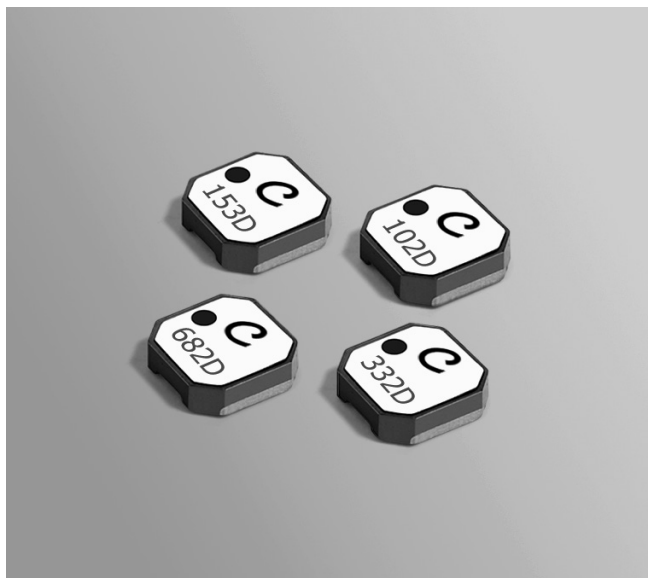




Shielded Power Inductors – LPS4012



- Very low DCR; excellent current handling
- 4.0 × 4.0 mm footprint; less than 1.2 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 54 – 64 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.

Tape and reel 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, 0.25 mm thick, 8 mm pocket spacing, 1.32 mm pocket depth

Recommended pick and place nozzle OD: 4 mm; ID: ≤ 2 mm

PCB washing Only pure water or alcohol recommended

Part number ¹	Inductance ² (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
LPS4012-331ML	0.33±20%	0.025	375	5.2	5.4	5.5	2.2	3.0
LPS4012-681ML	0.68±20%	0.055	220	3.5	3.6	3.7	1.8	2.4
LPS4012-102NL	1.0±30%	0.060	180	2.8	2.9	3.0	1.7	2.4
LPS4012-152ML	1.5±20%	0.070	140	2.6	2.7	2.8	1.6	2.2
LPS4012-222ML	2.2±20%	0.100	115	2.3	2.4	2.5	1.2	1.75
LPS4012-332ML	3.3±20%	0.100	100	1.3	1.4	1.4	1.45	2.00
LPS4012-472ML	4.7±20%	0.175	70	1.6	1.7	1.8	1.10	1.45
LPS4012-562ML	5.6±20%	0.260	60	1.5	1.6	1.6	0.85	1.10
LPS4012-682ML	6.8±20%	0.340	55	1.3	1.3	1.4	0.80	0.98
LPS4012-103ML	10±20%	0.350	40	0.98	1.0	1.1	0.55	0.75
LPS4012-153ML	15±20%	0.550	30	0.79	0.82	0.84	0.53	0.73
LPS4012-223ML	22±20%	0.600	25	0.74	0.78	0.79	0.52	0.70
LPS4012-333ML	33±20%	0.825	22	0.45	0.47	0.48	0.46	0.61
LPS4012-473ML	47±20%	1.40	19	0.35	0.37	0.38	0.40	0.52
LPS4012-683ML	68±20%	1.70	15	0.30	0.32	0.33	0.35	0.46
LPS4012-104ML	100±20%	2.40	12	0.24	0.26	0.27	0.30	0.40
LPS4012-124ML	120±20%	3.30	11.5	0.23	0.24	0.25	0.27	0.36
LPS4012-154ML	150±20%	3.50	10.0	0.21	0.22	0.23	0.25	0.32
LPS4012-184ML	180±20%	5.00	8.0	0.18	0.19	0.20	0.23	0.29
LPS4012-224ML	220±20%	5.20	7.0	0.15	0.16	0.17	0.21	0.27
LPS4012-334ML	330±20%	7.20	7.0	0.14	0.14	0.15	0.17	0.225
LPS4012-474ML	470±20%	10.0	4.0	0.10	0.11	0.12	0.13	0.175
LPS4012-564ML	560±20%	12.5	3.5	0.10	0.105	0.115	0.11	0.140
LPS4012-684ML	680±20%	13.5	3.0	0.10	0.105	0.110	0.11	0.135
LPS4012-824ML	820±20%	20.0	3.0	0.090	0.095	0.095	0.105	0.132
LPS4012-105ML	1000±20%	21.5	3.0	0.080	0.090	0.095	0.100	0.130
LPS4012-155ML	1500±20%	30.0	2.5	0.080	0.090	0.090	0.087	0.115
LPS4012-185ML	1800±20%	35.0	2.0	0.079	0.085	0.087	0.075	0.100
LPS4012-225ML	2200±20%	42.0	1.0	0.079	0.083	0.085	0.070	0.090
LPS4012-335ML	3300±20%	65.0	0.95	0.074	0.078	0.080	0.050	0.065

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

LPS4012-682MLC

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 parts 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.



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Singapore + 65-6484 8412 sales@coilcraft.com.sg

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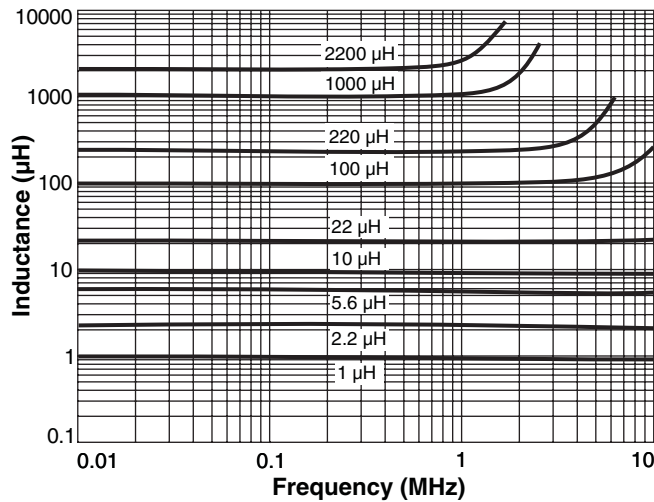
This product may not be used in medical of high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check out web site for latest information.



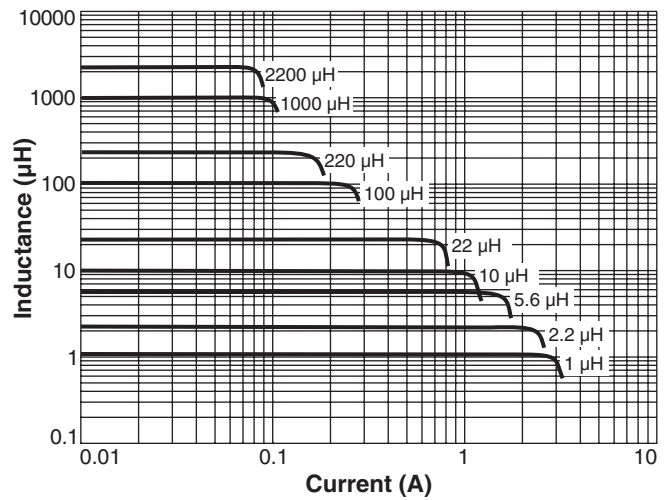
Shielded SMT Power Inductors – LPS4012 Series

SPICE models
ON OUR WEB SITE

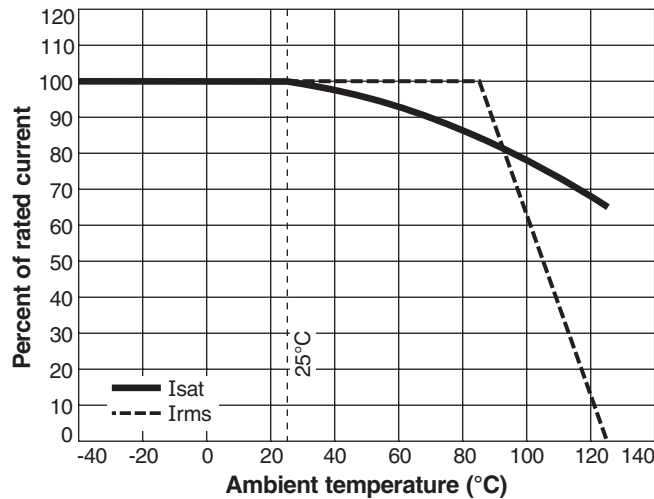
Typical L vs Frequency



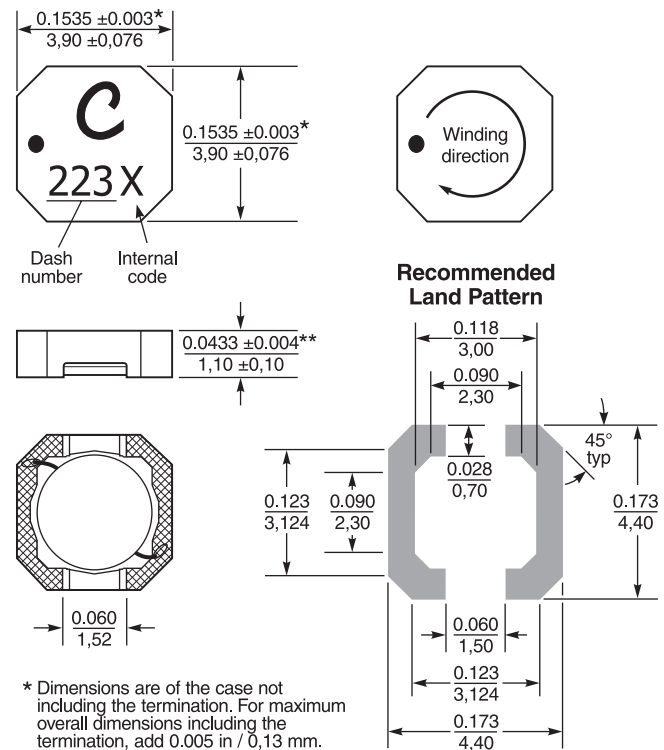
Typical L vs Current



Current Derating



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



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