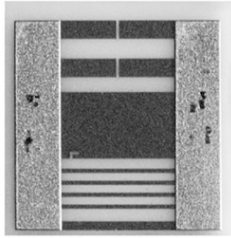


# Thin Film Microwave Resistor

MICROWAVE RESISTORS



Product may not be to scale

The MID resistor chips on alumina are designed for low shunt capacitance applications with 200mW power requirements. These chips are manufactured using Vishay Electro-Films (EFI) sophisticated Thin Film equipment and manufacturing technology. The MIDs are 100% electrically tested and visually inspected to MIL-STD-883.

## FEATURES

- Chip size: 0.050 inches square
- Microwave resistance range: 18Ω to 500Ω
- Overall resistance range: 2Ω to 100kΩ
- Alumina substrate
- Low stray capacitance: < 0.2pF
- Power: 200mW
- Resistor material: tantalum nitride, self passivating
- Moisture resistant

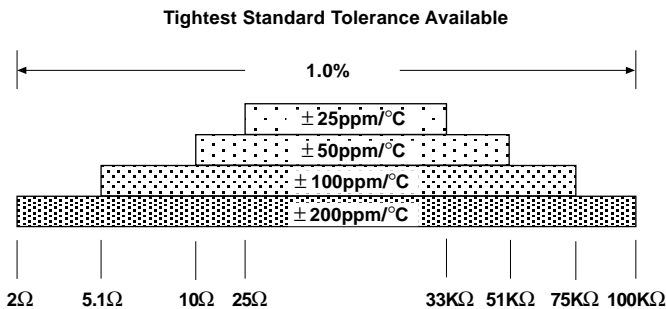
## APPLICATIONS

Vishay MID chip resistors provide excellent high-frequency response and are ideally suited for prototyping.

Typical application areas are:

- Amplifiers
- Oscillators
- Attenuators
- Couplers
- Filters

## TEMPERATURE COEFFICIENT OF RESISTANCE, VALUES AND TOLERANCES



PROCESS CODE		MICROWAVE	
CLASS H*	CLASS K*	CLASS H*	CLASS K*
003	007	-	-
002	006	-	-
001	005	-	-
000	004	008	009

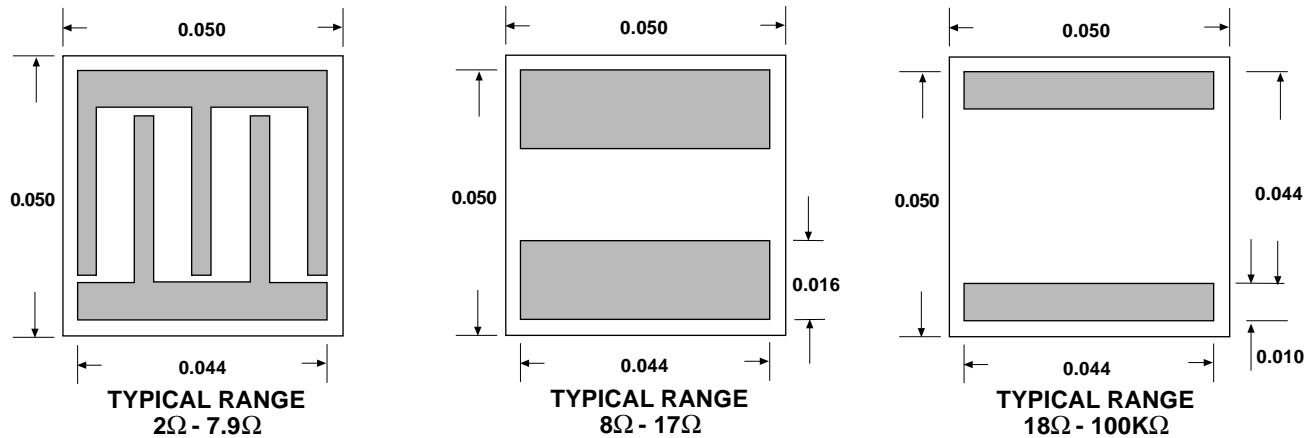
\*MIL-PRF-38534

**NOTE:** Only 18Ω to 500Ω are standard strip line designs for Microwave applications

## STANDARD ELECTRICAL SPECIFICATIONS

PARAMETER	
Noise, MIL-STD-202, Method 308	- 20dB typical
Moisture resistance, MIL-STD-202, Method 106	± 0.1% maximum ΔR/R
Stability, 1000 hours, + 125°C, 100mW	± 0.2% maximum ΔR/R
Operating temperature range	- 55°C to + 125°C
Thermal shock, MIL-STD-202, Method 107, Test condition F	± 0.1% maximum ΔR/R
High temperature exposure, + 150°C, 1000 hours	± 0.2% maximum ΔR/R
Dielectric voltage breakdown	400V
Insulation resistance	10 <sup>12</sup> minimum
Operating voltage	100V maximum
DC power rating at + 70°C (derated to zero at 150°C)	200mW maximum
5 x rated power short-time overload, + 25°C, 5 seconds	± 0.1% maximum ΔR/R

VISHAY ELECTRO-FILMS • 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  
 • ITALY + 39.2.300.11911 FAX: +39.2.300.11999 • JAPAN +81.42.729.0661 FAX: +81.42.729.3400 • SINGAPORE +65.788.6668 FAX: +65.788.0988  
 • SWEDEN +46.8.594.70590 FAX: +46.8.594.70581 • UK +44 191 514 8237 FAX: +44 1953 457 722 • USA: (401) 738-9150 FAX: (401) 738-4389

**DIMENSIONS** in inches

**SCHEMATIC**


<b>MECHANICAL SPECIFICATIONS</b> in inches	
PARAMETER	
Chip size	0.050 x 0.050 ± 0.003 (1.27 x 1.27 ± 0.076mm)
Chip thickness	0.010 ± 0.002 (0.254 ± 0.05mm)
Chip substrate material	99.6% alumina, 2 - 4 microinch finish
Resistor material	Tantalum nitride, self passivating
Bonding pad size	0.010 x 0.044 (0.254 x 1.11mm)
Number of pads	2
Pad material	25kÅ minimum gold standard
Backing	None

**OPTIONS:** Terminations: Aluminum, Nickel solder (62/32/2)  
 Gold back for solder die attach  
 Consult Applications Engineer

<b>ORDERING INFORMATION</b>						
Example: 100% visualled, 50Ω, ± 10%, ± 100ppm/°C TCR, Gold Pads, Class H						
<b>P/N:</b>	<b>W</b>	<b>MID</b>	<b>001</b>	<b>5000</b>	<b>B</b>	<b>K</b>
	INSPECTION /PACKAGING	PRODUCT FAMILY	PROCESS CODE	RESISTANCE VALUE	MULTIPLIER CODE	TOLERANCE CODE
	<b>W</b> = 100% visually inspected parts in matrix tray per MIL-STD-883		See Process Code table	Use first 4 significant digits of resistance	<b>B</b> = 0.01 <b>A</b> = 0.1 <b>0</b> = 1 <b>1</b> = 10 <b>2</b> = 100	<b>F</b> = 1.0% <b>G</b> = 2.0% <b>H</b> = 2.5% <b>J</b> = 5.0% <b>K</b> = 10% <b>M</b> = 20% <b>L</b> = 25% <b>N</b> = 50%
	<b>X</b> = Sample commercial visually inspected loaded in matrix trays (4% AQL)					

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