

RL1011

Unshielded radial leaded drum core inductors



Product features

- Unshielded, leaded drum core
- Protective sleeving over winding
- Inductance range from 4.7 μ H to 2200 μ 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)



Product specifications

Part Number ⁴	OCL ¹ (μ H) $\pm 10\%$	I_{rms}^2 (A)	I_{sat}^3 (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_{rms}, 0.0 A_{dc}, +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: RL1011-yyy-R

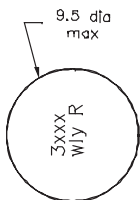
- RL1011 = Product code and size

- yyy= Inductance value in μ H, R = decimal point, if no R is present then third character = number of zeros.

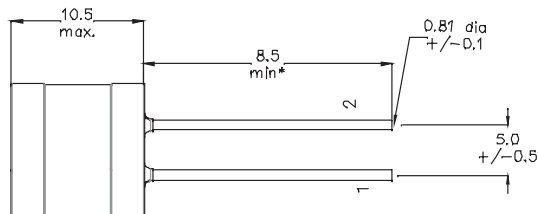
- "-R" suffix = RoHS compliant

Dimensions - mm

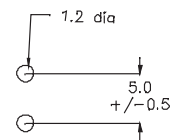
Top View



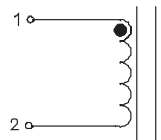
Side View



Recommended Hole Layout



Schematic



Part marking: 3xxx
wly R

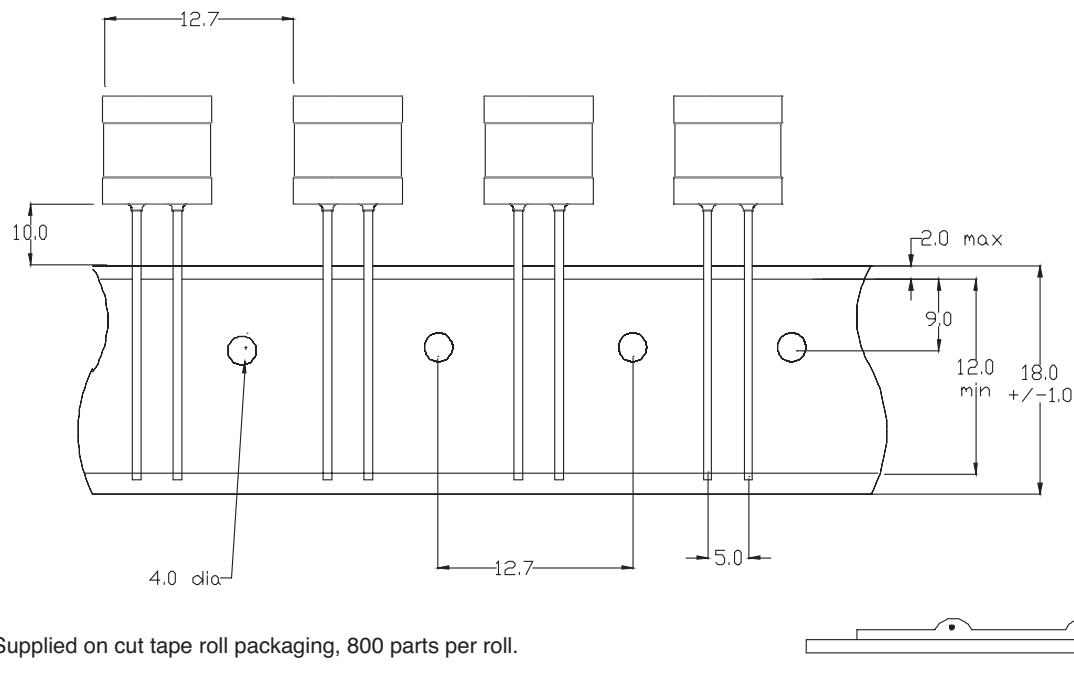
3= RL1011

xxx = Inductance in μ H, R = decimal point; if there is no R then third character = # of zeros.
wly= date code, R= revision level

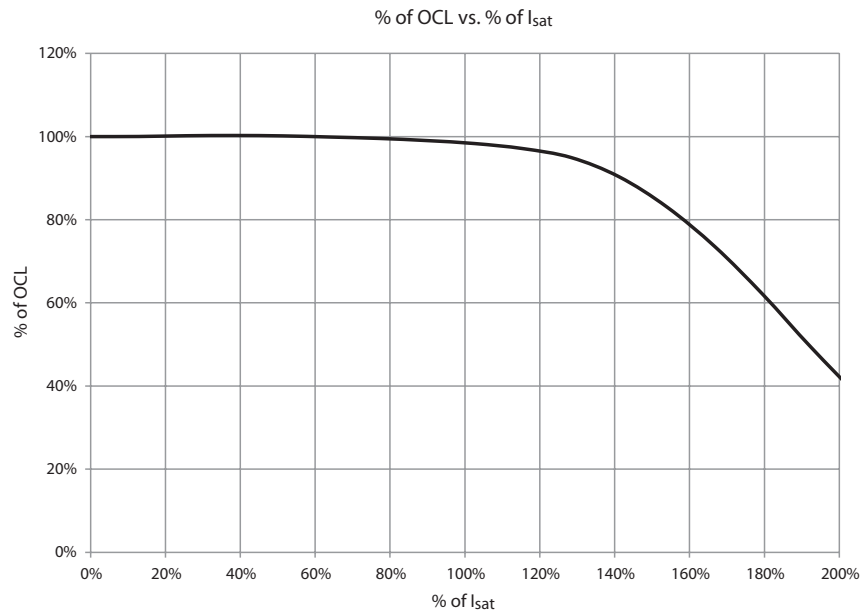
* Lead length is after the components are trimmed from the packaging tape roll

Do not route traces or vias underneath the inductor

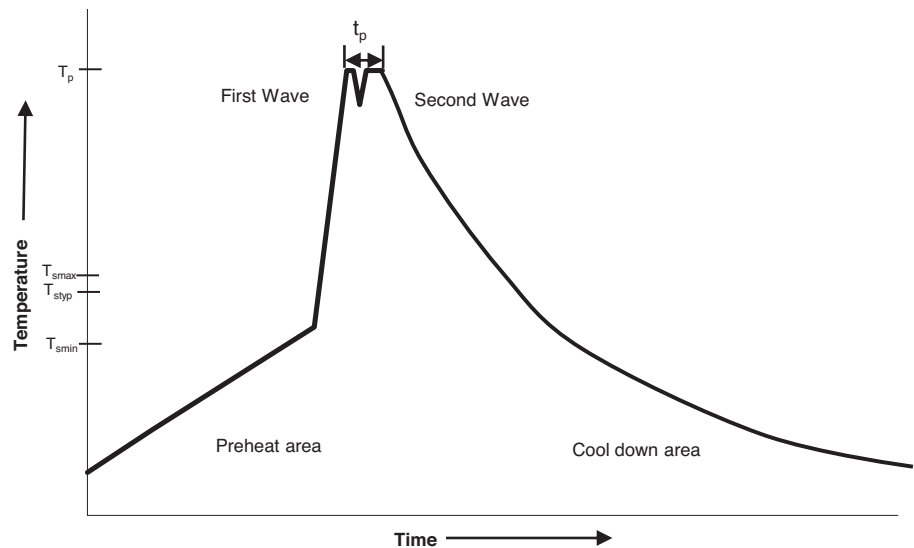
Packaging information - mm



Inductance characteristics



Wave solder profile



Reference EN 61760-1:2006

Profile Feature	Standard SnPb Solder	Lead (Pb) Free Solder
Preheat		
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
Δ 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 5 seconds max each wave	10 seconds max 5 seconds max each wave
Ramp-down rate	~ 2 K/s min ~3.5 K/s typ ~5 K/s max	~ 2 K/s min ~3.5 K/s typ ~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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