Ultra High Precision, High Resolution Z-Foil Audio Resistor, with TCR of ± 0.2 ppm/°C, Tolerance to ± 0.01 % and Noise < - 40 dB

Any value at any tolerance available within resistance range

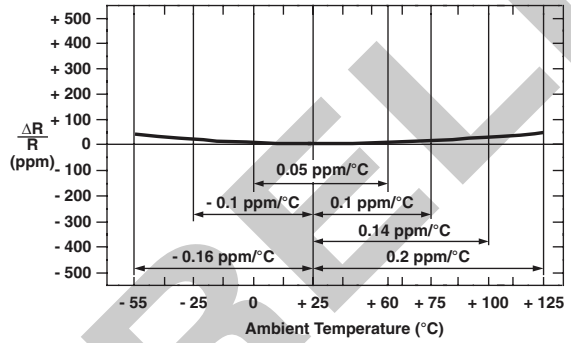
INTRODUCTION

The VAR, composed of Vishay's Bulk Metal® Z-foil technology, with improved sound quality, provides a combination of low noise and low inductance/capacitance, making it unrivalled for applications requiring low noise and distortion-free properties.

While the regular foil resistors are already widely acknowledged as the leading resistors for audio applications, the special "naked Z-foil resistor" design without mold or encapsulation, adds an additional dimension for reducing signal distortion and increasing clarity in signal processing.

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

FIGURE 1 - TYPICAL TCR CURVE Z-FOIL



FEATURES

- **Temperature coefficient of resistance (TCR): - 55 °C to + 125 °C, 25 °C ref.** ± 0.2 ppm/°C typical (see table 1)
- Rated power: to 0.4 W at + 70 °C
- Tolerance: to ± 0.01 %
- Load life stability: to ± 0.01 % at 70 °C, 2000 h at rated power
- Resistance range: 10 Ω to 100 kΩ (higher or 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

Pb-free Available

RoHS* COMPLIANT

APPLICATIONS

- High precision amplifiers
- High-end speaker system
- High-end audio circuit
- Transducer
- High fidelity audio amplifier

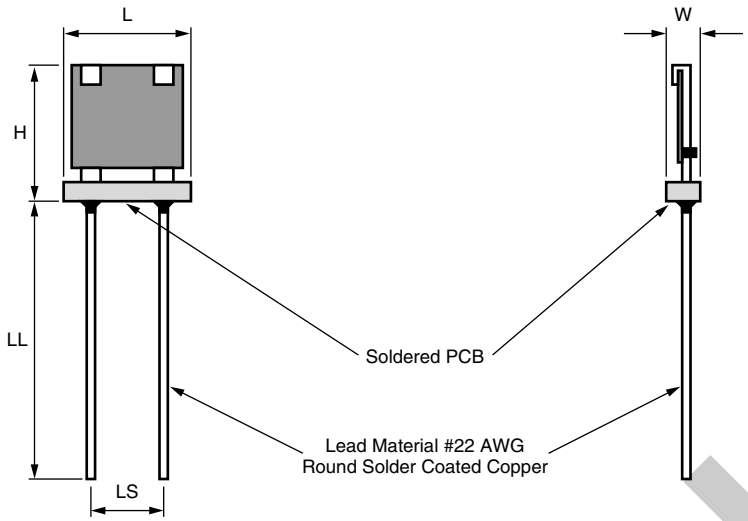
TABLE 1 - RESISTANCE VERSUS TCR (- 55 °C to + 125 °C, + 25 °C Ref.)

RESISTOR	RESISTANCE VALUE (Ω)	TYPICAL TCR AND MAXIMUM SPREAD (ppm/°C)	TIGHTEST TOLERANCE (%)
VAR	100 to < 100K	± 0.2 ± 1.8	0.01
	50 to < 100	± 0.2 ± 2.8	0.01
	10 to < 50	± 0.2 ± 3.8	0.02

Note:
• For other values and tighter tolerances, please contact application engineering using the footer below

* Pb containing terminations are not RoHS compliant, exemptions may apply

FIGURE 2 - STANDARD DIMENSIONS



This product is fragile and may be damaged if mishandled.

Vishay assumes no responsibility for damage caused by improper handling.

TABLE 2 - SPECIFICATIONS

RESISTANCE RANGE (Ω)	MAXIMUM WORKING VOLTAGE	AMBIENT POWER RATING		DIMENSIONS	
		at + 70 °C	at + 125 °C	INCHES	mm
10 to 100K	200	0.4 W	0.2 W	W: 0.080 max. L: 0.250 max. H: 0.310 max. LL: 1.000 ± 0.125 LS: 0.150 ± 0.005	W: 2.03 max. L: 6.35 max. H: 7.87 max. LL: 25.4 ± 3.18 LS: 3.81 ± 0.13

FIGURE 3 - POWER DERATING CURVE

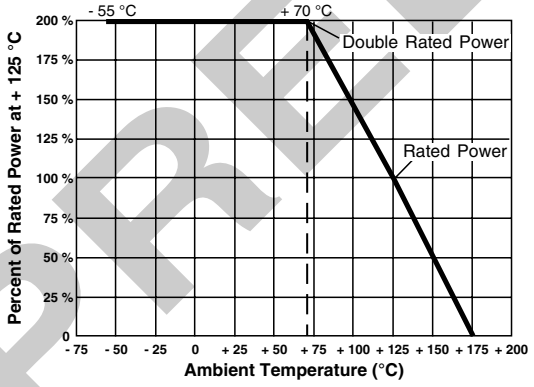
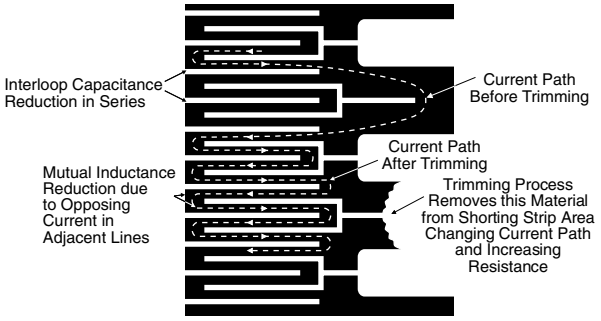


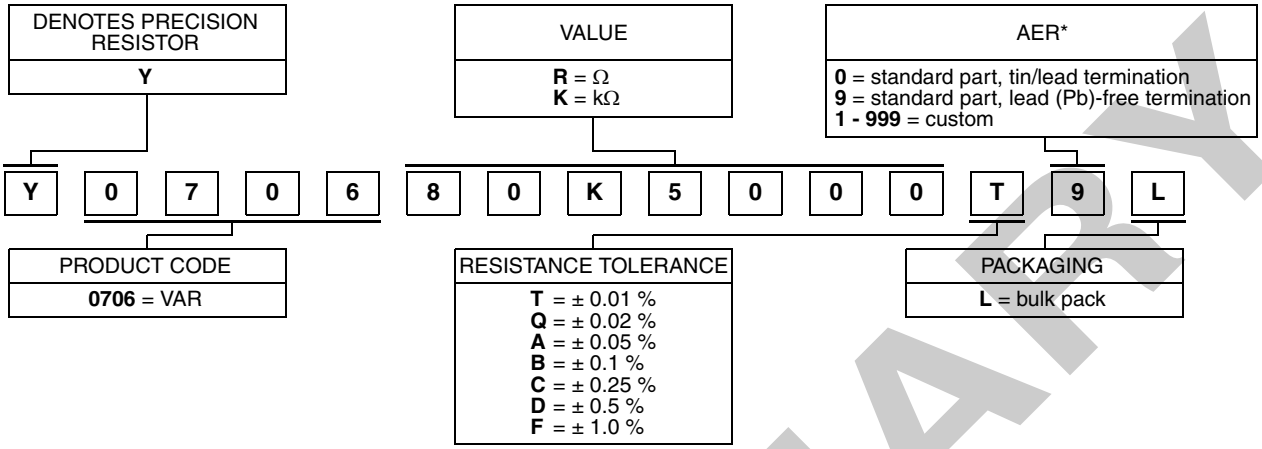
FIGURE 4 - TRIMMING TO VALUES
(Conceptual Illustration)



Note: Foil shown in black, etched spaces in white

TABLE 3 - GLOBAL PART NUMBER INFORMATION

NEW GLOBAL PART NUMBER: Y070680K5000T9L (preferred part number format)



FOR EXAMPLE: ABOVE GLOBAL ORDER Y0706 80K5000 T 9 L:

TYPE: VAR
VALUE: 80.5 kΩ
ABSOLUTE TOLERANCE: ± 0.01 %
TERMINATION: lead (Pb)-free
PACKAGING: 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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