

# Coiltronics RL0809 Series

## Unshielded radial leaded drum core inductors



### Product description

- Unshielded, leaded drum core
- Protective sleeving over winding
- Inductance range from 10 $\mu$ H to 33,000 $\mu$ H
- Current range from 0.042A to 2.9A
- 7.9 OD x 9.0mm through-hole package
- Ferrite core material
- Halogen free, lead free, RoHS compliant

### Applications

- LED Drivers and lighting
- Utility meters
- Appliance electronics
- Motor drives
- Power supplies
- General purpose filtering

### Environmental data

- Storage temperature range (Component): -40°C to +125°C
- Operating temperature range: -40°C to +125°C (ambient + self-temperature rise)



Powering Business Worldwide



The Coiltronics brand of magnetics (formerly of the Bussmann Division of Cooper Industries) is now part of Eaton's Electrical Group, Electronics Division.

**Coiltronics is now part of Eaton**  
**Same great products plus even more.**

**Product specifications**

| Part Number <sup>4</sup> | OCL <sup>1</sup><br>( $\mu\text{H}$ ) $\pm 10\%$ | $I_{\text{rms}}^2$<br>(amps) | $I_{\text{sat}}^3$<br>(amps) | DCR ( $\Omega$ )<br>@ 20°C max. | SRF<br>(MHz) typ. |
|--------------------------|--|------------------------------|------------------------------|---------------------------------|-------------------|
| RL0809-100-R             | 9.65   | 2.90                         | 2.47                         | 0.031                           | 18                |
| RL0809-102-R             | 992  | 0.312                        | 0.244                        | 2.69                            | 2                 |
| RL0809-152-R             | 1504   | 0.255                        | 0.198                        | 4.00                            | 2                 |
| RL0809-182-R             | 1792   | 0.240                        | 0.182                        | 4.52                            | 1                 |
| RL0809-222-R             | 2204   | 0.207                        | 0.164                        | 6.06                            | 1                 |
| RL0809-332-R             | 3297   | 0.170                        | 0.134                        | 9.06                            | 1                 |
| RL0809-682-R             | 6796   | 0.123                        | 0.093                        | 17.3                            | 0.69              |
| RL0809-822-R             | 8209   | 0.106                        | 0.085                        | 23.1                            | 0.67              |
| RL0809-103-R             | 10002  | 0.099                        | 0.077                        | 26.4                            | 0.59              |
| RL0809-123-R             | 12011  | 0.093                        | 0.070                        | 30.0                            | 0.52              |
| RL0809-223-R             | 21989  | 0.070                        | 0.052                        | 59.7                            | 0.39              |
| RL0809-333-R             | 32998  | 0.058                        | 0.042                        | 78.9                            | 0.31              |

1. Open Circuit Inductance (OCL) Test Parameters: 10kHz, 0.1V<sub>rms</sub>, 0.0Adc, 25°C

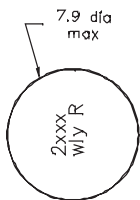
2.  $I_{\text{rms}}$ : DC current for an approximate temperature rise of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed 125°C under worst case operating conditions verified in the end application.

3.  $I_{\text{sat}}$ : Peak current for approximately 5% rolloff at +25°C

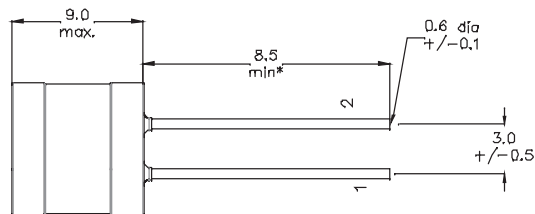
4. Part Number Definition: RL0809-yyy-R  
 - RL0809 = Product code and size  
 - yyy= Inductance value in  $\mu\text{H}$ , R = decimal point,  
 if no R is present then third character = number of zeros.  
 - "-R" suffix = RoHS compliant

**Dimensions - mm**

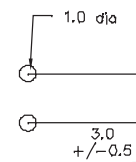
Top View



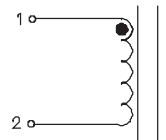
Side View



Recommended Hole Layout



Schematic

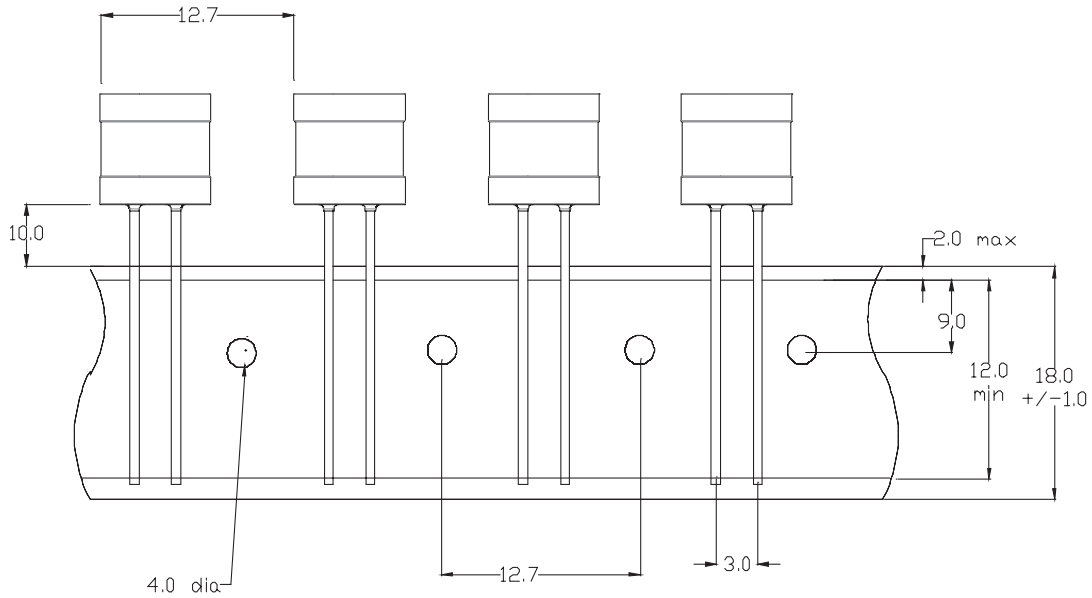


Part marking: 2xxx  
wly R

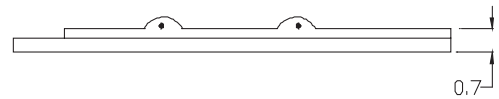
2= RL0809  
 xxx = inductance in  $\mu\text{H}$ , R = decimal point; if there is no R then third character = # of zeros.  
 wly= date code, R= revision level

\* Lead length is after the components are trimmed from the packaging tape roll

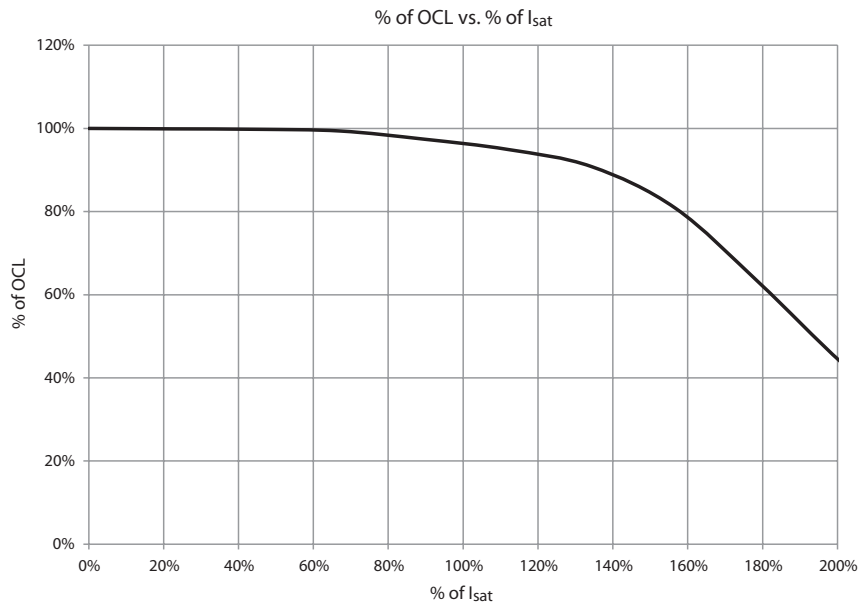
**Packaging information - mm**



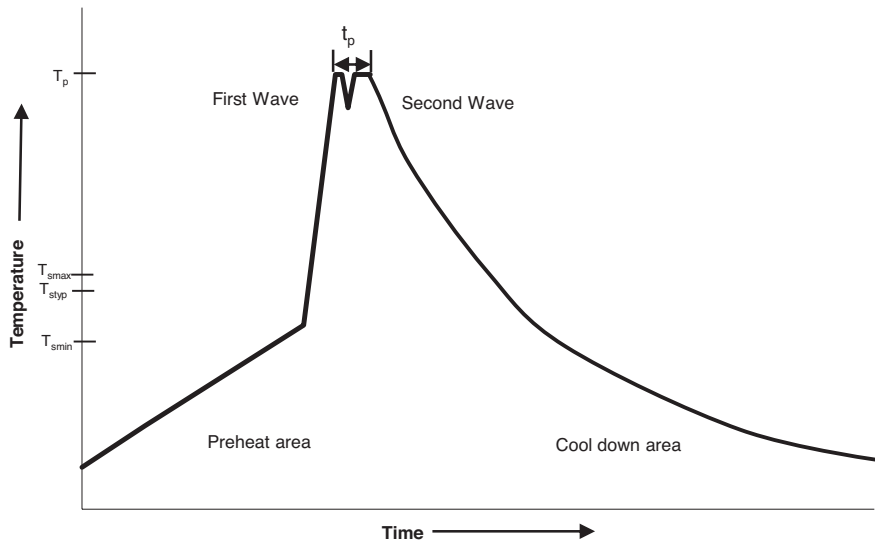
Supplied on cut tape roll packaging, 800 parts per roll.



**Inductance characteristics**



**Wave solder profile**



**Reference EN 61760-1:2006**

| Profile Feature                             | Standard SnPb Solder                      | Lead (Pb) Free Solder                     |
|---|---|---|
| <b>Preheat</b>                              |   |   |
| Temperature min. ( $T_{smin}$ )             | 100°C                                     | 100°C                                     |
| Temperature typ. ( $T_{styp}$ )             | 120°C                                     | 120°C                                     |
| Temperature max. ( $T_{smax}$ )             | 130°C                                     | 130°C                                     |
| Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ ) | 70 seconds                                | 70 seconds                                |
| $\Delta$ preheat to max Temperature         | 150°C max.                                | 150°C max.                                |
| Peak temperature ( $T_p$ )                  | 235°C - 260°C                             | 250°C - 260°C                             |
| Time at peak temperature ( $t_p$ )          | 10 seconds max<br>5 seconds max each wave | 10 seconds max<br>5 seconds max each wave |
| Ramp-down rate                              | ~ 2 K/s min<br>~3.5 K/s typ<br>~5 K/s max | ~ 2 K/s min<br>~3.5 K/s typ<br>~5 K/s max |
| Time 25°C to 25°C                           | 4 minutes                                 | 4 minutes                                 |

**Manual solder**

350°C, 4-5 seconds. (by soldering iron), generally manual, hand soldering is not recommended.

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Publication No. 10279 — BU-SB14461  
June 2014

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