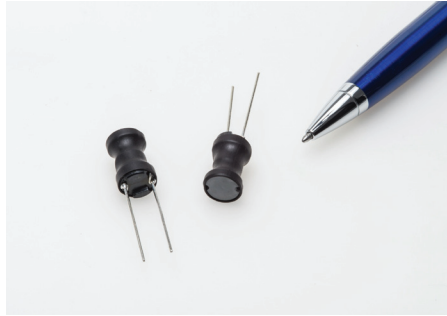


# RL1218

## Unshielded radial leaded drum core inductors



### Product features

- Unshielded, leaded drum core
- Protective sleeving over winding
- Inductance range from 4.7  $\mu$ H to 12,000  $\mu$ H
- Current range from 0.20 A to 15 A
- 12.2 mm OD x 18.0 mm through-hole package
- Ferrite core material

### Applications

- LED Drivers and lighting
- Utility meters
- Appliances and white goods
- 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

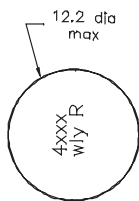
| Part Number <sup>4</sup> | OCL <sup>1</sup><br>( $\mu$ H) $\pm 10\%$ | $I_{rms}^2$<br>(A) | $I_{sat}^3$<br>(A) | DCR ( $\Omega$ )<br>@ +20 °C max. | SRF<br>(MHz) typ. |
|--------------------------|-------------------------------------------|--------------------|--------------------|-----------------------------------|-------------------|
| RL1218-4R7-R             | 4.7 $\pm 20\%$                            | 5.65               | 15.0               | 0.017                             | 34                |
| RL1218-8R2-R             | 8.2 $\pm 20\%$                            | 4.75               | 10.7               | 0.025                             | 25                |
| RL1218-100-R             | 10                                        | 4.61               | 10.2               | 0.026                             | 21                |
| RL1218-150-R             | 15                                        | 4.05               | 8.00               | 0.034                             | 11                |
| RL1218-220-R             | 22                                        | 3.64               | 6.60               | 0.042                             | 8                 |
| RL1218-270-R             | 27                                        | 3.44               | 5.97               | 0.047                             | 6                 |
| RL1218-330-R             | 33                                        | 3.27               | 5.45               | 0.052                             | 5                 |
| RL1218-101-R             | 100                                       | 2.31               | 3.16               | 0.102                             | 3                 |
| RL1218-151-R             | 150                                       | 1.89               | 2.56               | 0.159                             | 3                 |
| RL1218-181-R             | 180                                       | 1.64               | 2.34               | 0.211                             | 3                 |
| RL1218-221-R             | 220                                       | 1.53               | 2.10               | 0.241                             | 2                 |
| RL1218-331-R             | 330                                       | 1.25               | 1.73               | 0.366                             | 2                 |
| RL1218-561-R             | 560                                       | 0.968              | 1.33               | 0.606                             | 1                 |
| RL1218-102-R             | 1000                                      | 0.677              | 0.992              | 1.23                              | 1                 |
| RL1218-152-R             | 1500                                      | 0.597              | 0.809              | 1.59                              | 0.81              |
| RL1218-472-R             | 4700                                      | 0.322              | 0.457              | 5.46                              | 0.40              |
| RL1218-562-R             | 5600                                      | 0.305              | 0.418              | 6.11                              | 0.40              |
| RL1218-682-R             | 6800                                      | 0.263              | 0.379              | 8.20                              | 0.36              |
| RL1218-123-R             | 12,000                                    | 0.201              | 0.286              | 14.1                              | 0.28              |

1. Open Circuit Inductance (OCL) Test Parameters: 10 kHz, 0.1 V<sub>rms</sub>, 0.0 Adc, +25 °C
2. I<sub>rms</sub><sup>2</sup>: 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.

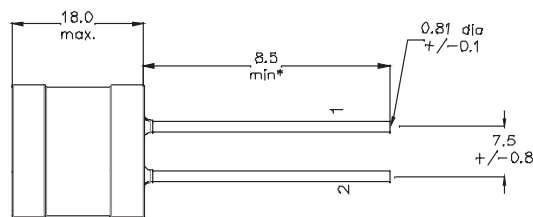
3. I<sub>sat</sub><sup>3</sup>: Peak current for approximately 5% rolloff at +25 °C
4. Part Number Definition: RL1218-yyy-R
  - RL1218 = Product code and size
  - yyy= Inductance value in  $\mu$ H, R = decimal point, if no R is present then third character = number of zeros.
  - "-R" suffix = RoHS compliant

## Dimensions - mm

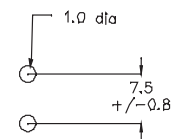
### Top view



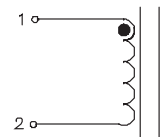
### Side view



### Recommended pad layout



### Schematic



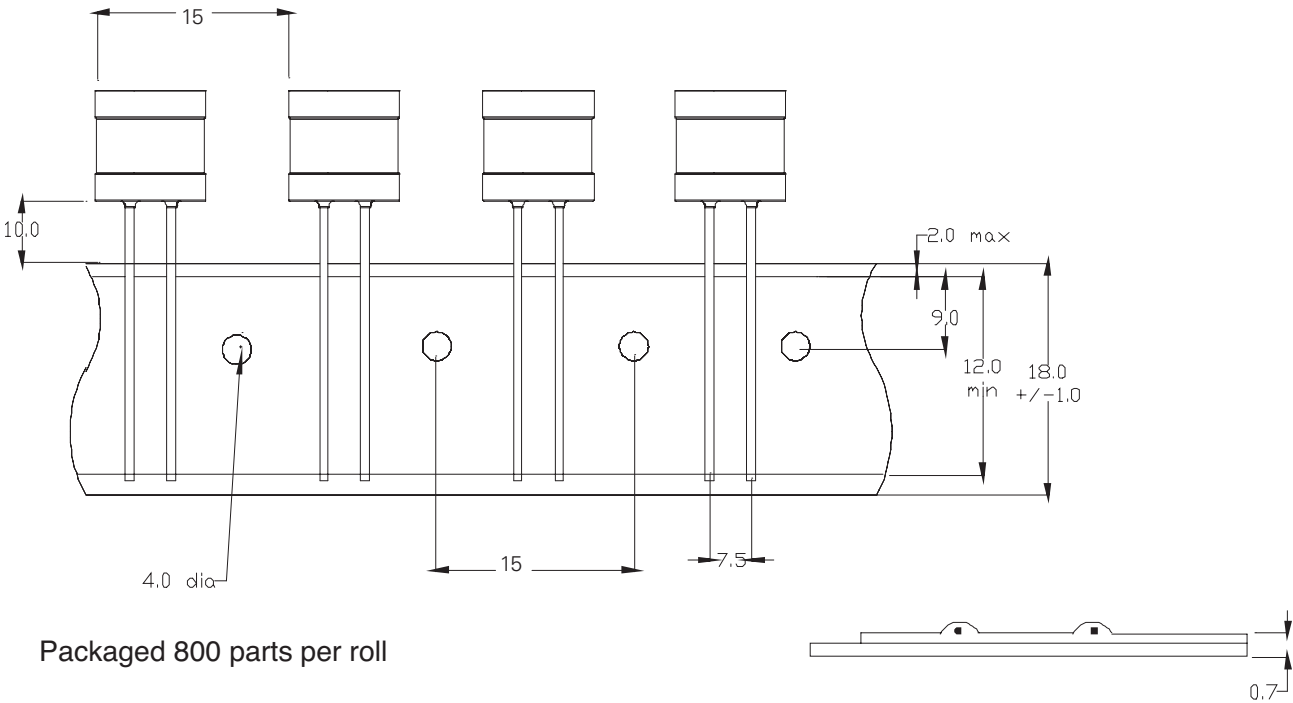
Part marking: 4xxx  
wly R

4 = RL1218

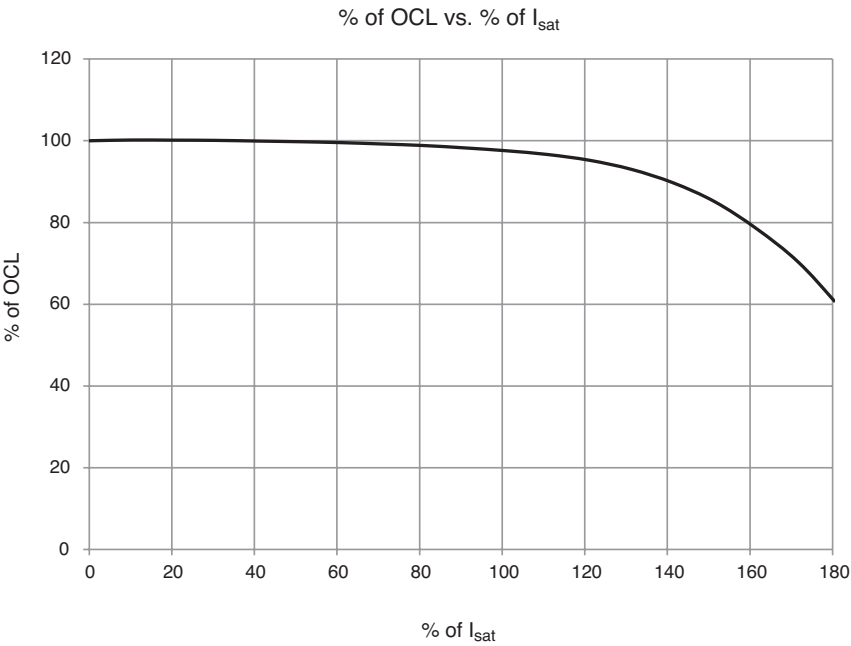
xxx = inductance in  $\mu$ H, R = decimal point; if there is no "R" then third character = number of zeros wly = date code, R = revision level

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

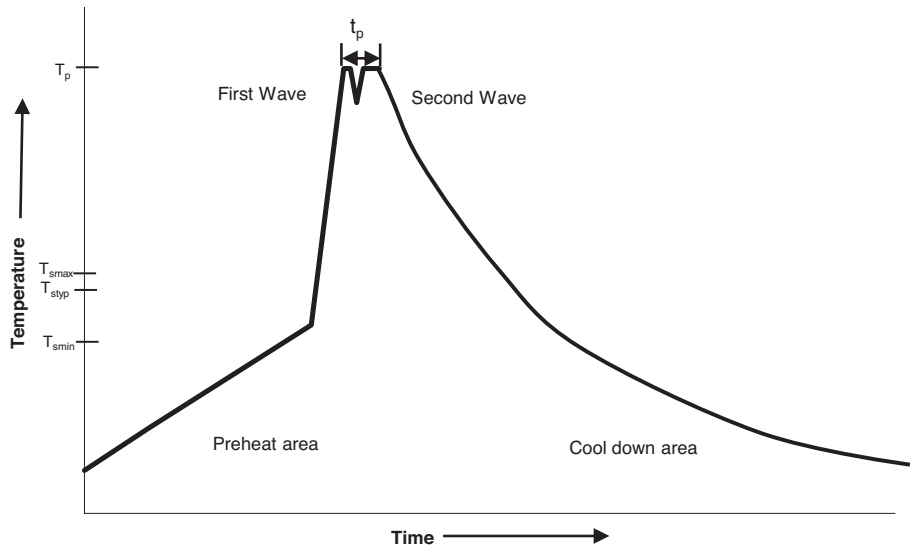
Packaging information - mm



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                                |
| $\Delta$ 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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