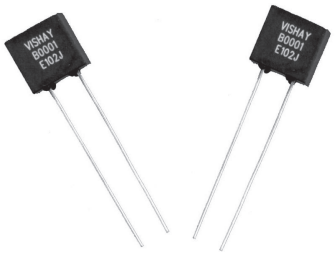
High Precision Bulk Metal® Foil Extended Value Range Resistor, with TCR of 2 ppm/°C, Tolerance to 0.005 %, and Power Rated at 0.6 W



Any value available within resistance range

Bulk Metal® foil (BMF) technology outperforms all other resistor technologies available today for applications that require high precision and high stability.

This technology has been pioneered and developed by VISHAY, and products based on this technology are the most suitable for a wide range of applications.

BMF technology allows us to produce customer orientated products, designed to satisfy challenging and specific technical requirements.

The E102C (0.150" lead spacing) and E102J (0.200" lead spacing) extends the range of the high precision aerospace and instrumentation standard S102C/J from 150K to 300K.

Our application engineering department is available to advise and to make recommendations. For non-standard technical requirements and special applications, please contact us.

FEATURES

- Temperature coefficient of resistance (TCR):
  - 55 °C to + 125 °C, + 25 °C ref.
  2 ppm/°C typical
- Rated power: to 0.3 W at + 125 °C
- Tolerance: ± 0.005 %
- Load life stability: to ± 0.005 % at 70 °C, 2000 h at rated power
- Resistance range: 150 kΩ to 300 kΩ (higher and lower values of resistance are available)
- Electrostatic discharge (ESD) above 25 000 V
- Non inductive, non capacitive design
- Rise time: 1 ns without ringing
- Current noise: < - 40 dB
- Thermal EMF: 0.05 µV/°C typical
- Voltage coefficient < 0.1 ppm/V
- Low inductance: < 0.08 µH typical
- Non hot spot design
- Terminal finishes available: lead (Pb)-free
  tin/lead alloy
- Matched sets are available on request
  (TCR tracking: to 0.5 ppm/°C)
- For better TCR and PCR performances please review the E102Z datasheet

FIGURE 1 - TYPICAL TCR CURVE

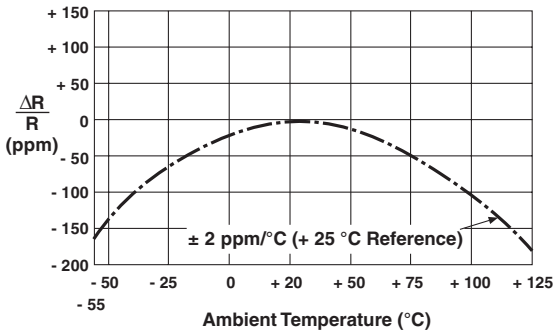


FIGURE 2 - POWER DERATING CURVE

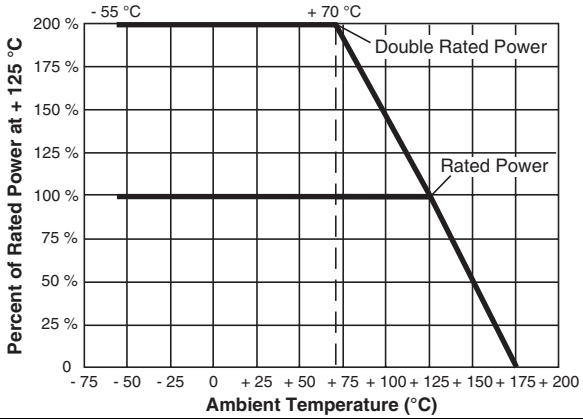
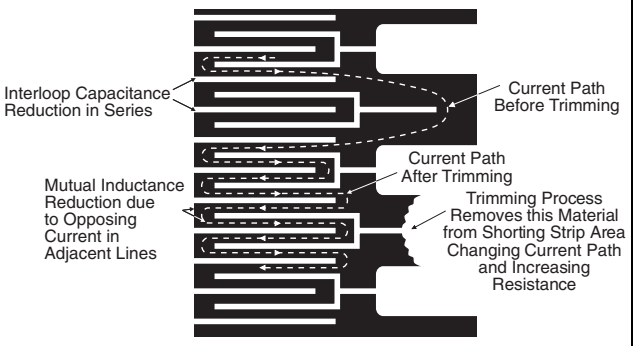


TABLE 1 - E102 SPECIFICATIONS

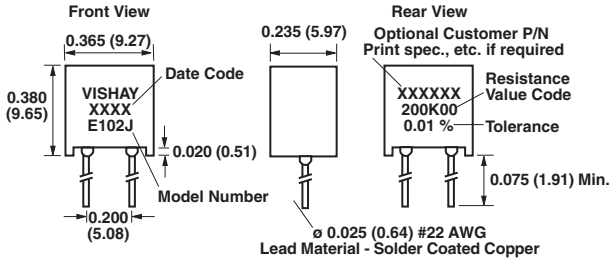
Stability Load life at 2000 h Load life at 10 000 h	 ± 0.005 % maximum ΔR at 0.1 W/+ 70 °C ± 0.015 % maximum ΔR at 0.3 W/+ 125 °C ± 0.01 % maximum ΔR at 0.05 W/+ 125 °C ± 0.05 % maximum ΔR at 0.3 W/+ 125 °C
Current Noise	< - 40 dB
High Frequency Operation Rise time Inductance (L) Capacitance (C)	 1.0 ns 0.1 µH maximum; 0.08 µH typical 1.0 pF maximum; 0.5 pF typical
Voltage Coefficient	< 0.1 ppm/V
Thermal EMF	0.1 µV/°C maximum; 0.05 µV/°C typical

FIGURE 3 - TRIMMING TO VALUES
(Conceptual Illustration)



Note: Foil shown in black, etched spaces in white

FIGURE 4 - STANDARD IMPRINTING AND DIMENSIONS



Tolerance: ± 0.010 (0.25)
E102C, E102K lead spacing = 0.150" (3.81)
E102J, E102L lead spacing = 0.200" (5.08)
The E102C, E102J use the S102C series chip.
The E102K, E102L use the S102K series chip.
(numbers in parentheses indicate millimeters).

TABLE 2 - GLOBAL PART NUMBER INFORMATION

NEW GLOBAL PART NUMBER: Y1186150K000T9L (preferred part number format)

DENOTES PRECISION	VALUE	AER*
Y	**K** = kΩ	**0** = standard part, tin/lead termination **9** = standard part, lead (Pb)-free termination **1 - 999** = custom

Y	1	1	8	6	1	5	0	K	0	0	0	T	9	L

PRODUCT CODE	RESISTANCE TOLERANCE	PACKAGING
1186 = E102C **1184** = E102J **1187** = E102K **1185** = E102L	**V** = ± 0.005 % **T** = ± 0.01 % **Q** = ± 0.02 % **A** = ± 0.05 % **B** = ± 0.1 % **C** = ± 0.25 % **D** = ± 0.5 % **F** = ± 1.0 %	**L** = bulk pack

FOR EXAMPLE: ABOVE GLOBAL ORDER Y1186 150K000 T 9 L:
TYPE: E102C
VALUE: 150.0 kΩ
ABSOLUTE TOLERANCE: ± 0.01 %
TERMINATION: lead (Pb)-free
PACKAGING: bulk pack

HISTORICAL PART NUMBER: E102C T 150K00 T B (will continue to be used)

E102C	T	150K00	T	B
MODEL	TERMINATION	OHMIC VALUE	RESISTANCE TOLERANCE	PACKAGING
E102C **E102J** **E102K** **E102L**	**T** = lead (Pb)-free None = tin/lead alloy	**150K00** = 150.0 kΩ	**V** = ± 0.005 % **T** = ± 0.01 % **Q** = ± 0.02 % **A** = ± 0.05 % **B** = ± 0.1 % **C** = ± 0.25 % **D** = ± 0.5 % **F** = ± 1.0 %	**B** = bulk pack

Note

* Application engineering release: for non-standard requests, please contact application engineering.

Disclaimer

All product specifications and data are subject to change without notice.

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