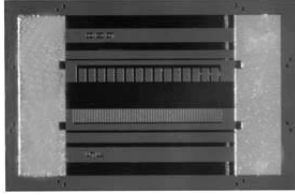


Thin Film Power Resistors



Product may not
be to scale

The PWA series resistor chips offer a 500 mW power rating in a small size. These offer one of the best combinations of size and power available.

The PWAs are manufactured using Vishay Electro-Films (EFI) sophisticated thin film equipment and manufacturing technology. The PWAs are 100 % electrically tested and visually inspected to MIL-STD-883.

FEATURES

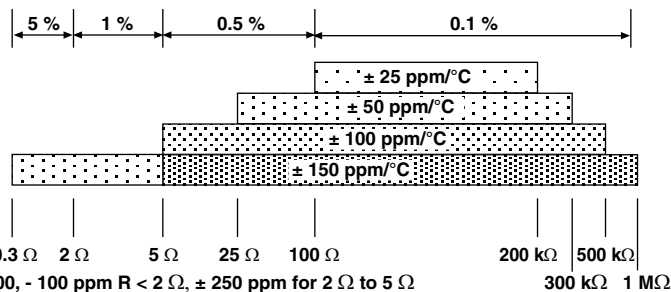
- Wire bondable
- 500 mW power
- Chip size: 0.030 x 0.045 inches
- Resistance range 0.3 Ω to 1 M Ω
- Oxidized silicon substrate for good power dissipation
- Resistor material: Tantalum nitride, self-passivating

APPLICATIONS

The PWA resistor chips are used mainly in higher power circuits of amplifiers where increased power loads require a more specialized resistor.

TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES AND TOLERANCES

Tightest Standard Tolerance Available



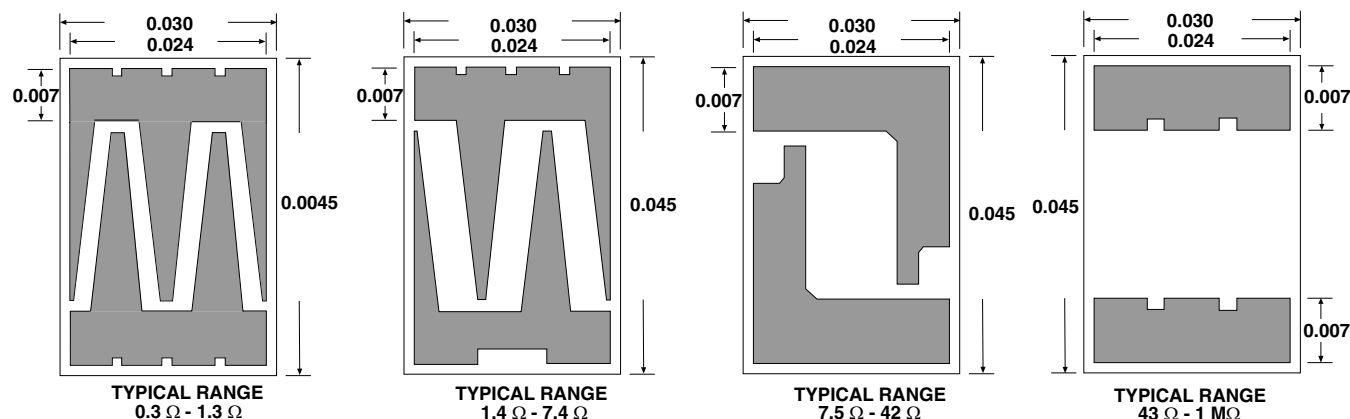
PROCESS CODE

CLASS H*	CLASS K*
002	006
001	005
000	008
009	010

*MIL-PRF-38534 inspection criteria

STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	
Noise, MIL-STD-202, Method 308 100 Ω - 250 k Ω < 100 Ω or > 251 k Ω	- 35 dB typ. - 20 dB typ.
Moisture Resistance, MIL-STD-202 Method 106	$\pm$ 0.5 % max. $\Delta R/R$
Stability, 1000 h, + 125 $^{\circ}$ C, 250 mW	$\pm$ 0.5 % max. $\Delta R/R$
Operating Temperature Range	- 55 $^{\circ}$ C to + 125 $^{\circ}$ C
Thermal Shock, MIL-STD-202, Method 107, Test Condition F	$\pm$ 0.1 % max. $\Delta R/R$
High Temperature Exposure, + 150 $^{\circ}$ C, 100 h	$\pm$ 0.2 % max. $\Delta R/R$
Dielectric Voltage Breakdown	200 V
Insulation Resistance	10 ¹² min.
Operating Voltage Steady State 5 x Rated Power	100 V max. 200 V max.
DC Power Rating at + 70 $^{\circ}$ C (Derated to Zero at + 175 $^{\circ}$ C) (Conductive Epoxy Die Attach to Alumina Substrate)	500 mW
5 x Rated Power Short-Time Overload, + 25 $^{\circ}$ C, 5 s	$\pm$ 0.1 % max. $\Delta R/R$

DIMENSIONS in inches

**CHIP
RESISTORS**
SCHEMATIC

MECHANICAL SPECIFICATIONS in inches

PARAMETER	
Chip Size	0.030 x 0.045 ± 0.002 (0.762 x 1.143 ± 0.5 mm)
Chip Thickness	0.010 ± 0.002 (0.254 ± 0.05 mm)
Chip Substrate Material	Oxidized silicon, 10 kÅ minimum SiO ₂
Resistor Material	Tantalum nitride, self-passivating
Bonding Pad Size	0.007 x 0.024 (0.1778 x 0.6096 mm)
Number of Pads	2
Pad Material	10 kÅ minimum aluminum
Backing	None, lapped semiconductor silicon

Options: Gold back for eutectic die attach
Gold bonding pads, 15 kÅ minimum thickness
Contact Applications Engineer

ORDERING INFORMATION

Example: 100 % visual, 10 kΩ, ± 1 %, ± 100 ppm/°C TCR, aluminum pads, class H visual inspection

W INSPECTION/ PACKAGING	PWA PRODUCT FAMILY	000 PROCESS CODE	1000 RESISTANCE VALUE	1 MULTIPLIER CODE	F TOLERANCE CODE
W = 100 % visually inspected parts in matrix tray per MIL-STD-883 X = Sample, visually inspected parts loaded in matrix trays (4 % AQL)		See Process Code table	Use first 4 digits significant digits of the resistance	D = 0.0001 C = 0.001 B = 0.01 A = 0.1 0 = 1 1 = 10 2 = 100 3 = 1000	B = 0.1 % C = 0.2 % D = 0.5 % F = 1.0 % G = 2.0 % H = 2.5 % J = 5.0 % K = 10 %



Disclaimer

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

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