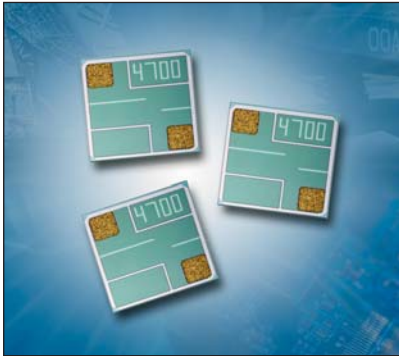


Thin Film WBR (Wire Bond Resistor)



Top Contact



BENEFITS

- Top Contact/ Bottom Isolated
- Ultra High Stability
- High Reliability
- Extremely Tight Tolerance
- Unique Value Marking
- 250 mW Power Rating

APPLICATIONS

- Medical Implantable
- Military / Defense
- Hybrid Designs
- Multi-Chip Module (MCM)
- Test & Measurement Instrumentation
- High-Rel Microelectronics
- RF / Microwave communications

Top Contact Precision wire bondable resistors are ultra-stable with high reliability. Laser trimmed to tight tolerance. Customizable value and unique marking of that value. This device is built in 0202 chip outline and is ideal for but not limited to hybrid circuit applications.

These are designed specifically for applications that require stable thermo- compression, epoxy or ultra-sonic attachment.

HOW TO ORDER

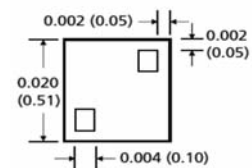
WBR	0202	S	B	AA	F	WG	W
Series Code	Case Size	Material	TCR (ppm/°C)	Resistance	Tolerance	Termination Code	Packaging
WBR = Wire Bond Resistor	0202 = 0202 OSOS = Special Request Please supply design or contact factory	S = Silicon G = Glass C = Custom	A = ±25 B = ±50 C = ±100 D = ±150 S = Special Request Please supply design or contact factory	See tables on the following pages	F = 1% B = 0.1% D = 0.5% J = 5% S = Special Request Please supply design or contact factory	WG = Bondable Gold A = Aluminum	W = Waffle Pack

MECHANICAL DIMENSIONS

Size	Length (L)	Width (W)	Bond Pad
0202	0.020 ± 0.003 (0.51 ± 0.076)	0.020 ± 0.003 (0.51 ± 0.076)	0.0038 ± 0.0038 (0.09 ± 0.09)

Inches (mm)

Other sizes available upon request



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Top Contact

AVAILABLE TOLERANCES

Resistor	Units	TCR ± 25ppm	TCR ± 50ppm	TCR ± 100ppm	TCR ± 150ppm
43.2	QB	kOhm	B,D	D,F	F,J
44.2	QC	kOhm	B,D	D,F	F,J
45.3	QD	kOhm	B,D	D,F	F,J
46.4	QE	kOhm	B,D	D,F	F,J
47.5	QF	kOhm	B,D	D,F	F,J
48.7	QG	kOhm	B,D	D,F	F,J
49.9	QH	kOhm	B,D	D,F	F,J
51.1	QJ	kOhm	B,D	D,F	F,J
52.3	QK	kOhm	B,D	D,F	F,J
53.6	QL	kOhm	B,D	D,F	F,J
54.9	QM	kOhm	B,D	D,F	F,J
56.2	QN	kOhm	B,D	D,F	F,J
57.6	QO	kOhm	B,D	D,F	F,J
59	QP	kOhm	B,D	D,F	F,J
60.4	QR	kOhm	B,D	D,F	F,J
61.9	QS	kOhm	B,D	D,F	F,J
63.4	QT	kOhm	B,D	D,F	F,J
64.9	QU	kOhm	B,D	D,F	F,J
66.5	QV	kOhm	B,D	D,F	F,J
68.1	QW	kOhm	B,D	D,F	F,J
69.8	QX	kOhm	B,D	D,F	F,J
71.5	QY	kOhm	B,D	D,F	F,J
73.2	RA	kOhm	B,D	D,F	F,J
75	RB	kOhm	B,D	D,F	F,J
76.8	RC	kOhm	B,D	D,F	F,J
78.7	RD	kOhm	B,D	D,F	F,J
80.6	RE	kOhm	B,D	D,F	F,J
82.5	RF	kOhm	B,D	D,F	F,J
84.5	RG	kOhm	B,D	D,F	F,J
86.6	RH	kOhm	B,D	D,F	F,J
88.7	RJ	kOhm	B,D	D,F	F,J
90.9	RM	kOhm	B,D	D,F	F,J
93.1	RN	kOhm	B,D	D,F	F,J
95.3	RO	kOhm	B,D	D,F	F,J
97.6	RP	kOhm	B,D	D,F	F,J
100	RQ	kOhm	B,D	D,F	F,J
102	RR	kOhm	B,D	D,F	F,J
105	RS	kOhm	B,D	D,F	F,J
107	RT	kOhm	B,D	D,F	F,J
110	RU	kOhm	B,D	D,F	F,J
113	RV	kOhm	B,D	D,F	F,J
115	RW	kOhm	B,D	D,F	F,J
118	RX	kOhm	B,D	D,F	F,J
121	RY	kOhm	B,D	D,F	F,J
124	RZ	kOhm	B,D	D,F	F,J
127	SA	kOhm	B,D	D,F	F,J
130	SB	kOhm	B,D	D,F	F,J
133	SC	kOhm	B,D	D,F	F,J
137	SD	kOhm	B,D	D,F	F,J
140	SE	kOhm	B,D	D,F	F,J

Resistor	Units	TCR ± 25ppm	TCR ± 50ppm	TCR ± 100ppm	TCR ± 150ppm
143	SF	kOhm	B,D	D,F	F,J
147	SG	kOhm	B,D	D,F	F,J
150	SH	kOhm	B,D	D,F	F,J
154	SJ	kOhm	B,D	D,F	F,J
158	SK	kOhm	B,D	D,F	F,J
162	SM	kOhm	B,D	D,F	F,J
165	SN	kOhm	B,D	D,F	F,J
169	SP	kOhm	B,D	D,F	F,J
174	SQ	kOhm	B,D	D,F	F,J
178	SR	kOhm	B,D	D,F	F,J
182	SS	kOhm	B,D	D,F	F,J
187	ST	kOhm	B,D	D,F	F,J
191	SU	kOhm	B,D	D,F	F,J
196	SV	kOhm	B,D	D,F	F,J
200	SW	kOhm	B,D	D,F	F,J
205	SX	kOhm	B,D	D,F	F,J
210	SY	kOhm	B,D	D,F	F,J
215	SZ	kOhm	B,D	D,F	F,J
221	TA	kOhm	B,D	D,F	F,J
226	TB	kOhm	B,D	D,F	F,J
232	TC	kOhm	B,D	D,F	F,J
237	TD	kOhm	B,D	D,F	F,J
243	TE	kOhm	B,D	D,F	F,J
249	TF	kOhm	B,D	D,F	F,J
255	TG	kOhm	B,D	D,F	F,J
261	TH	kOhm	B,D	D,F	F,J
267	TJ	kOhm	B,D	D,F	F,J
274	TK	kOhm	B,D	D,F	F,J
280	TM	kOhm	B,D	D,F	F,J
287	TN	kOhm	B,D	D,F	F,J
294	TP	kOhm	B,D	D,F	F,J
301	TQ	kOhm	B,D	D,F	F,J
309	TR	kOhm	B,D	D,F	F,J
316	TS	kOhm	B,D	D,F	F,J
324	TT	kOhm	B,D	D,F	F,J
332	TU	kOhm	B,D	D,F	F,J
340	TV	kOhm	B,D	D,F	F,J
348	TW	kOhm	B,D	D,F	F,J
357	TX	kOhm	B,D	D,F	F,J
365	TY	kOhm	B,D	D,F	F,J
374	TZ	kOhm	B,D	D,F	F,J
383	UA	kOhm	B,D	D,F	F,J
392	UB	kOhm	B,D	D,F	F,J
402	UC	kOhm	B,D	D,F	F,J
412	UD	kOhm	B,D	D,F	F,J
422	UE	kOhm	B,D	D,F	F,J
432	UF	kOhm	B,D	D,F	F,J
442	UG	kOhm	B,D	D,F	F,J
453	UH	kOhm	B,D	D,F	F,J
464	UJ	kOhm	B,D	D,F	F,J

Resistor	Units	TCR ± 25ppm	TCR ± 50ppm	TCR ± 100ppm	TCR ± 150ppm
475	UK	kOhm	B,D	D,F	F,J
487	UM	kOhm	B,D	D,F	F,J
499	UN	kOhm	B,D	D,F	F,J
511	UP	kOhm	B,D	D,F	F,J
523	UQ	kOhm	B,D	D,F	F,J
536	UR	kOhm	B,D	D,F	F,J
549	US	kOhm	B,D	D,F	F,J
562	UT	kOhm	B,D	D,F	F,J
576	UU	kOhm	B,D	D,F	F,J
590	UV	kOhm	B,D	D,F	F,J
604	UW	kOhm	B,D	D,F	F,J
619	UX	kOhm	B,D	D,F	F,J
634	UY	kOhm	B,D	D,F	F,J
649	UZ	kOhm	B,D	D,F	F,J
665	VA	kOhm	B,D	D,F	F,J
681	VB	kOhm	B,D	D,F	F,J
698	VC	kOhm	B,D	D,F	F,J
715	VD	kOhm	B,D	D,F	F,J
732	VE	kOhm	B,D	D,F	F,J
750	VF	kOhm	B,D	D,F	F,J
768	VG	kOhm	B,D	D,F	F,J
787	VH	kOhm	B,D	D,F	F,J
806	VJ	kOhm	B,D	D,F	F,J
825	VK	kOhm	B,D	D,F	F,J
845	VM	kOhm	B,D	D,F	F,J
866	VN	kOhm	B,D	D,F	F,J
887	VP	kOhm	B,D	D,F	F,J
909	VQ	kOhm	B,D	D,F	F,J
931	VR	kOhm	B,D	D,F	F,J
953	VS	kOhm	B,D	D,F	F,J
976	VT	kOhm	B,D	D,F	F,J
1000	VU	kOhm	B,D	D,F	F,J
1.02	VV	Mohm	B,D	D,F	F,J
1.05	VW	Mohm	B,D	D,F	F,J
1.07	VX	Mohm	B,D	D,F	F,J
1.1	VY	Mohm	B,D	D,F	F,J
1.13	VZ	Mohm	B,D	D,F	F,J
1.15	WA	Mohm	B,D	D,F	F,J
1.18	WB	Mohm	B,D	D,F	F,J
1.21	WC	Mohm	B,D	D,F	F,J
1.24	WD	Mohm	B,D	D,F	F,J
1.27	WE	Mohm	B,D	D,F	F,J
1.3	WF	Mohm	B,D	D,F	F,J
1.33	WG	Mohm	B,D	D,F	F,J
1.37	WH	Mohm	B,D	D,F	F,J
1.4	WJ	Mohm	B,D	D,F	F,J
1.43	WK	Mohm	B,D	D,F	F,J
1.47	WM	Mohm	B,D	D,F	F,J
1.5	WN	Mohm	B,D	D,F	F,J
1.54	WP	Mohm	B,D	D,F	F,J

Resistor	Units	TCR ± 25ppm	TCR ± 50ppm	TCR ± 100ppm	TCR ± 150ppm
1.58	WQ	Mohm	B,D	D,F	F,J
1.62	WR	Mohm	B,D	D,F	F,J
1.65	WS	Mohm	B,D	D,F	F,J
1.69	WT	Mohm	B,D	D,F	F,J
1.74	WU	Mohm	B,D	D,F	F,J
1.78	WV	Mohm	B,D	D,F	F,J
1.82	WW	Mohm	B,D	D,F	F,J
1.87	WX	Mohm	B,D	D,F	F,J
1.91	WY	Mohm	B,D	D,F	F,J
1.96	WZ	Mohm	B,D	D,F	F,J
2	XA	Mohm	B,D	D,F	F,J
2.05	XB	Mohm	B,D	D,F	F,J
2.1	XC	Mohm	B,D	D,F	F,J
2.15	XD	Mohm	B,D	D,F	F,J
2.21	XE	Mohm	B,D	D,F	F,J
2.26	XF	Mohm	B,D	D,F	F,J
2.32	XG	Mohm	B,D	D,F	F,J
2.37	XH	Mohm	B,D	D,F	F,J
2.43	XJ	Mohm	B,D	D,F	F,J
2.49	XK	Mohm	B,D	D,F	F,J
2.55	XM	Mohm	B,D	D,F	F,J
2.61	XN	Mohm	B,D	D,F	F,J
2.67	XP	Mohm	B,D	D,F	F,J
2.74	XQ	Mohm	B,D	D,F	F,J
2.8	XR	Mohm	B,D	D,F	F,J
2.87	XS	Mohm	B,D	D,F	F,J
2.94	XT	Mohm	B,D	D,F	F,J
3.01	XU	Mohm	B,D	D,F	F,J
3.09	XV	Mohm	B,D	D,F	F,J
3.16	XW	Mohm	B,D	D,F	F,J
3.24	XX	Mohm	B,D	D,F	F,J
3.32	XY	Mohm	B,D	D,F	F,J
3.4	XZ	Mohm	B,D	D,F	F,J
3.48	YA	Mohm	B,D	D,F	F,J
3.57	YB	Mohm	B,D	D,F	F,J
3.65	YC	Mohm	B,D	D,F	F,J
3.74	YD	Mohm	B,D	D,F	F,J
3.83	YE	Mohm	B,D	D,F	F,J
3.92	YF	Mohm	B,D	D,F	F,J
4.02	YG	Mohm	B,D	D,F	F,J
4.12	YH	Mohm	B,D	D,F	F,J
4.22	YJ	Mohm	B,D	D,F	F,J
4.32	YK	Mohm	B,D	D,F	F,J
4.42	YM	Mohm	B,D	D,F	F,J
4.53	YN	Mohm	B,D	D,F	F,J
4.64	YO	Mohm	B,D	D,F	F,J
4.75	YP	Mohm	B,D	D,F	F,J
4.87	YR	Mohm	B,D	D,F	F,J
4.99	YS	Mohm	B,D	D,F	F,J
5.11	YT	Mohm	B,D	D,F	F,J

Resistor	Units	TCR ± 25ppm	TCR ± 50ppm	TCR ± 100ppm	TCR ± 150ppm
5.23	YU	Mohm	B,D	D,F	F,J
5.36	YV	Mohm	B,D	D,F	F,J
5.49	YW	Mohm	B,D	D,F	F,J
5.62	YX	Mohm	B,D	D,F	F,J
5.76	YY	Mohm	B,D	D,F	F,J
5.9	YZ	Mohm	B,D	D,F	F,J
6.04	ZA	Mohm	B,D	D,F	F,J
6.19	ZB	Mohm	B,D	D,F	F,J
6.34	ZC	Mohm	B,D	D,F	F,J
6.49	ZD	Mohm	B,D	D,F	F,J
6.65	ZE	Mohm	B,D	D,F	F,J
6.81	ZF	Mohm	B,D	D,F	F,J
6.98	ZG	Mohm	B,D	D,F	F,J
7.15	ZH	Mohm	B,D	D,F	F,J
7.32	ZJ	Mohm	B,D	D,F	F,J
7.5	ZK	Mohm	B,D	D,F	F,J
7.68	ZM	Mohm	B,D	D,F	F,J
7.87	ZN	Mohm	B,D	D,F	F,J
8.06	ZP	Mohm	B,D	D,F	F,J
8.25	ZQ	Mohm	B,D	D,F	F,J
8.45	ZR	Mohm	B,D	D,F	F,J
8.66	ZS	Mohm	B,D	D,F	F,J
8.87	ZT	Mohm	B,D	D,F	F,J
9.09	ZU	Mohm	B,D	D,F	F,J
9.31	ZV	Mohm	B,D	D,F	F,J
9.53	ZW	Mohm	B,D	D,F	F,J
9.76	ZX	Mohm	B,D	D,F	F,J
10	ZY	Mohm	B,D	D,F	F,J



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Top Contact

GENERAL CHARACTERISTICS

Resistance Range	1.0 Ohm - 4.0 Mohm
Resistance Tolerance	± 1%, ± 0.1%, ± 0.5%
Termination Type	Gold, Aluminum
Backing	Bare (Lapped) Substrate, Gold
Operating Temperature	-55°C ± 125°C
Rated Voltage	125V DC Max
Insulation Resistance	10 ⁶ MOhm

Custom values up to 10meg Ohm available upon request

RESISTOR MATERIALS

Film Type	Standard TCR	Available TCR
Silicon Chrome (SiCr)	± 150 ppm/°C	25, 50, 100, 250
Tantalum Nitride (TaN)	± 150 ppm/°C	25, 50, 100, 250 ppm/°C

Custom low TCR available upon request

SUBSTRATE MATERIALS

Inches (mm)

Substrate	Available Thickness
Silicon (With SiO ₂)	0.010 ± 0.002 (0.254 ± 0.05)

Additional substrate options available

ENVIRONMENTAL TESTS

Test	Limits	Specification
Life Test/ Stability	±0.25% Max Δ R/R	MIL-STD-202 MTD 108, 1000hrs, 125°C,50mW
Thermal Shock	±0.25% Max Δ R/R	MIL-STD-202 MTD 107
High Temperature Exposure	±0.25% Max Δ R/R	100 Hrs @ 150°C
Moisture Resitance	±0.25% Max Δ R/R	MIL-STD-202 MTD 106
Wire Bond Test	4 Gram Min (1.25 Mil Wire)	MIL -PRF-55342
Short Time Overload	±0.25% Max Δ R/R	MIL -PRF-55342

