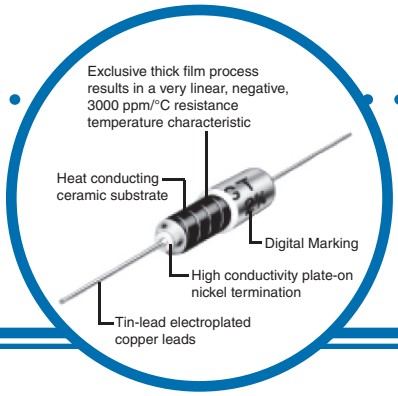
Thick Film Temperature Compensation Resistor

TT electronics

RGT Series

- Superior linearity
- Stable thick-film technology
- Negative temperature coefficient
- Effective compensation for positive TC devices, semiconductors, and copper



Specifications

Temperature Coefficient	Resistance Ratio	Linearity	Standard Resistance Values	Std. Resistance Tol. @ 25°C
-0.30%/°C (minus 3000 ppm/°C @ 25°C)	R25°C/R125°C = 1.37	<1.2% deviation per 100°C (typical over range from -55°C to 140°C)	740, 1K and 10K. Others available	±2%, ±5%, ±10%

Operating Temperature Range	High Temp Stability	Time Constraints	Dissipation Constants	Element
-55°C to + 175°C	2000 hours @ 175°C, <0.5%ΔR	7.4 sec for RGT-1, 2.9 sec. for RGT-2 (time to achieve 63.2% of an applied step-change in temperature in still air)	8.1mW/°C for RGT-1, 4.7mW°C for RGT-2 (power required to raise sensor temperature 1°C in a still air ambient of 25°C)	fused thick-film composition

Substrate	Lead Pull	Resistance to Soldering Heat	Marking Resistance to Solvents	Lead Solderability
solid-core alumina ceramic	5 lbs for 5 sec.	MIL-STD-202E, Method 210A, cond. A, <0.5%ΔR	MIL-STD-202, Method 215	MIL-STD-202, Method 208

Applications

Compensates transistors, diodes, sensors, transducers, hall devices, microprocessors, and strain gauges. Proven in automotive under-hood use.

Curve Tolerances (±)

Temperature		G Tol.	J Tol.	K Tol.
-55°C	-67°F	7%	10%	15%
-15°C	+9°F	4.5%	7.5%	12.5%
0°C	+32°F	3.6%	6.6%	11.6%
25°C	77°F	±2%	±5%	±10%
50°C	122°F	2.5%	5.5%	10.5%
75°C	167°F	3.0%	6.0%	11.0%
100°C	212°F	3.5%	6.5%	11.5%
125°C	257°F	4.0%	7.0%	12.0%
150°C	302°F	4.5%	7.5%	12.5%
175°C	347°F	5.0%	8.0%	13.0%

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IRC
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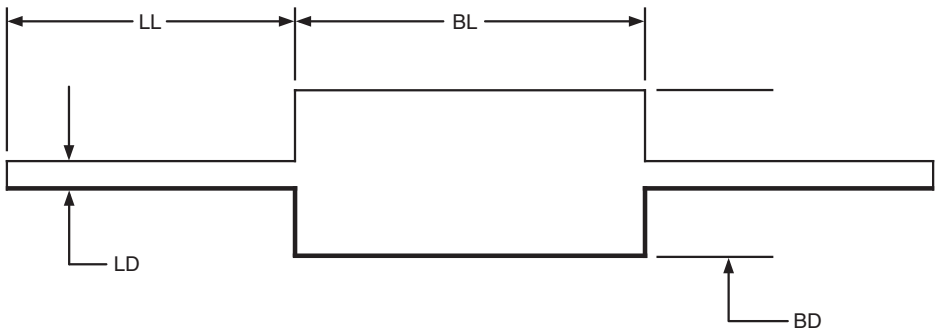
Resistance vs. Temperature

°C	°F	R in Ωs*	°C	°F	R in Ωs*	°C	°F	R in Ωs*
-60	-76	1285.2	+40	+104	956.7	+125	+257	734.0
-40	-40	1208.5	+50	+122	928.2	+130	+266	723.2
-30	-22	1173.4	+60	+140	900.2	+140	+284	703.7
-20	-4	1139.3	+70	+158	872.3	+150	+302	685.8
-10	+14	1106.3	+75	+167	858.7	+160	+320	669.3
0	+32	1074.6	+80	+176	845.2	+170	+338	653.8
+10	+50	1044.1	+90	+194	818.8	+180	+356	639.7
+20	+68	1014.6	+100	+212	793.2	+230	+446	582.9
+25	+77	1000.0	+110	+230	768.5			
+30	+86	985.5	+120	+248	745.1			

*Based on actual measurements of resistors that were 1000 ohms at 25°C.

Physical Data



Dimensions (Inches and (mm))

IRC Type	BL (Body Length)	BD (Body Diameter)	LD (Lead Diameter)	LL (Lead Length)
RGT-2	0.150 (3.81)	0.066 (1.70)	0.016 (0.41)	1.0 (25.4)
RGT-1	0.250 (6.35)	0.090 (2.29)	0.025 (0.64)	1.5 (38.1)

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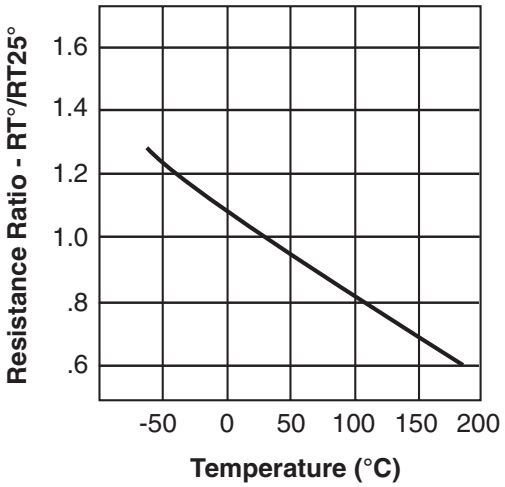
Linearity



Ordering Data