

# LOW RESISTANCE METAL ELEMENT RESISTOR



## LOB SERIES



- Ultra low resistance values (0.005Ω to 0.1Ω)
- Available in 1-watt, 3-watt and 5-watt rated packages
- Tolerances from ±1% to ±5%
- Inherently non-inductive ( $\leq 0.02\mu\text{H}$  @ 0.5MHz)
- Low temperature coefficient of resistance
- High stability over life

### DESCRIPTION:

LOBΩ Series power precision metal element resistors feature resistance values down to 0.005Ω with virtually no inductance. Available in 1-, 3- and 5-watt rated axial leaded packages, these resistors are compatible with automatic insertion equipment.

### APPLICATIONS:

- Switchmode and linear power supplies.
- Automotive current-sensing circuits
- Instrumentation
- Regulators

### CONSTRUCTION:

LOBΩ Series resistors feature tinned copper leads welded directly to a low-temperature coefficient resistance element in a highly automated proprietary process. The leaded resistor elements are then encapsulated in a molding compound.

### ABSOLUTE MAXIMUM RATINGS:

CHARACTERISTIC	LOB-1	LOB-3	LOB-5	Units
Continuous power dissipation @ 25°C in free air	1	3	5	Watts
Overload power for 5 seconds	5	15	25	Watts
Maximum working voltage	$\sqrt{1 \times R}$	$\sqrt{3 \times R}$	$\sqrt{5 \times R}$	Volts
Maximum storage temperature	175	175	175	°C

**\*Power Dissipation** - The maximum wattage rating depends upon the amount of heat which can be transferred to the surroundings while not exceeding the maximum element temperature. Ambient air temperature, velocity of cooling air, thermal resistance of heat, and the temperature of surrounding objects will affect this transfer, and must be taken into account when selecting a resistor.

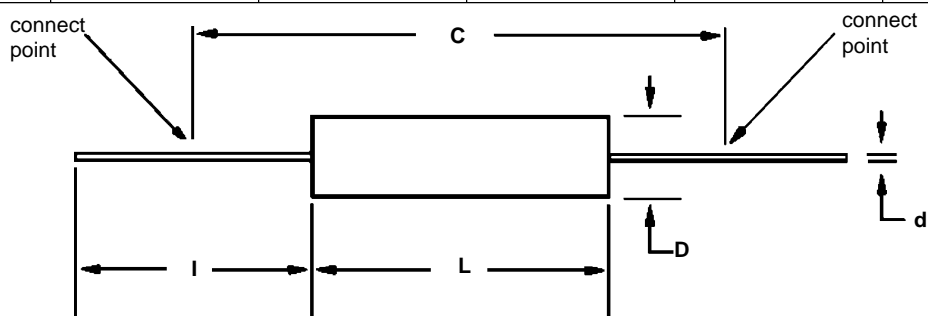
### GENERAL SPECIFICATIONS - ENVIRONMENTAL TESTING\*:

TEST PARAMETERS	MIL-STD 202	MAX %ΔR *	Unit
Load Life (2,000 hours)	Method 108	±1%	%ΔR
Thermal Shock	Method 107	±1%	%ΔR
Vibration	Method 204	±0.5%	%ΔR
Mechanical Shock	Method 213	±0.5%	%ΔR
Dielectric Strength	Method 301	±0.5%	%ΔR
Insulation Resistance	Method 302	>10 <sup>11</sup>	Ohms

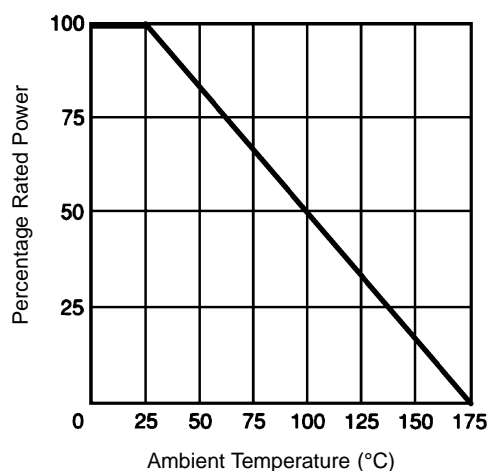
\*±0.0005 ohm allowance for test/contact error.

# **LOB DIMENSIONS (Inches and (mm)):**

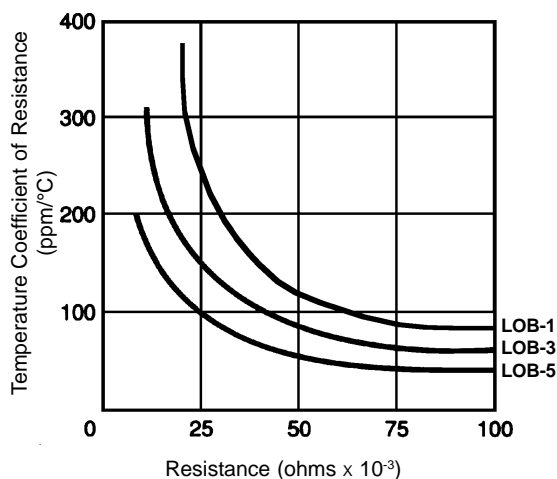
Style	L	D	C	I	d
<b>LOB-1</b>	0.390 ±0.010 (9.9 ±0.3)	0.140 ±0.008 (3.6 ±0.2)	1.31 (33.274)	1.50 ±0.125 (38.1 ±3.2)	0.0305 ±0.002 (0.813 ±0.051)
<b>LOB-3</b>	0.560 ±0.010 (14.224 ±0.254)	0.210 ±0.010 (5.334 ±0.254)	1.31 (33.274)	1.375 ±0.125 (34.925 ±3.175)	0.0305 ±0.002 (0.813 ±0.051)
<b>LOB-5</b>	0.920 ±0.010 (23.368 ±0.254)	0.330 ±0.010 (8.382 ±0.254)	1.670 (42.418)	1.250 ±0.125 (31.750 ±3.175)	0.040 ±0.002 (1.016 ±0.051)



## **POWER DERATING PERCENTAGE VS. FREE AIR AMBIENT TEMPERATURE:**



## **TEMPERATURE COEFFICIENT OF RESISTANCE VS. RESISTANCE VALUE:**



## **HOW TO ORDER:**

To order, specify style, resistance value, tolerance and package type as in the following example:

**LOB-3 0.01Ω 1% LT**

### **Style**

LOB-1 (1 watt)  
LOB-3 (3 watt)  
LOB-5 (5 watt)

### **Resistance Value**

0.005Ω 0.02Ω 0.04Ω 0.08Ω  
0.01Ω 0.025Ω 0.05Ω 0.1Ω  
0.015Ω 0.03Ω 0.07Ω Contact factory for other values

### **Tolerance**

5%, 3%, 1% - All styles/values

### **Packaging**

**LT (Lead Tape)** 500 pcs. min.  
LOB-1 3500pcs. max  
LOB-3 1250 pcs. max.  
LOB-5 800 pcs. max.

**BLK (Bulk Pack)** 500/box  
packed loose in box