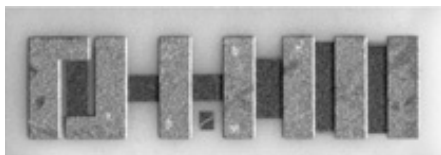


Thin Film Tapped Microwave Resistor



Product may not be to scale

The TMR resistor chips on alumina are designed with multiple low ohm taps for circuit trimming. The resistor geometries are compatible with strip lines, making them ideally suited for microwave circuits.

These chips are manufactured using Vishay Electro-Films (EFI) sophisticated Thin Film equipment and manufacturing technology. The TMRs are 100 % electrically tested and visually inspected to MIL-STD-883.

APPLICATIONS

Vishay EFI TMR chip resistors provide excellent high frequency response and are ideally suited for prototyping. Typical application areas are:

- Amplifiers
- Oscillators
- Attenuators
- Couplers
- Filters
- Limiters

FEATURES

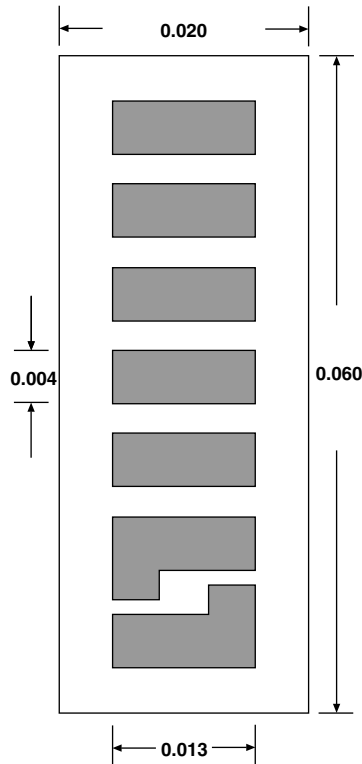
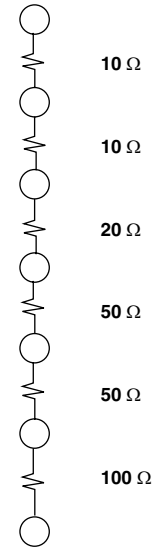
- Wire bondable
- Six resistors on a single chip: size 0.020 x 0.060 inches
- Resistance range: 10 Ω Sto 240 Ω
- Alumina substrate
- Low stray capacitance: < 0.2 pF
- Resistor material: Tantalum nitride self passivating
- High frequency

TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES AND TOLERANCES

Individual Resistances	10 Ω , 20 Ω , 50 Ω , 100 Ω
Total Resistance	240 Ω
Tolerance	\pm 10 % of total value
TCR	\pm 100 ppm/ $^{\circ}$ C

STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	
Noise, MIL-STD-202, Method 308	- 20 dB typical
Moisture Resistance, MIL-STD-202, Method 106	\pm 0.5 % max. $\Delta R/R$
Stability, 1000 h, + 125 $^{\circ}$ C, 62 mW	\pm 1.0 % 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 0.25 % max. $\Delta R/R$
High Temperature Exposure, + 150 $^{\circ}$ C, 1000 h	\pm 0.5 % max. $\Delta R/R$
Dielectric Voltage Breakdown	200 V
Insulation Resistance	10 ¹² min.
Operating Voltage	100 V max.
DC Power Rating at + 70 $^{\circ}$ C (Derated to Zero at 150 $^{\circ}$ C)	125 mW
5 x Rated Power Short-Time Overload, + 25 $^{\circ}$ C, 5 s	\pm 0.25 % max. $\Delta R/R$

DIMENSIONS in inches

SCHEMATIC

MICROWAVE RESISTORS

MECHANICAL SPECIFICATIONS in inches	
PARAMETER	
Chip Size	0.020 x 0.060 ± 0.003 (1.5 x 0.5 ± 0.08 mm)
Chip Thickness	0.010 ± 0.002 (0.25 ± 0.05 mm)
Chip Substrate Material	99.6 % alumina, 2 - 4 microinch finish
Resistor Material	Tantalum nitride, self passivating
Bonding Pad Size	0.004 x 0.013 (0.10 x 0.33 mm)
Number of Pads	7
Pad Material	15 kÅ minimum gold
Backing	None

Options: Gold back for solder die attach
Contact Applications Engineer

ORDERING INFORMATION					
Example: 100 % visualled, 240 Ω, ± 10 %, ± 100 ppm/°C TCR, gold pads, class H visual inspection					
W INSPECTION/ PACKAGING	TMR PRODUCT FAMILY	005 PROCESS CODE	2400 RESISTANCE VALUE	A MULTIPLIER CODE	K TOLERANCE CODE
W = 100 % visually inspected parts in matrix trays 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 (R_T)	A = 0.1	K = 10 % M = 20 % L = 25 % N = 50 %



Disclaimer

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