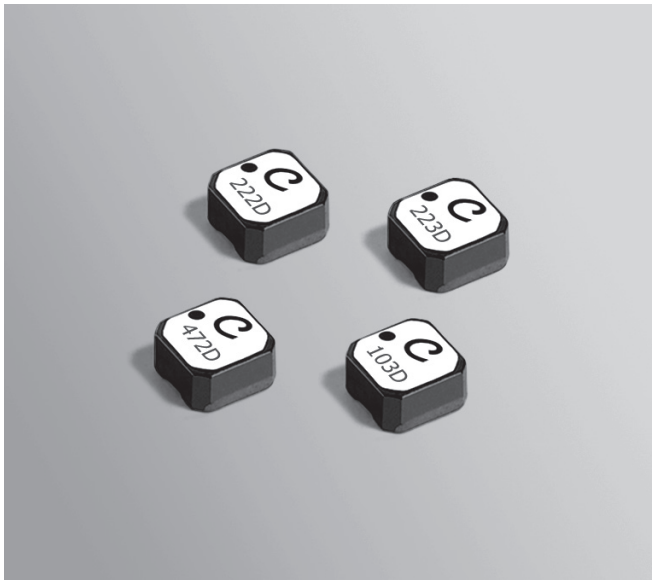
Shielded Power Inductors – LPS3015



- 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] 10% drop	20% drop	30% drop	Irms (A)[6] 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).

2. 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.
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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SPICE models
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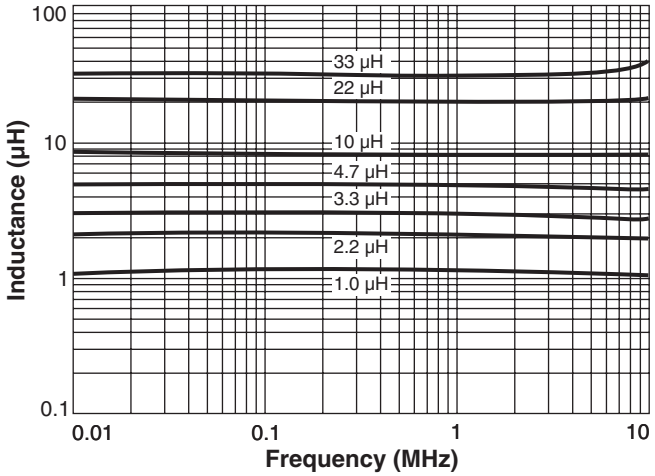
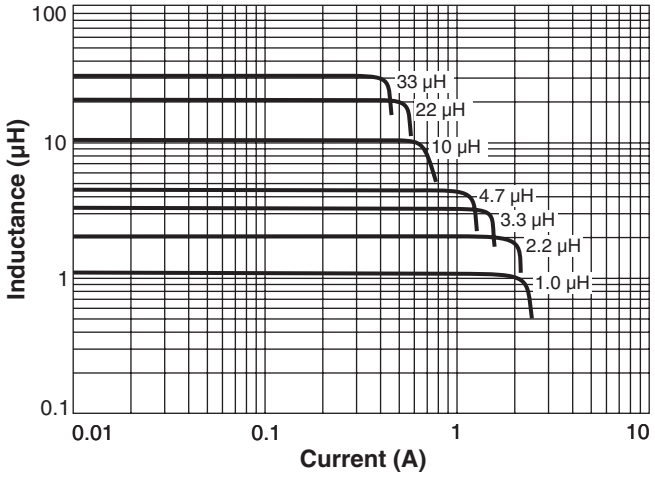
Shielded SMT Power Inductors – LPS3015 Series

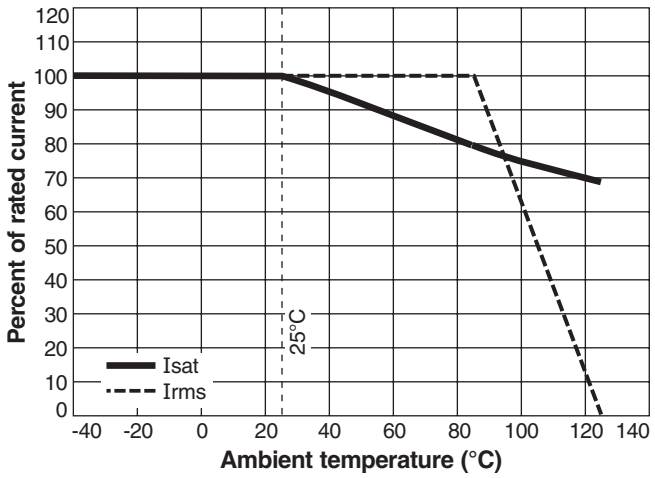
Typical L vs Frequency

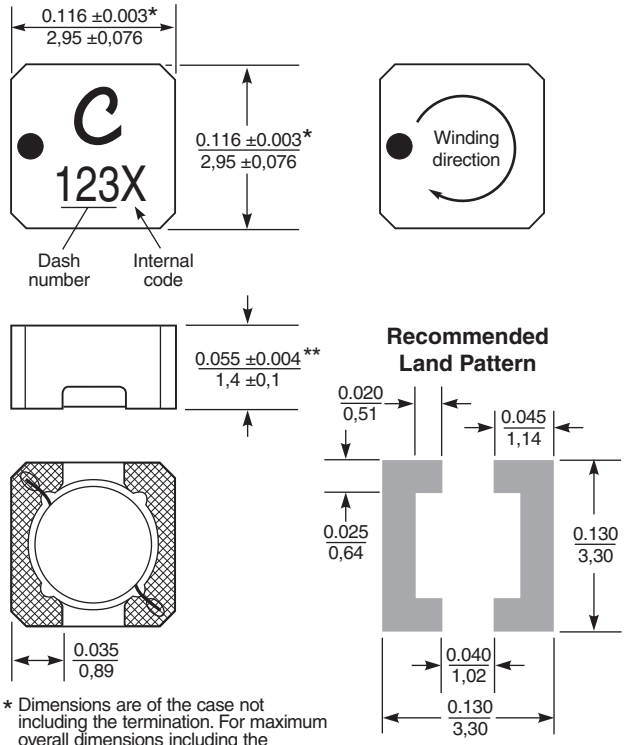


Typical L vs Current



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 inches / mm

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