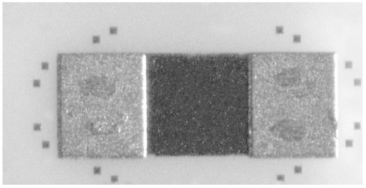
Thin Film Microwave Resistor



Product may not be to scale

The MIB resistor chips on alumina are designed with low shunt capacitance. Resistor geometrics 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 MIBs are 100% electrically tested and visually inspected to MIL-STD-883.

FEATURES

- Small single chip size: 0.010 x 0.020 inches
- Microwave resistance range: 20Ω to 100Ω
- Overall resistance range: 20Ω to 2kΩ
- Alumina substrate
- Low stray capacitance: < 0.2pF
- Resistor material: tantalum nitride, self passivating
- Moisture resistant

APPLICATIONS

Vishay EFI MIB 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	
Resistance Range	20Ω to 100Ω
Tolerance	± 5%, ± 10%, ± 20% standard
TCR	± 100ppm/°C

OPTIONS: TCR's: ± 50, ± 25ppm/°C
Tolerances: 1.0%
Values to 2k for non-microwave applications
Contact Applications Engineer

STANDARD ELECTRICAL SPECIFICATIONS	
PARAMETER	
Noise, MIL-STD-202, Method 308	- 20dB typical
Moisture resistance, MIL-STD-202, Method 106	± 0.5% maximum ΔR/R
Stability, 1000 hours, + 125°C, 12mW	± 0.5% maximum ΔR/R
Operating temperature range	- 55°C to + 125°C
Thermal shock, MIL-STD-202, Method 107, Test condition F	± 0.25% maximum ΔR/R
High temperature exposure, + 150°C, 1000 hours	± 0.5% maximum ΔR/R
Dielectric voltage breakdown	400V
Insulation resistance	10^{12} minimum
Operating voltage	100V maximum
DC power rating at + 70°C (derated to zero at 150°C)	25mW maximum
5 x rated power short-time overload, + 25°C, 5 seconds	± 0.25% maximum ΔR/R

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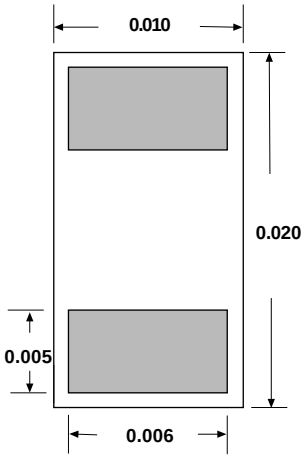
DIMENSIONS in inches



SCHEMATIC

MECHANICAL SPECIFICATIONS in inches	
PARAMETER	
Chip size	0.010 x 0.020 ± 0.002 (0.25 x 0.5 ± 0.08mm)
Chip thickness	0.010 ± 0.002 (0.25 ± 0.05mm)
Chip substrate material	99.6% alumina, 2 - 4 microinch finish
Resistor material	Tantalum nitride, self passivating
Bonding pad size	0.005 x 0.006 (0.12 x 0.24mm)
Number of pads	2
Pad material	25kÅ minimum gold standard
Backing	None

OPTIONS: Terminations: Aluminum
Gold back for solder die attach
Contact Applications Engineer

ORDERING INFORMATION

Example: 100% visualled, 50Ω, ± 10%, ± 100ppm/°C TCR, Gold Pads, Class H

P/N:	**W**	**MIB**	**002**	**5000**	**B**	**K**
	INSPECTION /PACKAGING	PRODUCT FAMILY	PROCESS CODE	RESISTANCE VALUE	MULTIPLIER CODE	TOLERANCE CODE
	W = 100% visually inspected parts in matrix tray per MIL-STD-883 **X** = Sample, visually inspected loaded in matrix trays (4% AQL)			Use first 4 significant digits of resistance	**B** = 0.01 **A** = 0.1 **0** = 1	**F** = 1.0% **G** = 2.0% **H** = 2.5% **J** = 5.0% **K** = 10% **M** = 20% **L** = 25% **N** = 50%