



# Shielded Power Inductors – LPS3015



- Very low DCR; excellent current handling
- Miniature 3.0 × 3.0 mm footprint; less than 1.5 mm tall

**Core material** Ferrite

**Core and winding loss** See [www.coilcraft.com/coreloss](http://www.coilcraft.com/coreloss)

**Terminations** RoHS compliant silver-palladium-platinum-glass frit. Other terminations available at additional cost.

**Weight** 40 – 45 mg

**Ambient temperature** –40°C to +85°C with I<sub>rms</sub> current, +85°C to +125°C with derated current

**Storage temperature** Component: –40°C to +125°C.

Packaging: –40°C to +80°C

**Resistance to soldering heat** Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

**Packaging** 1000/7" reel; 3500/13" reel; Plastic tape: 12 mm wide, 0.26 mm thick, 8 mm pocket spacing, 1.65 mm pocket depth

**Recommended pick and place nozzle** OD: 3 mm; ID: ≤ 1.5 mm

**PCB washing** Only pure water or alcohol recommended

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>±20% (μH) | DCR<br>max <sup>3</sup><br>(Ohms) | SRF<br>typ <sup>4</sup><br>(MHz) | Isat (A) <sup>5</sup> |             |             | Irms (A) <sup>6</sup> |              |
|--------------------------|--------------------------------------|-----------------------------------|----------------------------------|-----------------------|-------------|-------------|-----------------------|--------------|
|                          |                                      |                                   |                                  | 10%<br>drop           | 20%<br>drop | 30%<br>drop | 20°C<br>rise          | 40°C<br>rise |
| LPS3015-102ML_           | 1.0                                  | 0.075                             | 190                              | 1.8                   | 2.0         | 2.1         | 1.4                   | 2.0          |
| LPS3015-152ML_           | 1.5                                  | 0.100                             | 140                              | 1.8                   | 2.1         | 2.2         | 1.3                   | 1.7          |
| LPS3015-182ML_           | 1.8                                  | 0.100                             | 135                              | 1.5                   | 1.7         | 2.1         | 1.1                   | 1.4          |
| LPS3015-222ML_           | 2.2                                  | 0.110                             | 110                              | 2.0                   | 2.0         | 2.1         | 1.1                   | 1.4          |
| LPS3015-332ML_           | 3.3                                  | 0.130                             | 90                               | 1.4                   | 1.5         | 1.5         | 1.0                   | 1.4          |
| LPS3015-472ML_           | 4.7                                  | 0.200                             | 79                               | 1.1                   | 1.2         | 1.2         | 0.90                  | 1.2          |
| LPS3015-682ML_           | 6.8                                  | 0.300                             | 58                               | 0.83                  | 0.86        | 0.89        | 0.68                  | 0.90         |
| LPS3015-103ML_           | 10                                   | 0.440                             | 48                               | 0.60                  | 0.69        | 0.73        | 0.55                  | 0.75         |
| LPS3015-153ML_           | 15                                   | 0.700                             | 35                               | 0.58                  | 0.61        | 0.62        | 0.44                  | 0.59         |
| LPS3015-183ML_           | 18                                   | 0.750                             | 33                               | 0.56                  | 0.58        | 0.59        | 0.43                  | 0.58         |
| LPS3015-223ML_           | 22                                   | 0.825                             | 30                               | 0.48                  | 0.49        | 0.50        | 0.42                  | 0.57         |
| LPS3015-333ML_           | 33                                   | 1.30                              | 23                               | 0.39                  | 0.41        | 0.42        | 0.35                  | 0.48         |
| LPS3015-473ML_           | 47                                   | 1.55                              | 17                               | 0.36                  | 0.38        | 0.39        | 0.30                  | 0.40         |
| LPS3015-683ML_           | 68                                   | 2.35                              | 14                               | 0.29                  | 0.30        | 0.31        | 0.25                  | 0.33         |
| LPS3015-104ML_           | 100                                  | 3.40                              | 11                               | 0.24                  | 0.25        | 0.26        | 0.19                  | 0.26         |
| LPS3015-124ML_           | 120                                  | 4.65                              | 9.0                              | 0.21                  | 0.22        | 0.22        | 0.17                  | 0.23         |
| LPS3015-154ML_           | 150                                  | 6.25                              | 8.0                              | 0.19                  | 0.20        | 0.20        | 0.15                  | 0.20         |
| LPS3015-184ML_           | 180                                  | 8.60                              | 7.5                              | 0.16                  | 0.17        | 0.17        | 0.13                  | 0.175        |
| LPS3015-224ML_           | 220                                  | 9.50                              | 6.0                              | 0.15                  | 0.16        | 0.16        | 0.11                  | 0.155        |
| LPS3015-334ML_           | 330                                  | 23.0                              | 5.0                              | 0.10                  | 0.11        | 0.11        | 0.070                 | 0.095        |

1. Please specify **termination** and **packaging** codes:

LPS3015-333ML C

**Termination:** L = RoHS compliant silver-palladium-platinum-glass frit.

Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).

**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape (1000 parts per full reel).

B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter C instead.

D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (3500 per full reel).

2. Inductance tested at 100 kHz, 0.1 V<sub>rms</sub> using an Agilent/HP 4192A. Inductance at 1 MHz is the same for parts with SRF ≥ 10 MHz.
3. DCR measured on a micro-ohmmeter.
4. SRF measured using Agilent/HP 8753ES or equivalent.
5. DC current that causes the specified inductance drop from its value without current.
6. Current that causes the specified temperature rise from 25°C ambient.
7. Electrical specifications at 25°C. Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

Coilcraft **Designer's Kit C392** contains samples of 0.80 μH to 33 μH parts (3 each) from LPS3008, LPS3010 and LPS3015. **Kit C401** contains samples of 0.56 μH to 33 μH parts (3 each) from LPS4012 and LPS4018. **Kit C402** contains samples of 220 μH to 3300 μH parts (3 each) from all five series. For details of kit contents and to order, contact Coilcraft or visit <http://order.coilcraft.com>.

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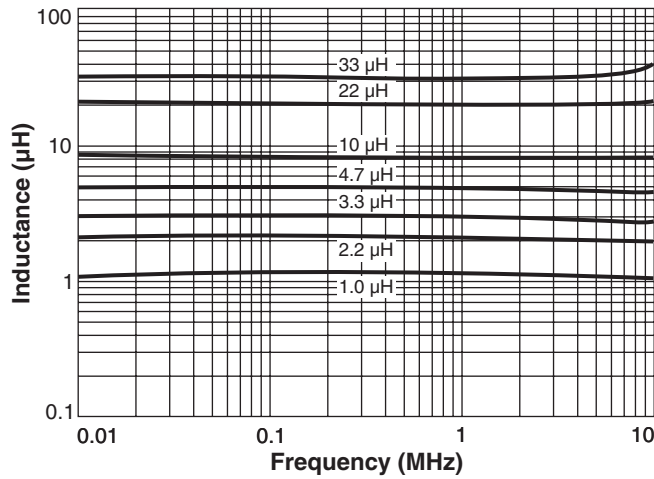
E-mail [info@coilcraft.com](mailto:info@coilcraft.com) Web <http://www.coilcraft.com>



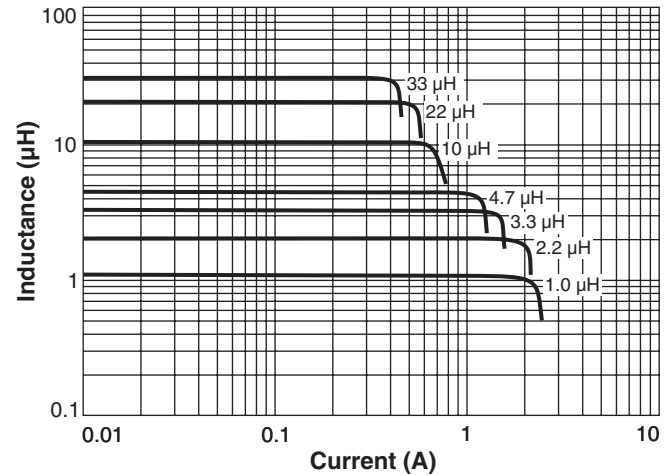
# Shielded SMT Power Inductors – LPS3015 Series

**SPICE models**  
ON OUR WEB SITE OR CD

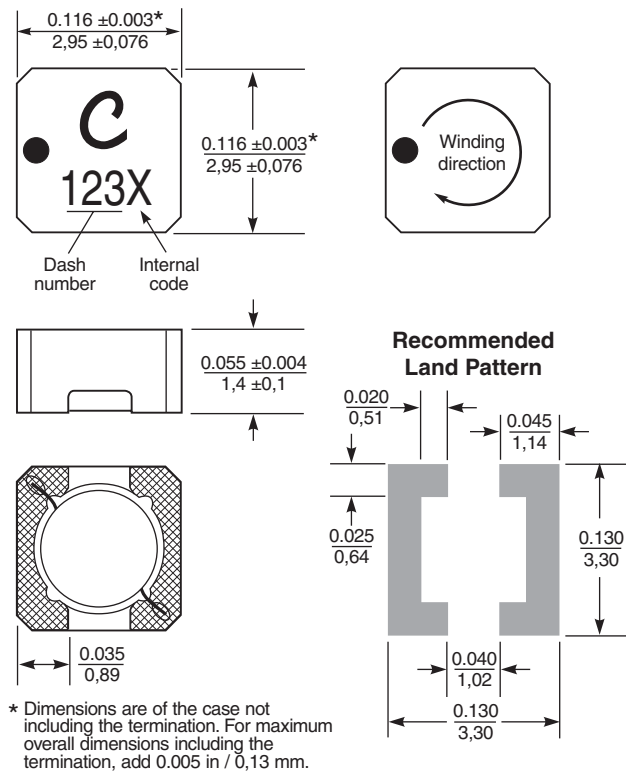
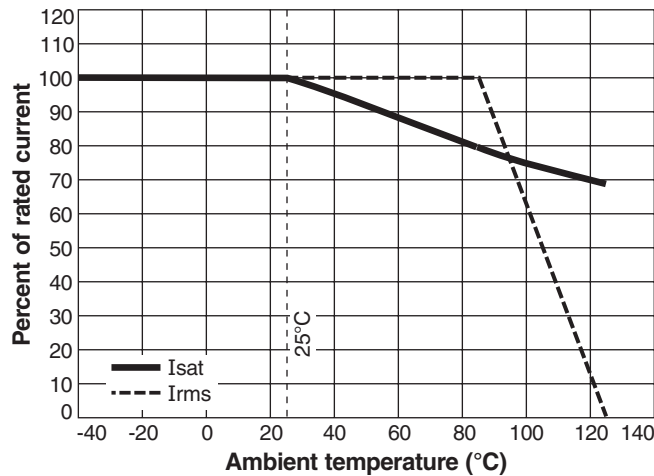
## Typical L vs Frequency



## Typical L vs Current



## Current Derating



\* Dimensions are of the case not including the termination. For maximum overall dimensions including the termination, add 0.005 in / 0,13 mm.

Dimensions are in  $\frac{\text{inches}}{\text{mm}}$

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