



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

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 Irms 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 ¹ | Inductance ² ±20% (µH) | DCR max ³ (Ohms) | SRF typ ⁴ (MHz) | Isat (A) ⁵ | | | Irms (A) ⁶ | |
|--------------------------|--------------------------------------|-----------------------------------|----------------------------------|-----------------------|-------------|-------------|-----------------------|--------------|
| | | | | 10% drop | 20% drop | 30% drop | 20°C rise | 40°C 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:

LPS3015-333MLC

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).

- Inductance tested at 100 kHz, 0.1 Vrms using an Agilent/HP 4192A. Inductance at 1 MHz is the same for parts with SRF ≥ 10 MHz.
- DCR measured on a micro-ohmmeter.
- SRF measured using Agilent/HP 8753ES or equivalent.
- DC current that causes the specified inductance drop from its value without current.
- Current that causes the specified temperature rise from 25°C ambient.
- 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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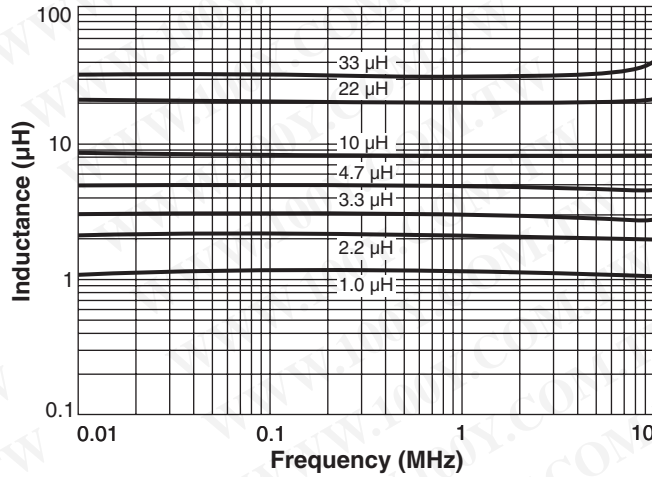
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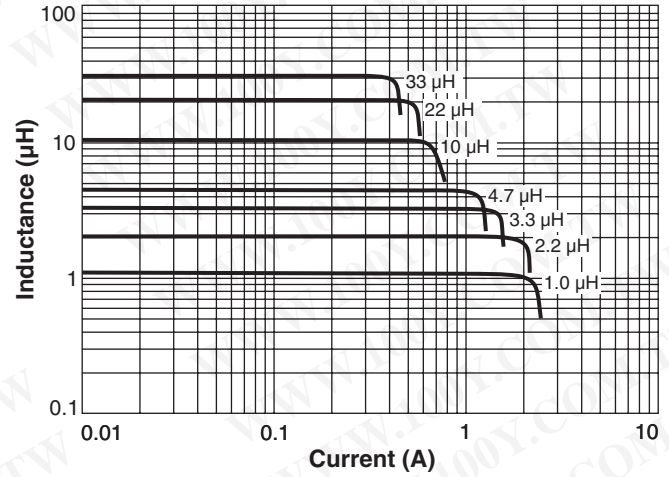
Shielded SMT Power Inductors – LPS3015 Series

SPICE models
ON OUR WEB SITE

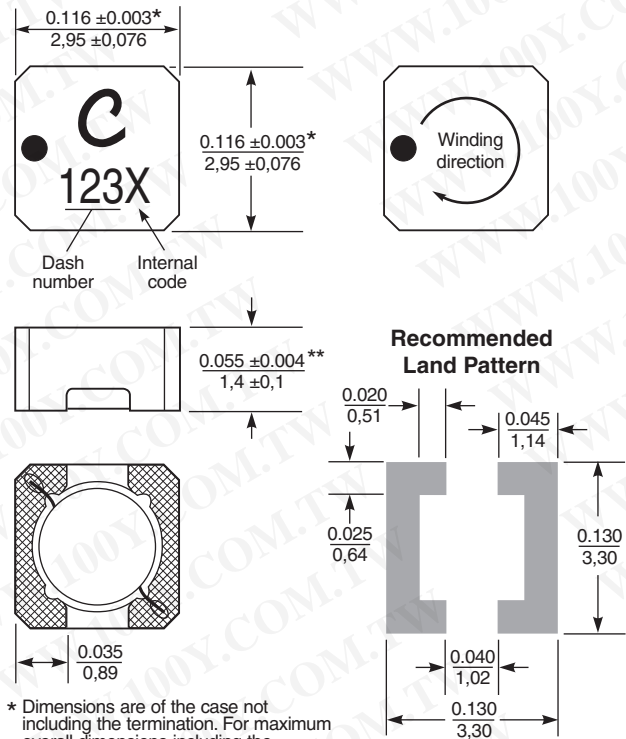
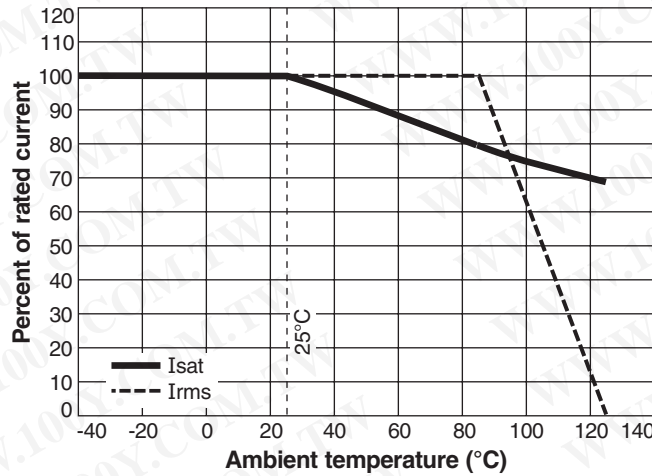
Typical L vs Frequency



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.

**For optional tin-lead and tin-silver-copper terminations, dimensions are for the mounted part. Dimensions before mounting can be an additional 0.005 inch (0,13 mm).

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



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