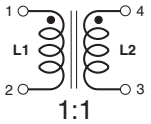
Coupled Inductors

Coilcraft

Key

2.5	0.05
Isat (A)	DCR (Ohms)

1. Find your required inductance in the far left column.
2. Scan the row until you find the desired current rating (bold number); parts from there to the right meet your requirement.
3. Read up to see the Coilcraft product series and dimensions.



	Actual size	Actual size	Actual size	Actual size	Actual size	Actual size	Actual size	Actual size	Actual size	Actual size	Actual size	Actual size	Actual size	Actual size	Actual size	Actual size
	PFD2015 Shielded	**PFD3215** Shielded	**LPD3015** Shielded	**LPD5010** Shielded	**1812DPS** Shielded	**LPD4012** Shielded	**LPD5030** Shielded	**LPD5030V** Shielded	**LPD6235** Shielded	**LPD8035V** Shielded	**MSD7342** Shielded	**MSD1048** Shielded	**MSD1260T** Shielded	**MSD1278T** Shielded	**MSD1583** Shielded	**MSD1514** Shielded
Base (mm)	2.2 × 1.5	3.3 × 2.3	3.0 × 3.0	4.8 × 4.8	5.8 × 5.0	3.94 × 3.94	4.8 × 4.8	4.8 × 4.8	6.0 × 6.0	7.9 × 6.4	7.5 × 7.5	10.3 × 10.3	12.3 × 12.3	12.3 × 12.3	15.0 × 15.0	15.0 × 15.0
Height (mm)	1.4	1.5	1.4	0.9	3.8	1.1	2.9	2.9	3.5	3.5	4.6	4.8	6	8.1	8.6	14.2
Inductance																
0.33 µH						**5.6** 0.042										
0.39 µH		**2.40** 0.070	**3.4** 0.071													
0.56 µH			**2.8** 0.079			**3.9** 0.087	**6.03** 0.031									
0.68 µH				**2.8** 0.070												
0.82 µH						**3.4** 0.100	**5** 0.038									
1.0 µH	**1.3** 0.165	**1.65** 0.123	**2.2** 0.129	**2.2** 0.100	**2.4** 0.2		**4.67** 0.042									
1.5 µH			**1.8** 0.204	**1.8** 0.150		**2.91** 0.185	**4.3** 0.048									
1.8 µH	**1** 0.294	**1.30** 0.250	**1.6** 0.273													
2.2 µH		**1.15** 0.265	**1.6** 0.3	**1.6** 0.200	**1.5** 0.33	**2.50** 0.235	**3.4** 0.067					**9.10** 0.019				
2.5 µH	**0.88** 0.477										**6.3** 0.033					**30.5** 0.012
3.3 µH	**0.77** 0.67	**0.90** 0.335	**1.2** 0.337	**1.3** 0.270		**2.00** 0.320	**2.8** 0.077				**5.4** 0.037		**14.1** 0.02			
4.7 µH	**0.6** 1	**0.80** 0.442	**0.88** 0.503	**1.1** 0.400	**1.5** 0.41	**1.90** 0.500	**2.2** 0.111	**1.90** 0.322		**2.7** 0.120	**4.6** 0.051		**11.08** 0.036	**16.36** 0.040		**23.7** 0.014
5.6 µH				**0.94** 0.450		**1.70** 0.620	**1.9** 0.125				**4.2** 0.063		**9.84** 0.04	**15.74** 0.046		
6.8 µH	**0.47** 1.75	**0.70** 0.600	**0.79** 0.622	**0.87** 0.530		**1.63** 0.530	**1.5** 0.159	**1.55** 0.395	**3.12** 0.12		**3.9** 0.07		**8.64** 0.048	**14.20** 0.048		
8.2 µH	**0.42** 2.5			**0.78** 0.700		**1.30** 0.600					**3.5** 0.075		**7.98** 0.052	**12.20** 0.055		
10 µH	**0.37** 3.4	**0.55** 1.25	**0.6** 1.04	**0.70** 0.780	**0.8** 0.74	**1.10** 0.750	**1.2** 0.21	**1.30** 0.490	**2.8** 0.157	**2.0** 0.171	**3** 0.100	**4.30** 0.053	**6.88** 0.06	**10.66** 0.058	**14.5** 0.031	**16.2** 0.018
12 µH											**2.7** 0.120		**6.7** 0.074	**9.74** 0.062	**13.2** 0.037	**14.8** 0.022
15 µH			**0.51** 1.42	**0.56** 1.19	**0.7** 0.96	**0.94** 1.13	**1.2** 0.298				**2.4** 0.130		**5.8** 0.085	**9.03** 0.072	**11.8** 0.045	**13.3** 0.028
18 µH			**0.48** 1.55								**2.3** 0.170		**5.68** 0.097	**7.86** 0.080	**10.8** 0.048	
22 µH			**0.44** 1.89	**0.48** 1.58	**0.5** 1.84	**0.84** 1.63	**0.98** 0.452		**1.73** 0.3		**2.1** 0.220	**2.90** 0.098	**5.02** 0.116	**7.26** 0.096	**9.8** 0.065	**11.0** 0.036
27 µH											**1.9** 0.250		**4.5** 0.124	**7.02** 0.120		**9.90** 0.039
33 µH			**0.36** 2.84	**0.39** 2.50		**0.58** 1.83	**0.78** 0.565	**0.67** 0.895		**1.0** 0.617	**1.7** 0.270		**4.14** 0.134	**6.52** 0.150	**8** 0.095	**9.00** 0.052
39 µH					**0.45** 2.6						**1.5** 0.380		**3.82** 0.142	**5.60** 0.161		
47 µH			**0.3** 4.03	**0.33** 3.48	**0.4** 2.66	**0.40** 2.52	**0.65** 0.806		**0.99** 0.62	**0.54** 0.668	**1.4** 0.420	**2.00** 0.208	**3.4** 0.174	**4.60** 0.180	**6.7** 0.115	**7.50** 0.075
56 µH											**1.3** 0.460		**3.14** 0.198	**4.50** 0.190		
68 µH			**0.26** 6.11	**0.27** 5.10		**0.37** 3.23	**0.55** 1.13				**1.2** 0.600	**1.70** 0.297	**2.88** 0.216	**4.32** 0.210	**5.5** 0.165	**6.20** 0.090
82 µH						**0.29** 3.66					**1.1** 0.680		**2.6** 0.274	**4.02** 0.280		
100 µH			**0.22** 8.54	**0.22** 8.00		**0.29** 4.76	**0.56** 1.79		**0.74** 1.2	**0.39** 1.34	**0.98** 0.770	**1.30** 0.387	**2.38** 0.322	**3.46** 0.300	**4.6** 0.26	**5.15** 0.126
120 µH			**0.2** 9.23			**0.27** 5.54					**0.90** 1.03		**2.04** 0.418	**3.16** 0.410		
150 µH			**0.18** 12.4	**0.18** 11.7		**0.27** 6.90	**0.45** 2.43	**0.31** 3.82		**0.31** 1.79	**0.80** 1.35		**1.92** 0.476	**2.70** 0.460	**3.75** 0.38	
180 µH			**0.17** 15.32			**0.23** 8.75					**0.73** 1.52		**1.78** 0.536	**2.58** 0.510		
220 µH			**0.15** 18.56	**0.15** 15.2		**0.17** 11.24	**0.36** 3.3	**0.24** 5.25			**0.66** 1.72	**0.90** 0.840	**1.60** 0.691	**2.28** 0.690	**3.1** 0.46	**3.50** 0.287
270 µH											**0.60** 2.41		**1.40** 0.806	**2.10** 0.900		
330 µH			**0.12** 27.7			**0.16** 17.00	**0.32** 5.36				**0.54** 2.70		**1.26** 1.09	**1.84** 1.02		**2.83** 0.367
390 µH											**0.50** 3.05		**1.23** 1.2	**1.70** 1.12		
470 µH							**0.26** 7.51		**0.23** 3.5		**0.46** 4.00		**1.09** 1.59	**1.60** 1.53	**2.12** 1.04	**2.40** 0.550
560 µH											**0.42** 4.43		**0.95** 1.81	**1.46** 1.69		
680 µH							**0.21** 10.8				**0.38** 5.00		**0.87** 2.06	**1.22** 2.29		
820 µH											**0.35** 6.80		**0.80** 2.65	**1.18** 2.55		
1000 µH							**0.17** 16.5		**0.15** 7		**0.31** 7.80		**0.73** 3.06	**1.05** 2.87	**1.45** 2.4	**1.63** 1.25
1500 µH									**0.13** 10.8							
2000 µH									**0.12** 16							

- Isat is the sum of the current flowing in both windings. DCR is the maximum per winding.
- When windings are connected in parallel, inductance is the same value and DCR is half the value shown.
- When windings are connected in series, inductance is four times the value and DCR is twice the value.

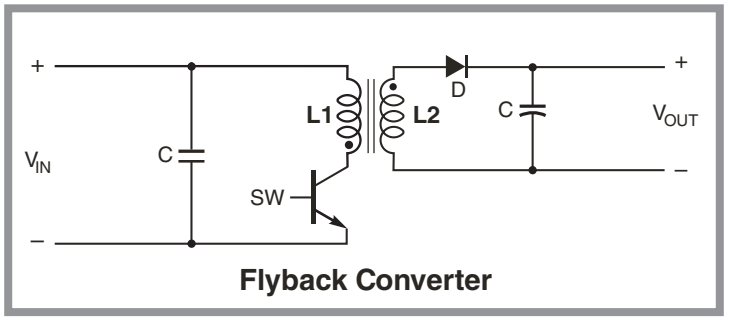
* High-isolation, 1500 Vrms, one minute isolation (hipot) between windings.

For free evaluation samples or more information, visit www.coilcraft.com or call 800-322-2645.

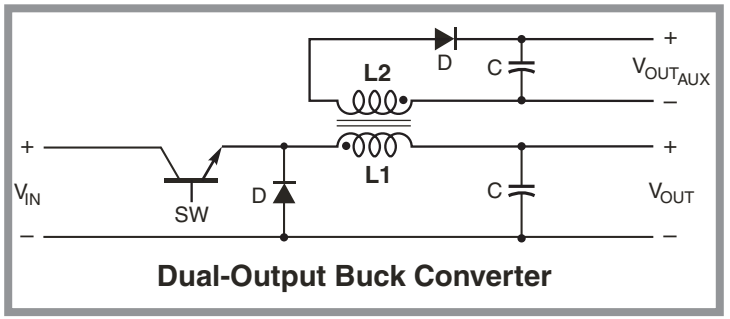
Typical Applications

Coupled inductors are ideal for use in a variety of circuits including flyback, multi-output buck and SEPIC. They can also be used as common mode chokes. These parts offer excellent coupling coefficient (k ≥ 0.98); and provide a wide range of inductance values, high efficiency and excellent current handling. In SEPIC topologies, the required inductance for each winding is half the value needed for two separate inductors, allowing selection of a part with lower DCR and higher current handling.

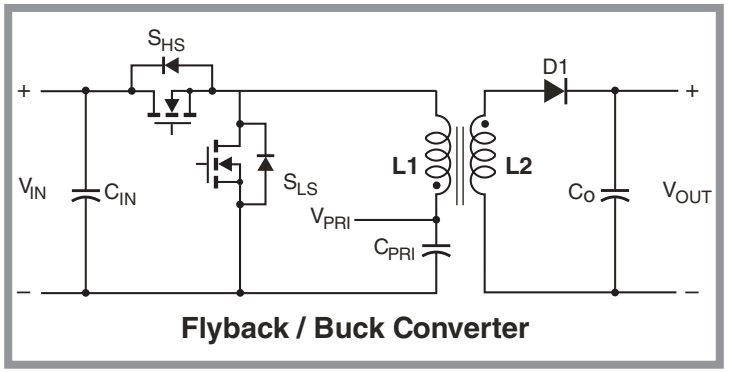
Typical Application Schematics



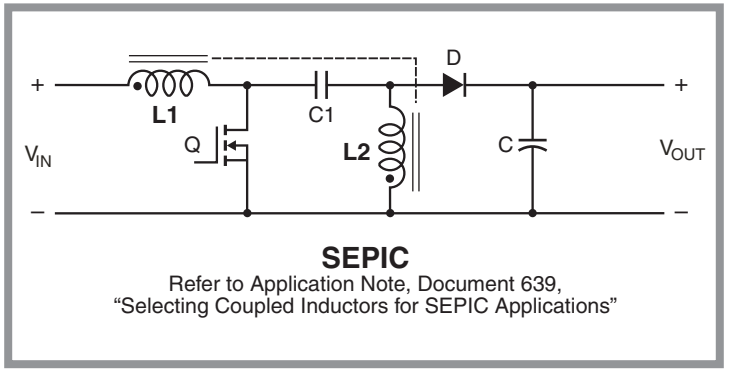
Flyback Converter



Dual-Output Buck Converter



Flyback / Buck Converter



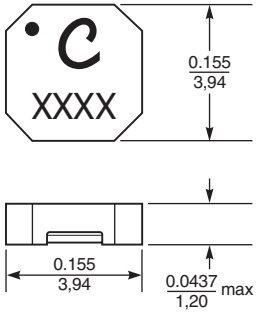
SEPIC

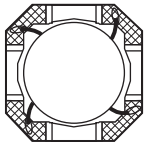
Refer to Application Note, Document 639,
"Selecting Coupled Inductors for SEPIC Applications"

Coilcraft coupled inductors are also available with a variety of turns ratios.

Part number	Turns ratio
LPR4012-202AMR	1 : 1.5
LPR4012-202BMR	1 : 2
LPR4012-202DMR	1 : 3
LPR4012-202LMR	1 : 10
LPR4012-103BMR	1 : 2
LPR4012-103DMR	1 : 3
LPR4012-223BMR	1 : 2
LPR4012-223DMR	1 : 3

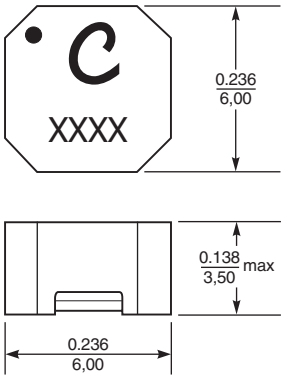
For complete specifications, visit
www.coilcraft.com/lpr4012.cfm

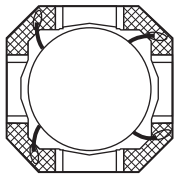




Part number	Turns ratio
LPR6235-253LMR	1 : 10
LPR6235-253PMR	1 : 20
LPR6235-123QMR	1 : 50
LPR6235-752RMR	1 : 90
LPR6235-752SMR	1 : 100

For complete specifications, visit
www.coilcraft.com/lpr6235.cfm





The LPR4012 and LPR6235 series are in stock and available for immediate sampling and purchase. The LPR3010, LPR3015, LPR5010 and LPR5030 series are made to order. Visit www.coilcraft.com/LPR.cfm for details.