# RL0809

## Unshielded radial leaded drum core inductors

**Product features**

- Unshielded, leaded drum core
- Protective sleeving over winding
- Inductance range from 10 µH to 33,000 µH
- Current range from 0.042 A to 2.9 A
- 7.9 mm OD x 9.0 mm through-hole package
- Ferrite core material

**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 plus self-temperature rise)

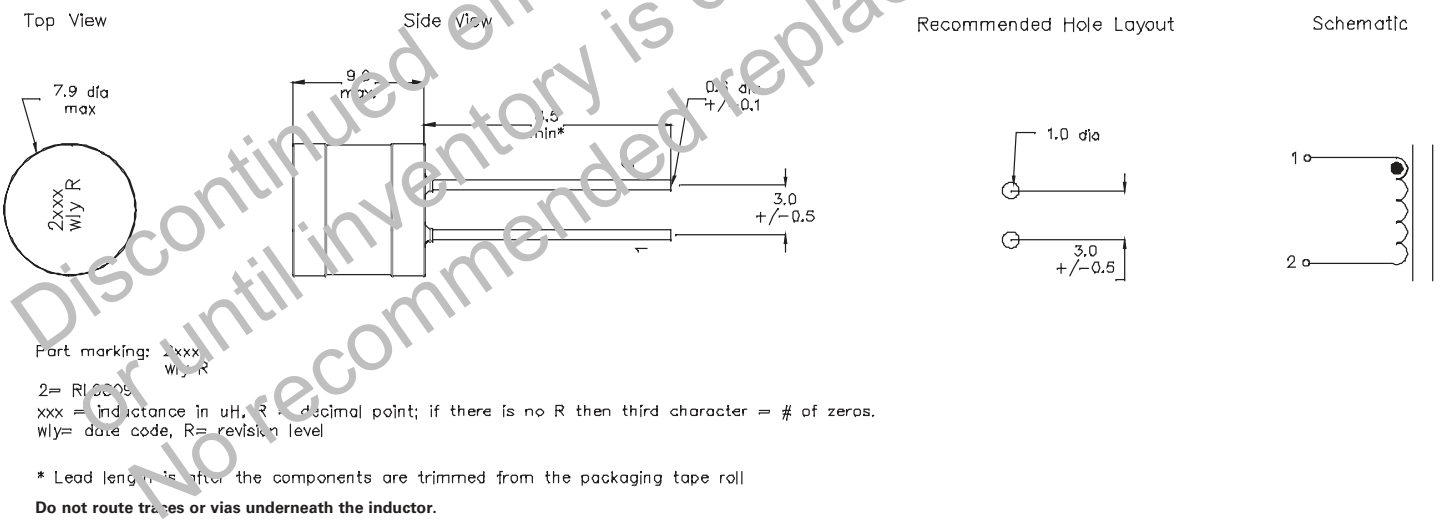
### Product specifications

| Part Number[4] | OCL[1] (µH) ±10% | $I_{rms}$[2] (A) | $I_{sat}$[3] (A) | DCR (Ω) @ +20 °C max. | SRF (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: 10 kHz, 0.1 $V_{rms}$, 0.0 Adc, +25 °C
2. $I_{rms}$: 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. $I_{sat}$: 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 µH, R = decimal point,
   - if no R is present then third character = number of zeros.
   - "-R" suffix = RoHS compliant



### Dimensions - mm



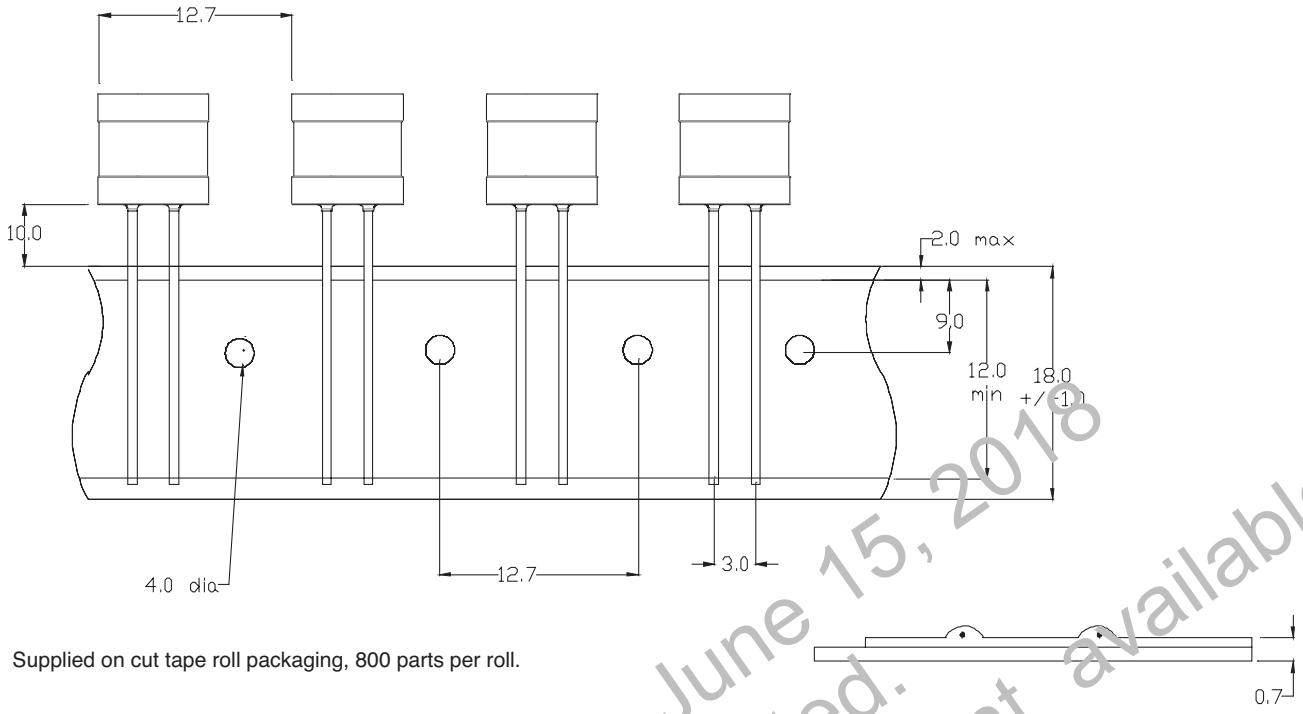

Part marking: 2xxx wly R

2= RL0809
xxx = inductance in uH, 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

**Do not route traces or vias underneath the inductor.**

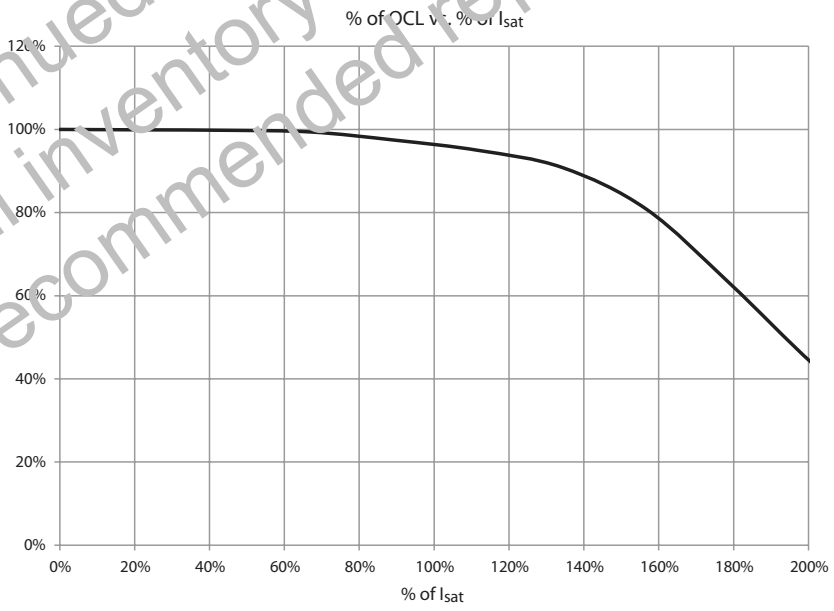
**Packaging information - mm**



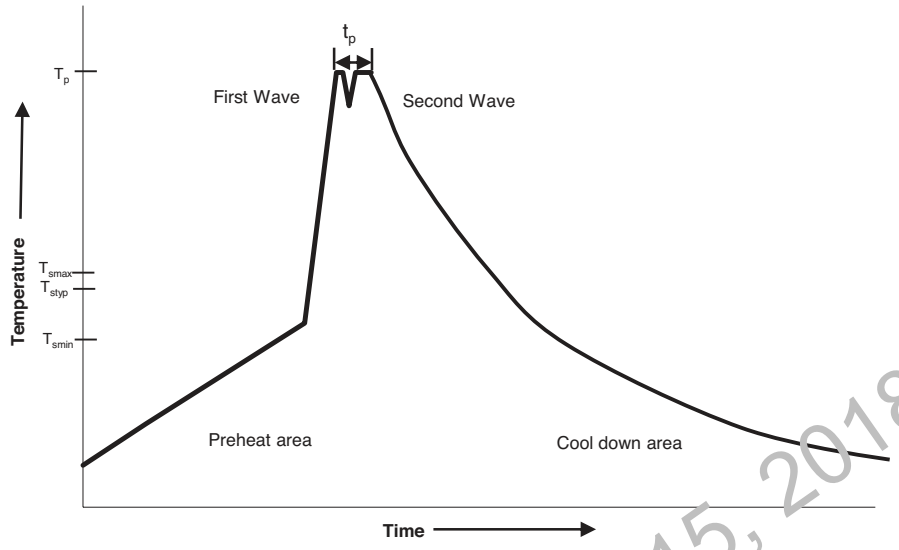

Supplied on cut tape roll packaging, 800 parts per roll.



**Inductance characteristics**



### Wave solder profile




**Reference EN 61760-1:2006**

| Profile Feature | Standard SnPb Solder | Lead (Pb) Free Solder |
|---|---|---|
| Preheat<br>Temperature min. ($T_{smin}$)<br>Temperature typ. ($T_{styp}$)<br>Temperature max. ($T_{smax}$)<br>Time ($T_{smin}$ to $T_{smax}$) ($t_s$) | <br>100°C<br>120°C<br>130°C<br>70 seconds | <br>100°C<br>120°C<br>130°C<br>70 seconds |
| Δ preheat to max Temeperature | 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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