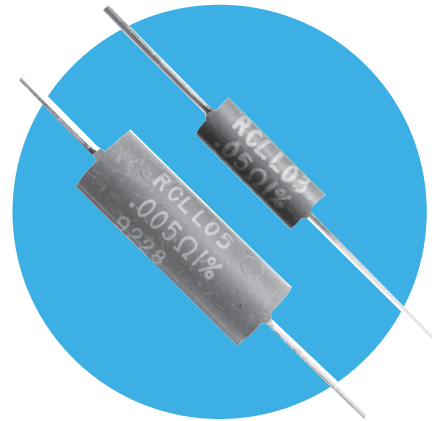


# Low Resistance Metal Element Resistors

## LOB Series

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



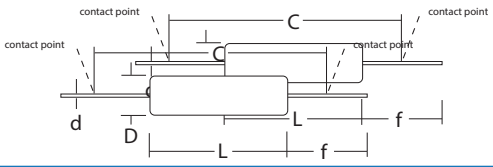
All Pb-free parts comply with EU Directive 2011/65/EU amended by (EU) 2015/863 (RoHS3)

## Electrical Data

| Electrical Data                                                                                                                                                                                                                                                                                                                                                                                  |                                                  |                     | LOB-1 |                     | LOB-3               |                     | LOB-5               |                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|---------------------|-------|---------------------|---------------------|---------------------|---------------------|---------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                  | Continuous power dissipation at 25°C in free air | watts               | LOB-1 | 1                   | LOB-3               | 3                   | LOB-5               | 5                   |
| Continuous power dissipation at 25°C in free air                                                                                                                                                                                                                                                                                                                                                 | watts                                            | watts               | 1     | 5                   | 3                   | 15                  | 5                   | 25                  |
| Overload power for working voltage                                                                                                                                                                                                                                                                                                                                                               | watts                                            | volts               | 5     | $\sqrt{1 \times R}$ | 15                  | $\sqrt{3 \times R}$ | 25                  | $\sqrt{5 \times R}$ |
| Resistance range                                                                                                                                                                                                                                                                                                                                                                                 | ohms                                             | R005 to R100        | 0.75  |                     | R005 to R120        | 0.75                | R005 to R100        | 0.75                |
| Maximum storage temperature                                                                                                                                                                                                                                                                                                                                                                      |                                                  |                     |       |                     |                     |                     |                     |                     |
| Maximum working voltage                                                                                                                                                                                                                                                                                                                                                                          | volts                                            | $\sqrt{1 \times R}$ |       |                     | $\sqrt{3 \times R}$ |                     | $\sqrt{5 \times R}$ |                     |
| * 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, this must be taken into account when selecting a resistor. |                                                  |                     |       |                     |                     |                     |                     |                     |
| Operating temperature                                                                                                                                                                                                                                                                                                                                                                            | °C                                               | 55 to 175           |       |                     | 55 to 175           |                     | 55 to 175           |                     |

\* 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, this must be taken into account when selecting a resistor.

## Physical Data

| Dimensions (mm) |       |                  |                 |                  |                  |       |  |
|-----------------|-------|------------------|-----------------|------------------|------------------|-------|--------------------------------------------------------------------------------------|
| Dimensions (mm) | Type  | L max.           | D max.          | f min.           | d nom.           | C     |                                                                                      |
| Type            | LOB-1 | 9.9 $\pm$ 0.3    | 3.6 $\pm$ 0.2   | 38.1 $\pm$ 3.2   | 0.813 $\pm$ 0.05 | 33.27 |                                                                                      |
| LOB-1           | LOB-3 | 34.22 $\pm$ 0.5  | 5.23 $\pm$ 0.3  | 42.3 $\pm$ 3.8   | 0.805 $\pm$ 0.05 | 33.27 |                                                                                      |
| LOB-3           | LOB-5 | 23.37 $\pm$ 0.25 | 8.38 $\pm$ 0.25 | 31.75 $\pm$ 3.18 | 1.02 $\pm$ 0.05  | 42.42 |                                                                                      |
| LOB-5           |       |                  |                 |                  |                  |       |                                                                                      |

## Description

The LOB Series power precision metal element resistors feature ultra low resistance values down to 0.005Ω with 5 watt rated axial leaded packages. Available in 1, 3 and 5 watt rated packages. The resistors are compatible with automatic insertion equipment.

## Applications

Switchmode and linear power supplies.

- Automotive current-sensing circuits.
- Automotive current-sensing circuits.
- Instrumentation.

## Construction

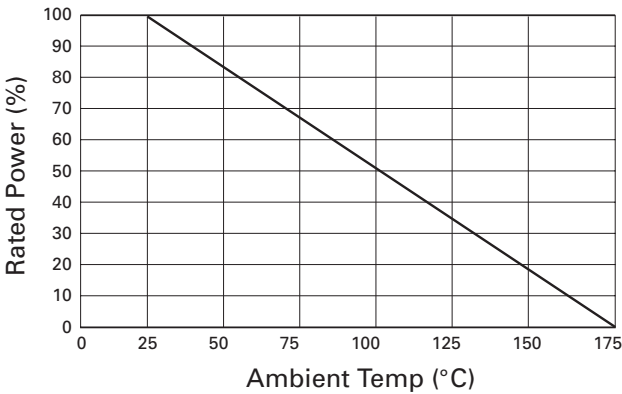
The LOB Series resistors feature tinned copper leads welded directly to a highly temperature coefficient resistant element in a highly automated process. The leaded resistor elements are then encapsulated in a moulding compound.

## General Note

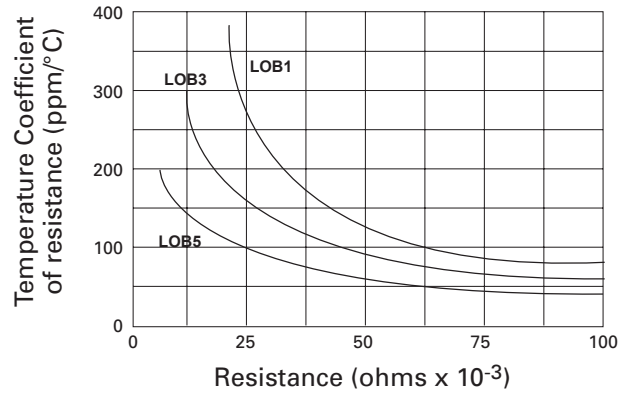
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

LOB Series

Power derating percentage vs  
Free air ambient temperature



Temperature coefficient of resistance vs  
Resistance value



| Test                   | MIL-STD 202 | MAX %ΔR*          | Unit |
|------------------------|-------------|-------------------|------|
| Load life (2000 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.

Packaging

Resistors are supplied taped and reeled.  
Bulk packaging available.

General Note

TT Electronics reserves the right to make changes in product specification without notice or liability.  
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

# Ordering Procedure

This product has two valid part numbers:

**European (Welwyn) Part Number: LOB3-R01JI** (LOB3, 10 milliohms  $\pm 5\%$ , Pb-free)

|   |   |   |   |   |   |   |   |   |   |  |
|---|---|---|---|---|---|---|---|---|---|--|
| L | O | B | 3 | - | R | 0 | 1 | J | I |  |
| 1 |   |   |   |   | 2 |   | 3 | 4 |   |  |

| 1    | 2        | 3              | 4                              |                  |
|------|----------|----------------|--------------------------------|------------------|
| Type | Value    | Tolerance      | Packing & Termination Finish   |                  |
| LOB1 | R = ohms | F* = $\pm 1\%$ | I = Standard packing & Pb-free |                  |
| LOB3 |          | H = $\pm 3\%$  | PB = Standard packing & SnPb   |                  |
| LOB5 |          | J* = $\pm 5\%$ | LOB1                           | Taped, 3500/reel |
|      |          | * preferred    | LOB3                           | Taped, 1250/reel |
|      |          |                | LOB5                           | Taped, 800/reel  |

**USA (IRC) Part Number: LOB-3R010FLFSLT** (LOB3, 10 milliohms  $\pm 5\%$ , Pb-free)

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L | O | B | - | 3 | R | 0 | 1 | 0 | F | L | F | S | L | T |
| 1 |   |   |   |   | 2 |   | 3 |   | 4 | 5 |   |   |   |   |

| 1     | 2        | 3             | 4                  | 5                |           |
|-------|----------|---------------|--------------------|------------------|-----------|
| Type  | Value    | Tolerance     | Termination Finish | Packing          |           |
| LOB-1 | R = ohms | F = $\pm 1\%$ | Omit for SnPb      | SLT = Lead Tape* |           |
| LOB-3 |          | H = $\pm 3\%$ | LF = Pb-free       | LOB-1            | 3500/reel |
| LOB-5 |          | J = $\pm 5\%$ |                    | LOB-3            | 1250/reel |
|       |          |               |                    | LOB-5            | 800/reel  |
|       |          |               |                    | BLK = Bulk       |           |
|       |          |               |                    | LOB-1            | 1500/box  |
|       |          |               |                    | LOB-3            | 800/box   |
|       |          |               |                    | LOB-5            | 200/box   |

\* preferred

### General Note

TT Electronics reserves the right to make changes in product specification without notice or liability.  
All information is subject to TT Electronics' own data and is considered accurate at time of going to print.



**Стандарт  
Электрон  
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331