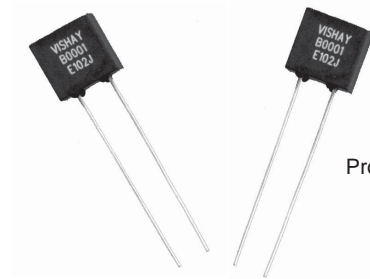


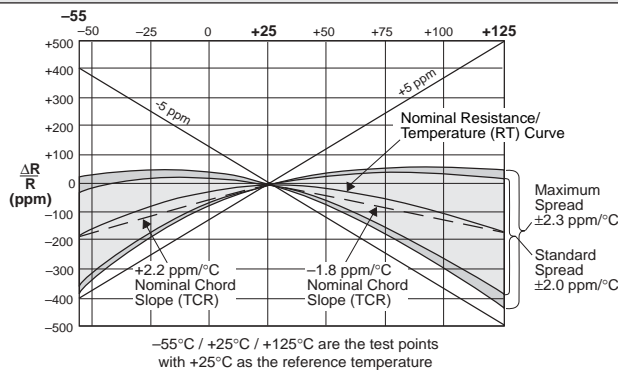
Bulk Metal[®] Foil Technology

Ultra-Performance Aerospace and Instrumentation Resistor

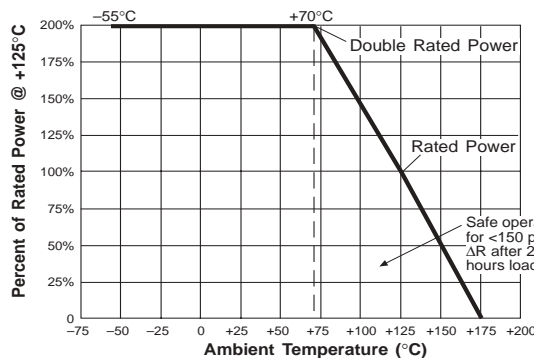


Product may not be to scale

The E102C (0.150 Inch lead spacing) and E102J (0.200 Inch lead spacing) extends the range of the aerospace and instrumentation standard S102C/J from 150K to 300K. Multiple chips are used to extend the range. The S104D, S105D and S106D are available in slightly larger packages to extend the range up to 1 Megohm where the ultimate in precision is required.

FIGURE 1 - E102C, E102J TCR SPREAD FROM NOMINAL (-55°C TO +125°C)


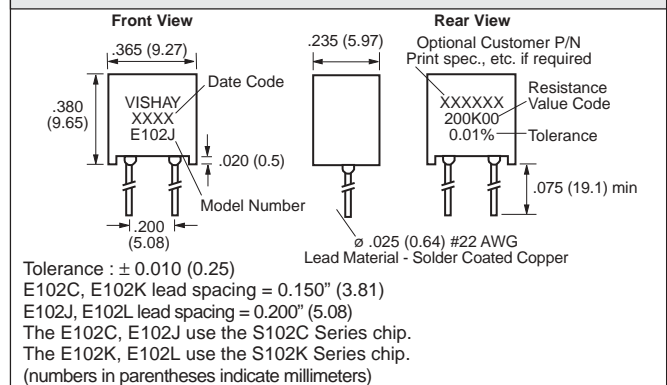
The TCR is obtained by the process capability and does not rely on a selection process. It does not vary from lot to lot nor by ohmic value. Reference Figure 7 in the "7 Technical Reasons to Specify Resistive Components" for the E102K and E102L versions.

FIGURE 2 - POWER DERATING CURVE

FEATURES

- Higher Value in a Small Package
- Nominal Temperature Coefficient of Resistance:
 - + 0.6ppm/°C (0 to + 25°C); - 0.6ppm/°C (+ 25°C to + 60°C)
 - + 2.2ppm/°C (- 55°C to + 25°C); - 1.8ppm/°C (+ 25°C to + 125°C)
- Absolute Tolerance: To 0.005%
- Resistance Range: 150K to 300K ohms
- Power Rating: 0.6W @ 70°C, 0.3W @ 125°C

TABLE 1 - E102 SPECIFICATIONS

Stability	
Load Life at 2,000 Hrs	± 0.005% Maximum ΔR @ 0.1W/+ 70°C ± 0.015% Maximum ΔR @ 0.3W/+ 125°C
Load Life at 10,000 Hrs	± 0.01% Maximum ΔR @ 0.05 W/+ 125°C ± 0.05% Maximum ΔR @ 0.3W/+ 125°C
Shelf Life Stability	± 0.0025% Maximum ΔR after 1 year ± 0.005% Maximum ΔR after 3 years
Current Noise	0.010 μ V (RMS)/Volt of applied voltage (-40 dB)
High Frequency Operation	
Rise/Decay Time	1.0ns @ 1K Ω
Inductance (L)	0.1 μ H Maximum; 0.08 μ H typical
Capacitance (C)	1.0pF Maximum; 0.5pF typical
Voltage Coefficient	< 0.1ppm/V
Thermal EMF	0.1 μ V/°C Maximum; 0.05 μ V/°C Typical

FIGURE 3 - STANDARD IMPRINTING AND DIMENSIONS

TABLE 2 - ORDERING INFORMATION - E102 SERIES RESISTORS

Please specify Vishay "E102" Series resistors as follows: (See Imprinting Illustration and Table 1 for further details.)

Example: **E102C** **150K00** **0.01%**
 MODEL NO. RESISTANCE VALUE TOLERANCE

Resistance Value, in ohms, is expressed by a series of 6 characters, 5 of which represent significant digits while the 6th is a dual purpose letter that designates both the multiplier and the location of the comma or decimal point.

E102C, E102J resistance range 150K Ω to 300K Ω Maximum
 E102L, E102K resistance range > 100K Ω to 200K Ω Maximum

Resistance Range	Letter Designator	Multiplier Factor	Example
>100K Ω to 300K Ω	K	x10 ³	150K23 = 150,230 Ω

VISHAY FOIL • FRANCE +33.4.93.37.28.24 FAX: +33.4.93.37.27.31
 • GERMANY +49.9287.710 FAX: +49.9287.70435
 • ISRAEL +972.3.557.0945 FAX: +972.3.558.9121

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 • JAPAN +81.42.729.0661 FAX: +81.42.729.3400
 • SINGAPORE +65.788.6668 FAX: +65.788.0988

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 • UK +44 191 514 8237 FAX: +44 1953 457 722
 • USA +1 610 407-4800 FAX: +1 610 640-9081