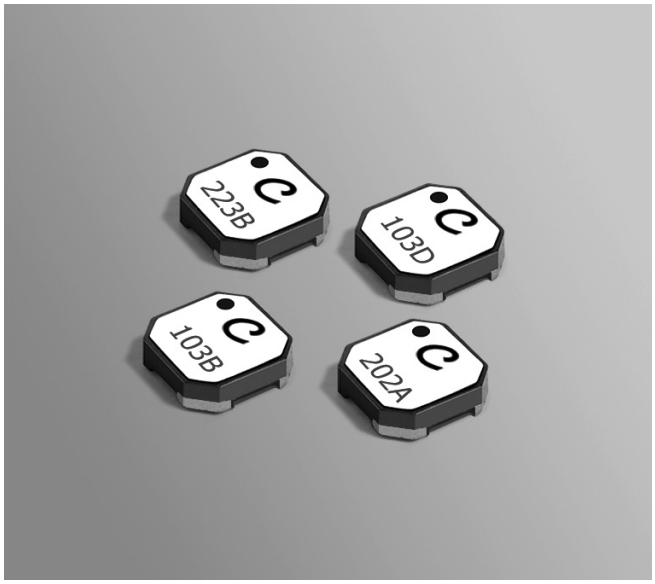
Coupled Inductors – LPR4012

For Step-Up, Resonant & Flyback Applications



- Miniature, shielded coupled inductors are only 1,1 mm high and 4 mm square
- Excellent coupling coefficient (k = 0.95) makes them ideal for use as flyback transformers in DC-DC converters or as coupled inductors in buck regulators to provide multiple outputs
- 100 Vrms, one minute isolation (hipot) between windings
- Wide selection of turns ratios makes them suitable for a variety of voltage step-up and step-down applications
- Can also be used in autotransformer applications.
- High Isat and low DCR ratings of these low profile parts provide high efficiency and excellent current handling in a rugged, low cost design
- Custom inductance values and turn ratios are available upon request.

Part number[1]	Primary (L1) inductance[2] ± 20% (µH)	Turns ratio	DCR max (Ohms) L1	DCR max (Ohms) L2	SRF typ[3] (MHz)	Isat (A)[4] 10% drop	Isat (A)[4] 20% drop	Isat (A)[4] 30% drop	Irms (A)[5] 20°C rise	Irms (A)[5] 40°C rise
LPR4012-202AMR_	2.0	1:1.5	0.240	0.325	61.5	1.70	1.73	1.74	1.10	1.45
LPR4012-202BMR_	2.0	1:2	0.240	0.480	49.4	1.70	1.73	1.74	1.10	1.45
LPR4012-202DMR_	2.0	1:3	0.240	1.15	31.0	1.70	1.73	1.74	1.10	1.45
LPR4012-202LMR_	2.0	1:10	0.240	11.62	7.43	1.70	1.73	1.74	1.10	1.45
LPR4012-103BMR_	10.0	1:2	0.600	1.55	19.5	0.62	0.64	0.65	0.52	0.70
LPR4012-103DMR_	10.0	1:3	0.600	3.71	12.8	0.62	0.64	0.65	0.52	0.70
LPR4012-223BMR_	22.0	1:2	1.16	3.65	11.2	0.43	0.45	0.46	0.43	0.57
LPR4012-223DMR_	22.0	1:3	1.16	7.08	8.00	0.43	0.45	0.46	0.43	0.57

1. When ordering, please specify **termination** and **packaging** codes:

LPR4012-223XMRC

Termination: **R** = RoHS compliant matte tin over nickel over silver.
Special order: **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). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).

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

B = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from B to C.

2. Inductance is measured at 100 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4284A LCR meter or equivalent.
3. SRF measured using an Agilent/HP 4191A or equivalent. When leads are connected in parallel, SRF is the same value.
4. DC current at 25°C applied to L1 that causes the specified inductance drop from its value without current.
5. Current applied to L1 that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.

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

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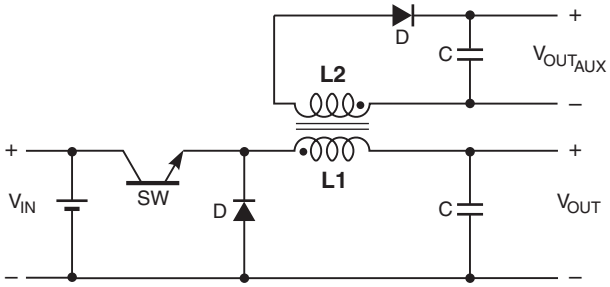
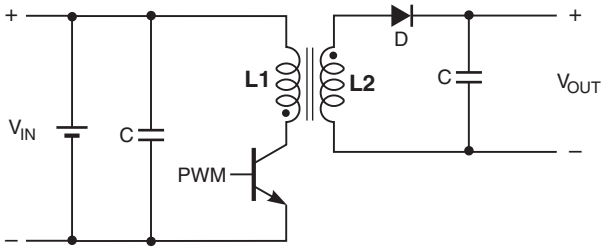
Specification subject to change without notice.
Please check web site for latest information.

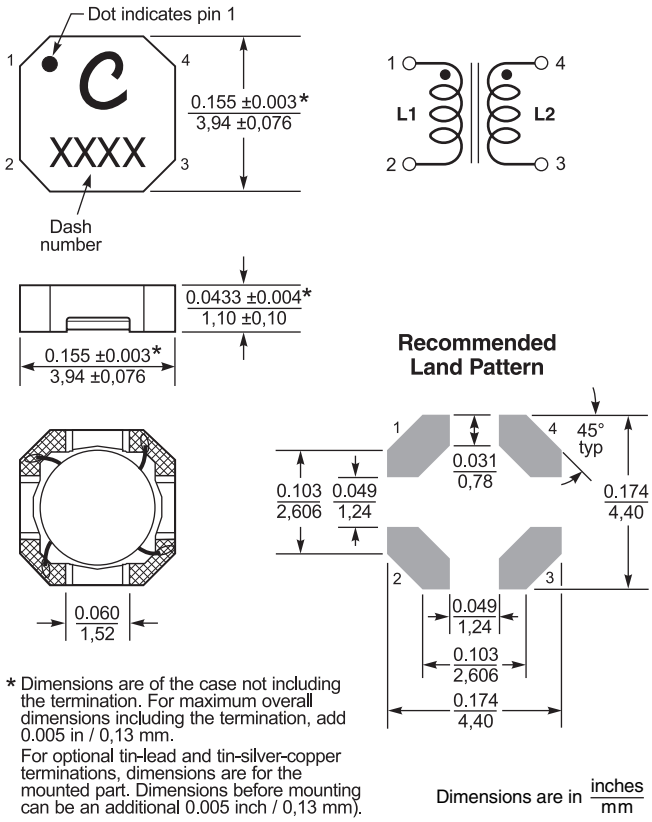
Coupled Inductors – LPR4012 Series



Typical Buck Converter with auxiliary output



Typical Flyback Converter



* 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

Core material Ferrite

Weight 54 – 64 mg

Terminations RoHS compliant matte tin over nickel over silver. Other terminations available at additional cost.

Ambient temperature –40°C to +85°C with 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

Winding to winding isolation 100 Vrms

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)

Packaging 1000/7″ reel; 3500/13″ reel Plastic tape: 12 mm wide, 0.25 mm thick, 8 mm pocket spacing, 1.45 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. See Doc787_PCB_Washing.pdf.

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