60 Series

Four Terminal Bare Element

Ohmite's Four Terminal Bare Element Resistors provide ultra low resistance values (to 0.0005Ω) for relatively high current requirements, with the advantages of a Kelvin configuration and PC Board mounting capability.

These shunt resistors are specifically designed for low resistance applications requiring the highest accuracy and temperature stability. This Four Terminal version of Ohmite's 60 Series Resistor is specially designed for use in a Kelvin configuration, in which a current is applied through two opposite terminals and sensing voltage is measured across the other two terminals.

The Kelvin configuration enables the resistance and temperature coefficient of the terminals to be effectively eliminated. The four terminal design also results in a lower Temperature Coefficient of Resistance and lower self heating drift which may be experienced on two terminal resistors. The requirement to connect to the terminals at precise test points is eliminated, allowing for tighter tolerancing on the end application.



FEATURES

- Ideal for current sensing applications
- 1% tolerance standard, others available
- Low inductance (non-inductive below 0.05Ω)
- RoHS compliant
- Radial, self-supporting, design is ideal for PC board mounting
- High Power-to-size ratio
- Decimal marked, silicone coated (650) Series only)

SERIES SPECIFICATIONS

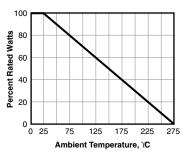
| Series | Wattage | Resistance Range (Ω)* | Amps max. | Tolerance* |
|--------|---------|--------------------------------|-----------|------------|
| 610 | 1W | 0.002-0.050 | 32 | 1% |
| 650 | 5W | 0.002-0.005 | 100 | 1% |

^{*}Standard: others available

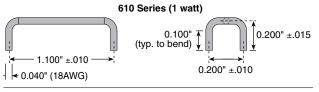
CHARACTERISTICS

| Terminals | Tinned Copper |
|---------------------------------------|---|
| Resistive element | Manganin Alloy |
| Operating Temperature Range | -55°C to +275°C. |
| Temperature Coefficient of Resistance | 0°C to 85°C: ± 50 PPM/°C, .015Ω and higher; ± 100 PPM/°C, .015Ω and lower |
| Environmental Performance | Exceeds the requirements of MIL-PRF-49465 |
| Power rating | Based on 25°C free air rating |
| Overload | 5 times rated wattage for 5 seconds |
| Thermal EMF | Less than ±3µV/°C |
| Derating | Linearly from 100% @ +25°C to 0% @ 275°C |

Derating



DIMENSIONS



650 Series (5 watt) 1.400" max. 0.450" ± 0.180" **¥** 0.100" max. (typ. tinned (typ. to bend) ▼ surface) 1.000" ±.010 0.250" + 010◆ 0.081" (12AWG)

ORDERING INFORMATION

Terminals **RoHS Compliant** Ohm Value Tolerance Example: R050= 0.05Ω Wattage D = 0.5%

Stdandard part numbers Ohmic 610 Series 650 Series value 1 watt 5 watt 0.002 610FPR002E 610FPR005E 0.005

650FPR002E 650FPR005E 0.010 610FPR010E 0.015 610FPR015E 0.020 610FPR020E 0.025 610FPR025F 0.036 610FPR036F 0.050 610FPR050E