-abacus.eu

Oehleckerring 9a – 13
22419 Hamburg
Phone: +49 (0) 40 608 23 59 0
Fax: +49 (0) 40 608 23 59 20
hamburg@avnet-abacus.eu

Gruber Str. 60c-60d
D-85586 Poing / Munich
Phone: +49 (0) 8121 777 03
Fax: +49 (0) 8121 777 531
muenchen@avnet-abacus.eu

Lina-Ammon-Str. 19 b
D-90471 Nürnberg
Phone: +49 (0) 911 244 250
Fax: +49 (0) 911 244 25 25
nuernberg@avnet-abacus.eu

Gutenbergstr. 15
D-70771 Leinfelden-
Echterdingen / Stuttgart
Phone: +49 (0) 711 78260 02
Fax: +49 (0) 711 78260 333
stuttgart@avnet-abacus.eu

Gaußstraße 10
D-31275 Lehrte
Phone: +49 (0) 5132 5099 0
Fax: +49 (0) 5132 5099 76
lehrte@avnet-abacus.eu

GREECE
c/o Abacus Avnet Austria
Schönbrunner Str. 297-307
A-1120 Vienna
Phone: +43 1 86642-0
Fax: +43 1 86642 250
greece@avnet-abacus.eu

HUNGARY
c/o Avnet Abacus Austria
Schönbrunner Str. 297-307
A-1120 Vienna
Phone: +43 1 86642-0
Fax: +43 1 86642 250
budapest@avnet-abacus.eu

IRELAND
c/o Avnet Abacus Bolton
Oceanic Building
Waters Meeting Road
Bolton BL1 8SW
Phone: +44 (0)1204 547170
Fax: +44 (0)1204 547171
bolton@avnet.eu

ISRAEL
Avnet Components Israel Ltd.
P.O. Box 48 Tel-Mond, 4065001
Phone: 972-9-7780280
Fax: 972-3-760-1115
avnet.israel@avnet.com

ITALY
Via Manzoni 44
I-20095 Cusano Milanino
(Milano)
Phone: +39 02 660 921
Fax: +39 02 66092 332
milano@avnet-abacus.eu

Viale dell'industria 23
I-35129 Padova
Phone: +39 049 7800 381
Fax: +39 049 7730 36
padova@avnet-abacus.eu

Via Zoe Fontana 220
I-00131 Roma
Phone: +39 06 4123 1952
Fax: +39 06 4192 618
roma@avnet-abacus.eu

Via Scaglia Est, 31/33
41126 Modena
Phone: +39 059 34891
Fax: +39 059 344993
modena@avnet-abacus.eu

Via Panciatichi 40/11
I-50127 Firenze
Phone: +39 055 436 1928
Fax: +39 055 428 8810
firenze@avnet-abacus.eu

LATVIA
c/o Avnet Abacus Poland
Plac Solny 16
PL-50-062 Wroclaw
Phone: +48 71 34 205 99
Fax: +48 71 34 229 10
latvia@avnet-abacus.eu

LITHIUANIA
c/o Avnet Abacus Poland
Plac Solny 16
PL-50-062 Wroclaw
Phone: +48 71 34 205 99
Fax: +48 71 34 229 10
lithuania@avnet-abacus.eu

NETHERLANDS
Stadionstraat 2, 6th fl.
NL-4815 NG Breda
Phone: +31 (0) 76 57 22 300
Fax: +31 (0) 76 57 22 303
breda@avnet-abacus.eu

NORWAY
Olaf Helsetsvei 6, 0694 Oslo
P.O.Box 150 Oppsal, 0619 Oslo
Phone: +4722707664
Mobile +4794895373
Fax +4722707661
oslo@avnet-abacus.eu

POLAND
Plac Solny 16
PL-50-062 Wroclaw
Phone: +48 71 34 205 99
Fax: +48 71 34 229 10
wroclaw@avnet-abacus.eu

PORTUGAL
Tower Plaza, Rot. Eng. Edgar
Cardoso, 23, Pl. 14, Sala E
PT-4400-676 Vila Nova
de Gaia
Phone: +351 223 779502
Fax: +351 223 779503
portugal@avnet-abacus.eu

ROMANIA
c/o Avnet Abacus Slovenia
Dunajska Cesta 159
1000 Ljubljana
Phone: +386 (0)1 560 97 54
Fax: +386 (0)1 560 98 78
romania@avnet-abacus.eu

RUSSIA
Office 31, Building 2
10 Korovinskoye Shosse
127486 Moscow
Phone: +7 (495) 737 3689
Fax: +7 (495) 737 3686
Moscow@avnet-abacus.eu

SERBIA
c/o Avnet Abacus Slovenia
Dunajska Cesta 167
1000 Ljubljana
Phone: +386 (0)1 560 97 54
Fax: +386 (0)1 560 98 78
serbia@avnet-abacus.eu

SLOVAKIA
c/o Avnet Abacus Austria
Schönbrunner Str. 297-307
A-1120 Vienna
Phone: +43 1 86642-0
Fax: +43 1 86642 250
slovakia@avnet-abacus.eu

SLOVENIA
Dunajska Cesta 167
1000 Ljubljana
Phone: +386 (0)1 560 97 54
Fax: +386 (0)1 560 98 78
ljubljana@avnet-abacus.eu

SOUTH AFRICA
Ground Floor, Forrest House
Belmont Office Park
Belmont Road, Rondebosch
7700, Cape Town
Phone: +27 (0) 21 689 4141
Fax: +27 (0) 21 686 4709
sales@avnet.co.za

202 Chelmsford, 2nd Floor
Nelson Road, Essex Gardens,
Westville, 3629, Durban
Phone: +27 (0) 31 266 8104
Fax: +27 (0) 31 266 1891
sales@avnet.co.za

Block 3, Pinewood Office Park
33 Riley Road
Woodmead, 2191
Sandton, Johannesburg
Phone: +27 (0) 11 319 8600
Fax: +27 (0) 11 319 8650
sales@avnet.co.za

SPAIN
NyN Tower, C/ Tarragona,
151-157, Floor 19
ES-08014 Barcelona
Phone: +34 (0) 93 327 85 50
Fax: +34 (0) 93 425 05 44
barcelona@avnet-abacus.eu

Plaza Zabalgane
12 Bajo Izda,
Galdakao / Vizcaya
ES -48960 Bilbao
Phone: +34 (0) 94 457 0044
Fax: +34 (0) 94 456 8855
bilbao@avnet-abacus.eu

C/Chile, 10 2ª Plta.
Oficina 229
ES -28290 Las Matas / Madrid
Phone: +34 (0) 913 72 7200
Fax: +34 (0) 916 36 9788
madrid@avnet-abacus.eu

SWEDEN
Löfströms Allé 5,
Sundbyberg, Box 1830,
SE-171 27 Solna
Phone: +46 (0) 858 746200
Fax: +46 (0) 858 746 001
stockholm@avnet-abacus.eu

Smörhålevägen 3
SE-43442 Kungsbacka
Phone: +46 (0)8 58746 200
Fax: +46 (0)300 140 15
gothenburg@avnet-abacus.eu

SWITZERLAND
Bernstrasse 392
CH-8953 Dietikon
Phone: +41 (0) 43 322 49 90
Fax: +41 (0) 43 322 49 99
zurich@avnet-abacus.eu

TURKEY
Tatlisu Mahallesi,
Pakdil Sokak
No:5 B Blok Kat 2
34774 Umraniye
Istanbul Turbine
Phone: +90 216 52 88 370
Fax: + 90 216 52 88 377
istanbul@avnet-abacus.eu

UK
First Floor, The Gatehouse
Gatehouse Road
Aylesbury, Bucks
HP19 8DB
Phone: +44 (0) 1296 678920
Fax: +44 (0) 1296 678939
Aylesbury@avnet.eu

Building 5
Waltham Park
White Waltham
Maidenhead
Berkshire SL6 3TN
Phone: +44 (0)1628 512900
Fax: +44 (0)1628 512999
maidenhead@avnet.eu

Avnet House
Rutherford Close
Meadway,
Stevenage
Hertfordshire SG1 2EF
Phone: +44 (0)1438 788 500
Fax: +44 (0)1438 788 250
stevenage@avnet.eu

Oceanic Building
Waters Meeting Road
Bolton
BL1 8SW
Phone: +44 (0)1204 547170
Fax: +44 (0)1204 547171
bolton@avnet.eu

UKRAINE
c/o Avnet Abacus Poland
Plac Solny 16
PL-50-062 Wroclaw
Phone: +48 71 34 205 99
Fax: +48 71 34 229 10
ukraine@avnet-abacus.eu