## Effective October 2017 Supersedes June 2014

# RL1011 Unshielded radial leaded drum core inductors



## **Product features**

- Unshielded, leaded drum core
- · Protective sleeving over winding
- + Inductance range from 4.7  $\mu H$  to 2200  $\mu H$
- Current range from 0.263 A to 7.11 A
- 9.5 mm OD x 10.5 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)





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## **Product specifications**

Part Number⁴	OCL¹ (μΗ) ±10%	l <sub>rms</sub> <sup>2</sup> (A)	ا <sup>3</sup> (A)	DCR (Ω) @ +20 °C max.	SRF (MHz) typ.
RL1011-4R7-R	4.43	4.58	7.11	0.017	41
RL1011-6R8-R	7.04	4.03	5.64	0.023	25
RL1011-100-R	10.3	3.62	4.67	0.029	16
RL1011-150-R	15.5	2.92	3.80	0.037	13
RL1011-180-R	18.5	2.77	3.48	0.041	9
RL1011-220-R	21.8	2.64	3.21	0.046	9
RL1011-330-R	33.2	2.13	2.60	0.070	7
RL1011-470-R	47.1	1.91	2.18	0.085	6
RL1011-101-R	99.5	1.37	1.50	0.169	4
RL1011-121-R	123	1.19	1.35	0.216	3
RL1011-151-R	148	1.02	1.23	0.301	3
RL1011-181-R	181	0.959	1.11	0.330	3
RL1011-221-R	223	0.831	1.00	0.454	3
RL1011-331-R	332	0.671	0.820	0.698	2
RL1011-471-R	470	0.601	0.690	0.843	2
RL1011-102-R	1008	0.402	0.470	1.92	1
RL1011-122-R	1203	0.379	0.430	2.13	1
RL1011-152-R	1499	0.324	0.390	3.00	1
RL1011-222-R	2204	0.263	0.320	4.58	0.9

1. Open Circuit Inductance (OCL) Test Parameters: 10 kHz, 0.1  $V_{\mbox{\scriptsize rms}}$ , 0.0 Adc, +25 °C

2. I<sub>ms</sub>: 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.

## **Dimensions - mm**

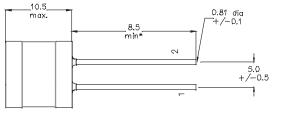


9.5 dia

max

3xxx wly R





3.  $I_{\mbox{\tiny sat}}$  Peak current for approximately 5% rolloff at +25  $^{\circ}\mbox{C}$ 

4. Part Number Definition: RL1011-yyy-R

- RL1011 = 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

Recommended Hole Layout

Schematic





Part marking: 3xxx

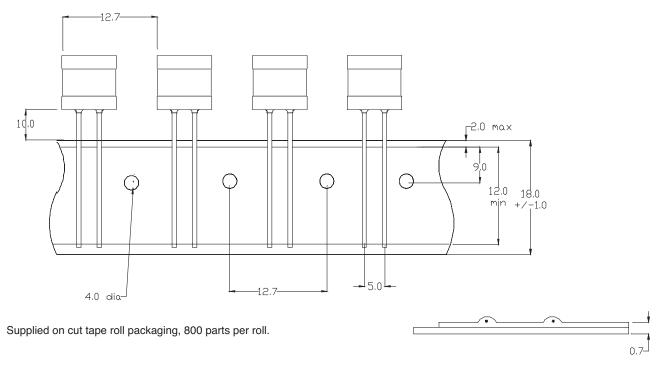
wly R 3= RL1011

xxx = inductance in uH, R = decimal point; if there is no R then third character = # of zeros. why= date code, R= revision level

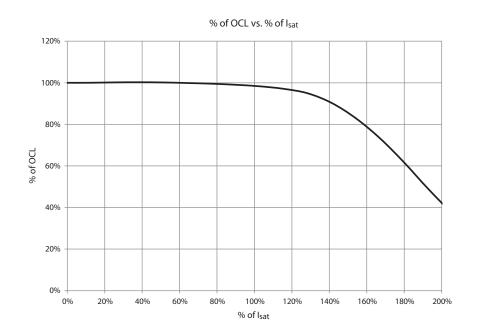
\* Lead length is after the components are trimmed from the packaging tape roll Do not route traces or vias underneath the inductor

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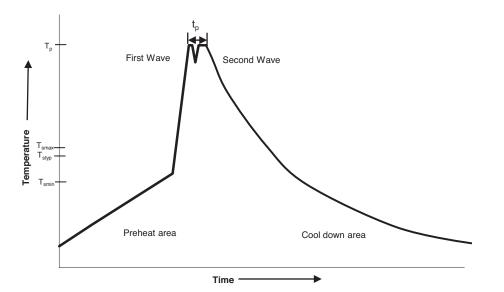
## Packaging information - mm



Inductance characteristics



## Wave solder profile



Profile Feature	Standard SnPb Solder	Lead (Pb) Free Solder	
Preheat			
Temperature min. (T <sub>smin</sub> )	100°C	100°C	
Temperature typ. (T <sub>stvp</sub> )	120°C	120°C	
Temperature max. (T <sub>smax</sub> )	130°C	130°C	
Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	70 seconds	70 seconds	
$\Delta$ preheat to max Temeperature	150°C max.	150°C max.	
Peak temperature (T <sub>p</sub> )	235 <sup>°</sup> C - 260 <sup>°</sup> C	250 <sup>°</sup> C - 260 <sup>°</sup> C	
Time at peak temperature (t <sub>n</sub> )	10 seconds max	10 seconds max	
Time at peak temperature (t <sub>p</sub> )	5 seconds max each wave	5 seconds max each wave	
	~ 2 K/s min	~ 2 K/s min	
Ramp-down rate	~3.5 K/s typ	~3.5 K/s typ	
•	~5 K/s max	~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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#### Eaton Electronics Division 1000 Eaton Boulevard Cleveland, OH 44122 United States www.eaton.com/electronics

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