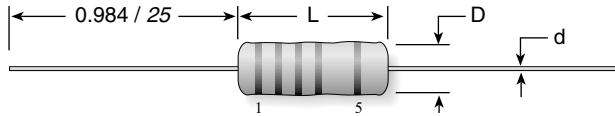


Miniature Wirewound Current Sense Resistors



WL Series



| Type | Power Rating (watts) | Resistance Range (Ω) | Dim. L (mm/in) | Dim. D (mm/in) | Dim. d (mm/in) |
|------|----------------------|-------------------------------|----------------|----------------|----------------|
| WLA | 0.5 | 0.005-0.100 | 5.08 / 0.200 | 2.54 / 0.100 | 0.60 / 0.024 |
| WLB | 1 | 0.005-0.100 | 7.00 / 0.276 | 3.00 / 0.120 | 0.60 / 0.024 |
| WLC | 2 | 0.010-0.100 | 11.4 / 0.450 | 6.86 / 0.270 | 0.80 / 0.031 |

PERFORMANCE CHARACTERISTICS

| Test | Conditions Of Test | Performance |
|---------------------------------|---|-------------|
| Thermal Shock | Rated power applied until thermal stability, -55°C +0°C, -5°C, 15min. | ±2.0% |
| Short-time Overload | 5 times rated wattage for 5 seconds | ±2.0% |
| Solderability | Method 208 of MIL-STD-202 | ±2.0% |
| Terminal Strength | Pull test: 10 pounds, 5 to 10 seconds, Twist test: 1080°, 5 second/rotation | ±1.0% |
| Dielectric Withstanding Voltage | 500 Volts rms for 1W, 2W 1000 Volts rms for 3W. 1 minute | ±1.0% |
| High Temperature Exposure | Exposed to an ambient temperature of 275 +5/-0°C for 250 ±8 hours, | ±5.0% |
| Moisture Resistance | MIL-STD-202 Method 106, 7b not applicable | ±2.0% |
| Low Temperature Storage | Cold chamber at a temperature of -65 ±2°C for 24 ±4 hours | ±2.0% |
| Shock, Specified Pulse | 6 milliseconds, 10 shocks | ±1.0% |
| Vibration, High Frequency | Frequency varied 10 to 2000Hz, 200G peak, 2 directions 6 hours each | ±1.0% |
| Load Life | 1000/2000 hours at rated power, +25°C, 1.5 hours "On", 0.5 hours "Off" | ±5.0% |

FEATURES

- Ultra-low ohmic value series for Current Sensing applications
- Very low inductance (<1nH at 1MHz Test)
- Miniaturized dimensions, Better power to dimension ratios
- Use of the highest quality standard (96% Alumina) ceramic core
- Manufacturing process—Wire winding/Spot Welding—by Computer Numerical Control (CNC) machine tools to ensure consistency of product quality.
- Encapsulated by epoxy molding compound
- Advanced IC encapsulation mold/die technologies

SPECIFICATIONS

Material

Ceramic Core: CeramTec

Rubalit® 96% alumina

End Caps: Stainless steel, precision formed

Leads: Copper wire, 100% Sn (Lead Free) coated

CN49W alloy resistance wire TC ±20ppm/°C

Encapsulation: SUMICON 1100/1200 Epoxy molding compound for IC encapsulation

Electrical

Standard Tolerance: D (0.5%), F (1.0%), J (5.0%)

Temperature Coefficient (ppm/°C):

±300ppm/°C for ≤0.03Ω

±100ppm/°C for ≥0.033Ω

Maximum Working Voltage: $\sqrt{P \times R}$

ORDERING INFORMATION

RoHS compliant
W L A R 0 1 0 F E - T
Series Power Ohms Tolerance Package
A, B or C F = 1% T = Tape
J = 5% blank = 25pc Pack

KEY TO FIVE-BAND CODE



| Band | 1 | 2 | 3 | 4 | 5 |
|--------|-------|------------|-----------|----------|-------------|
| Color | Digit | Multiplier | Tolerance | | |
| Black | 0 | 0 | 0 | x 1Ω | |
| Brown | 1 | 1 | 1 | x 10Ω | ± 1% (F) |
| Red | 2 | 2 | 2 | x 100Ω | ± 2% (G) |
| Orange | 3 | 3 | 3 | x 1KΩ | |
| Yellow | 4 | 4 | 4 | x 10KΩ | |
| Green | 5 | 5 | 5 | x 100KΩ | ± 0.5% (D) |
| Blue | 6 | 6 | 6 | x 1MΩ | ± 0.25% (C) |
| Violet | 7 | 7 | 7 | x 10MΩ | ± 0.10% (B) |
| Grey | 8 | 8 | 8 | | ± 0.05% |
| White | 9 | 9 | 9 | x 0.001Ω | |
| Gold | | | | x 0.1Ω | ± 5% (J) |
| Silver | | | | x 0.01Ω | ± 10% (K) |

STANDARD PART NUMBERS AVAILABLE

| Wattage: | 0.5 | 1.0 | 2.0 |
|----------|-----------|-----------|-----------|
| Series: | WLA | WLB | WLC |
| Ohms | | | |
| 0.005 | WLAR005FE | WLBR005FE | WLCR01FE |
| 0.01 | WLAR01FE | WLBR01FE | WLCR015FE |
| 0.015 | WLAR015FE | WLBR015FE | WLCR02FE |
| 0.02 | WLAR02FE | WLBR02FE | |
| 0.025 | WLAR025FE | WLBR025FE | WLCR025FE |
| 0.03 | WLAR03FE | WLBR03FE | WLCR03FE |
| 0.05 | WLAR05FE | WLBR05FE | WLCR05FE |
| 0.10 | WLAR10FE | WLBR10FE | WLCR10FE |