Shielded Power Inductors – LP4012



- 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
Environmental RoHS compliant, halogen free
Terminations RoHS compliant matte tin over nickel over silver. Other terminations available at additional cost.
Weight 54 – 64 mg
Ambient temperature –40°C to +85°C with (40°C rise) Irms current.
Maximum part temperature +125°C (ambient + temp rise).
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** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash.

Part number	Inductance (µH)	DCR max (Ohms)	SRF typ (MHz)	Isat (A) 10% drop	Isat (A) 20% drop	Isat (A) 30% drop	Irms (A) 20°C rise	Irms (A) 40°C rise
LP4012-331MR_	0.33 ±20%	0.025	375	5.2	5.4	5.5	2.2	3.0
LP4012-681MR_	0.68 ±20%	0.055	220	3.5	3.6	3.7	1.8	2.4
LP4012-102NR_	1.0 ±30%	0.060	180	2.8	2.9	3.0	1.7	2.4
LP4012-152MR_	1.5 ±20%	0.070	140	2.6	2.7	2.8	1.6	2.2
LP4012-222MR_	2.2 ±20%	0.100	115	2.3	2.4	2.5	1.2	1.75
LP4012-332MR_	3.3 ±20%	0.100	100	1.3	1.4	1.4	1.45	2.00
LP4012-472MR_	4.7 ±20%	0.175	70	1.6	1.7	1.8	1.10	1.45
LP4012-562MR_	5.6 ±20%	0.260	60	1.5	1.6	1.6	0.85	1.10
LP4012-682MR_	6.8 ±20%	0.340	55	1.3	1.3	1.4	0.80	0.98
LP4012-103MR_	10 ±20%	0.350	40	0.98	1.0	1.1	0.55	0.75
LP4012-153MR_	15 ±20%	0.550	30	0.79	0.82	0.84	0.53	0.73
LP4012-223MR_	22 ±20%	0.600	25	0.74	0.78	0.79	0.52	0.70
LP4012-333MR_	33 ±20%	0.825	22	0.45	0.47	0.48	0.46	0.61
LP4012-473MR_	47 ±20%	1.40	19	0.35	0.37	0.38	0.40	0.52
LP4012-683MR_	68 ±20%	1.70	15	0.30	0.32	0.33	0.35	0.46
LP4012-104MR_	100 ±20%	2.40	12	0.24	0.26	0.27	0.30	0.40
LP4012-124MR_	120 ±20%	3.30	11.5	0.23	0.24	0.25	0.27	0.36
LP4012-154MR_	150 ±20%	3.50	10.0	0.21	0.22	0.23	0.25	0.32
LP4012-184MR_	180 ±20%	5.00	8.0	0.18	0.19	0.20	0.23	0.29
LP4012-224MR_	220 ±20%	5.20	7.0	0.15	0.16	0.17	0.21	0.27
LP4012-334MR_	330 ±20%	7.20	7.0	0.14	0.14	0.15	0.17	0.225
LP4012-474MR_	470 ±20%	10.0	4.0	0.10	0.11	0.12	0.13	0.175
LP4012-564MR_	560 ±20%	12.5	3.5	0.10	0.105	0.115	0.11	0.140
LP4012-684MR_	680 ±20%	13.5	3.0	0.10	0.105	0.110	0.11	0.135
LP4012-824MR_	820 ±20%	20.0	3.0	0.090	0.095	0.095	0.105	0.132
LP4012-105MR_	1000 ±20%	21.5	3.0	0.080	0.090	0.095	0.100	0.130
LP4012-155MR_	1500 ±20%	30.0	2.5	0.080	0.090	0.090	0.087	0.115
LP4012-185MR_	1800 ±20%	35.0	2.0	0.079	0.085	0.087	0.075	0.100
LP4012-225MR_	2200 ±20%	42.0	1.0	0.079	0.083	0.085	0.070	0.090
LP4012-335MR_	3300 ±20%	65.0	0.95	0.074	0.078	0.080	0.050	0.065

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

LP4012-682MRC

Termination: **R** = RoHS compliant matte tin over nickel over silver. Special order, added cost: **Q** = RoHS tin-silver-copper (95.5/4/0.5) or **P** = 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).

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 at 25°C that causes the specified inductance drop from its value without current.
6. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
7. Electrical specifications at 25°C.

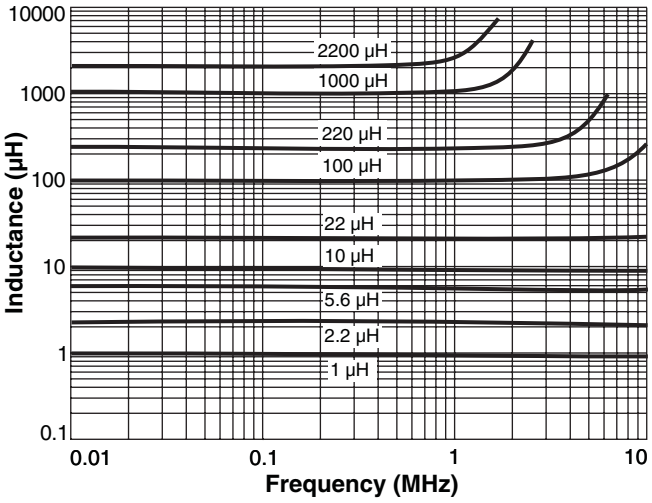
Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

PulseGM
www.pulsegm.com
China +86-0755-21055287
Sales@pulsegm.com

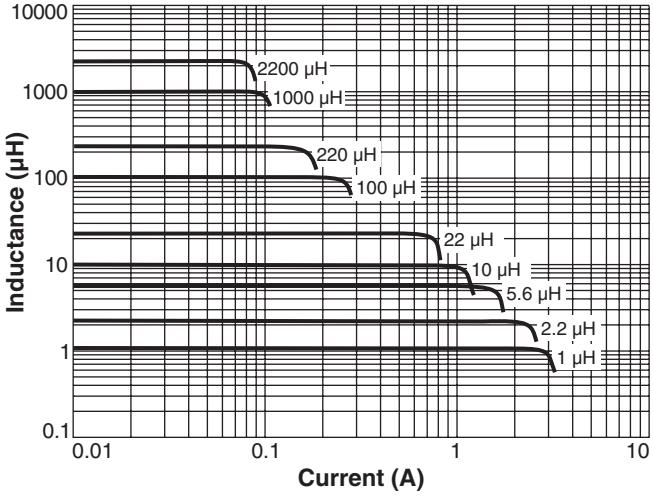
©PulseGM Inc. 2019
This product may not be used in medical or high risk applications without prior PulseGM approval. Specification subject to change without notice. Please check web site for latest information.

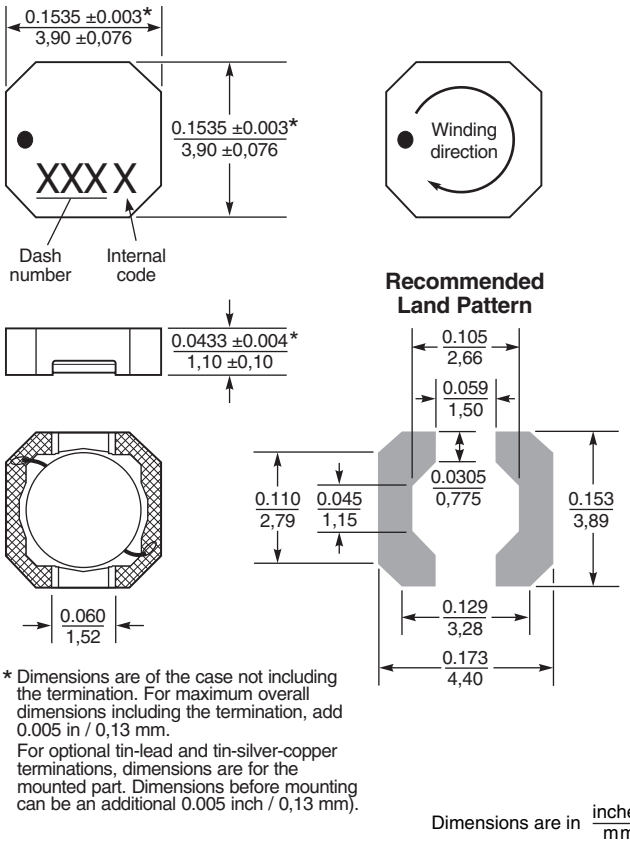
Shielded SMT Power Inductors – LP4012 Series

Typical L vs Frequency



Typical L vs Current



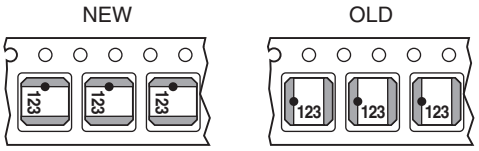


* Dimensions are of the case not including the termination. For maximum overall dimensions including the termination, add 0.005 in / 0,13 mm.
For optional tin-lead and tin-silver-copper terminations, dimensions are for the mounted part. Dimensions before mounting can be an additional 0.005 inch / 0,13 mm).

Dimensions are in inches / mm

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

NOTE NEW PART ORIENTATION Parts are rotated 90° in the packaging tape compared to previous versions of this product.



PulseGM Designer's Kit C392 contains samples of 0.80 µH to 33 µH parts (3 each) from LP3008, LP3010 and LPS3015. **Kit C401** con-tains samples of 0.56 µH to 33 µH parts (3 each) from LP4012 and LP4018. **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 PulseGM.

©PulseGM Inc. 2019
This product may not be used in medical or high risk applications without prior PulseGM approval.
Specification subject to change without notice.
Please check web site for latestinformation.