TMR THIN-FILM TAPPED MICROWAVE RESISTORS

A-19-05

T-62-05

FEATURES

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

These chips are manufactured using state-of-the-art thin-film techniques, are 100% electrically tested and visually inspected to MIL-STD-883.

- Six resistors on a single chip, size 20 x 60 mil
- Alumina substrate
- Low stray capacitance
- Resistance values 10Ω to 240Ω
- Resistor material tantalum nitride, self-passivating
- Quick delivery

TCR VALUES AND TOLERANCES

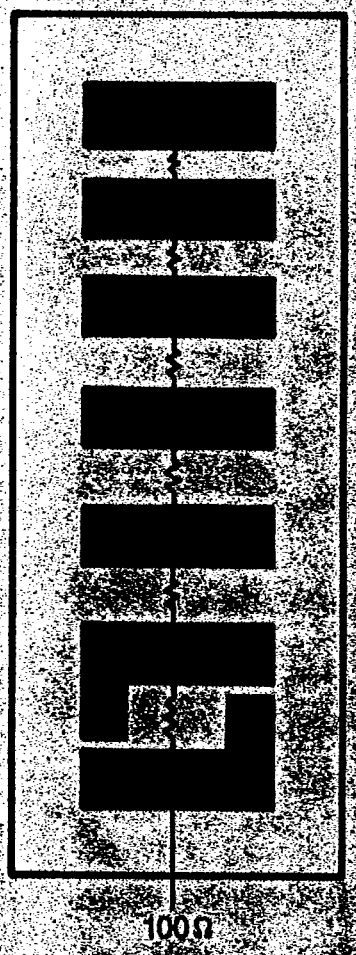
Individual resistances	10, 10, 20, 50, 50, 100Ω
Total resistance	240Ω
Tolerance	±10% of total value
TCR	±100 ppm/°C

ELECTRICAL CHARACTERISTICS

Noise, MIL-STD-202, Method 308	-20 dB max.
Moisture resistance, MIL-STD-202, Method 106	±0.5% max. ΔR/R
Stability, 1000 hr., +125 °C, 62 mw	±1.0% max. ΔR/R
Operating temperature range	-55 °C to +125 °C
Thermal shock, MIL-STD-202, Method 107, Test Condition F	±0.25% max. ΔR/R
High temperature exposure +150 °C, 100 hr.	±0.5% max. ΔR/R
Dielectric voltage breakdown	400 V
Insulation resistance	10^{12}Ω min.
Operating voltage	100 V max.
DC power rating at +70 °C (derated to zero at 150 °C)	125 mw
5 x rated power short-time overload +25 °C, 5 seconds	±0.25% max. ΔR/R

Semi Films Division
P.O. Box 188
West Hurley, NY 12491
Tel. (914) 338-7714
Fax (914) 338-6329

Electro-Films Inc.



MECHANICAL DATA

Chip size	20 x 60 ±3 mil (1.5 x 0.5 ±0.08 mm)
Chip thickness	10 ±1 mil (0.25 ±0.03 mm)
Chip substrate material	99.6% alumina, 2-4 μ inch finish
Resistor material	Tantalum nitride, self-passivating
Bonding pad size	4 x 13 mil (0.10 x 0.33 mm)
No. of pads	7
Pad material	15 kÅ min. Gold
Backing	None

OPTION: Gold back for eutectic die attach

APPLICATIONS

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

Typical application areas are:

- Amplifiers
- Couplers
- Oscillators
- Filters
- UCO's
- Attenuators
- Limiters

PART NUMBER DESIGNATION

Example: 100% visualled, ±10%, ±100 ppm TCR

P/N: W TMR - 005 - 2400 A K

- W — Product Family
- TMR — Process Code
- 005 — Value - Use First Four significant digits of the Resistance (Rt)
- 2400 — Multiplier Code: A 0.1
- A — Tolerance Code: K 10%, M 20%, L 25%, N 50%
- K — Inspection/Packaging
  - Use - W for 100% visually inspected parts, per MIL-STD-883
  - X for sample, visually inspected loaded in matrix trays (4% AQL)
  - Y for sample, visually inspected die loaded in vials (4% AQL)