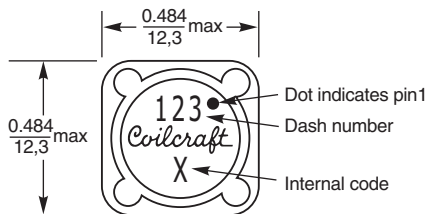
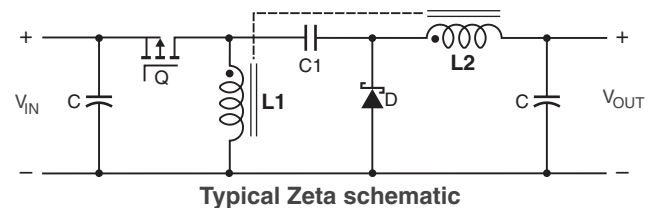
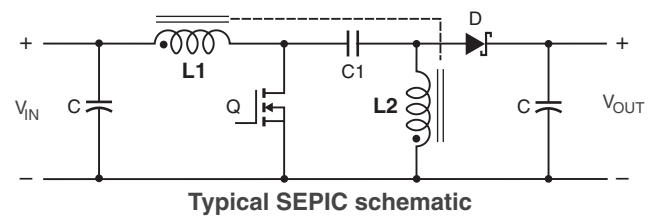
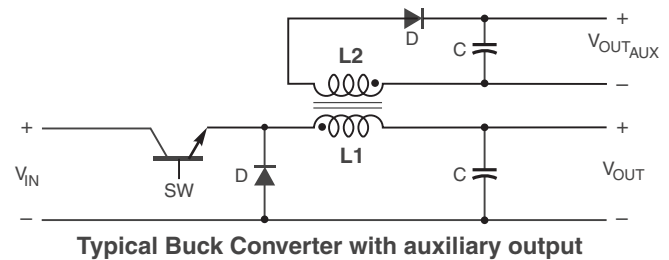
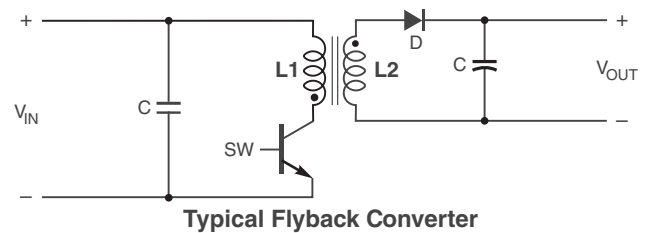




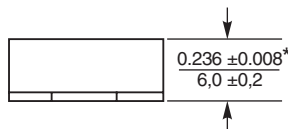
# Coupled Inductors MSD1260 For Flyback, SEPIC, Zeta and other Applications



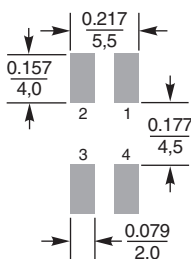
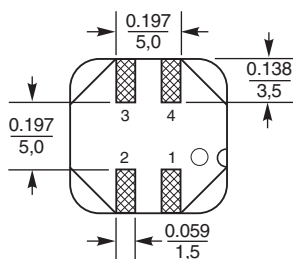
- Tight coupling ( $k \geq 0.98$ )
- 500 V isolation
- Ideal for use in a variety of circuits including flyback, multi-output buck, SEPIC and Zeta.
- High inductance, high efficiency and excellent current handling
- Can also be used as two single inductors connected in series or parallel, as a common mode choke or as a 1 : 1 transformer.



Parts manufactured prior to Sept. 2007 were marked with only the dash number.

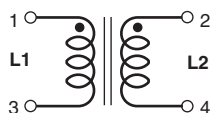


### Recommended Land Pattern



\* For optional tin-lead and tin-silver-copper terminations, dimensions are for the mounted part. Dimensions before mounting can be an additional 0.012 inch (0,3 mm).

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





# Coupled Inductors – MSD1260 Series

Part number <sup>1</sup>	Inductance <sup>2</sup> ( $\mu$ H)	DCR max <sup>3</sup> (Ohms)	SRF typ <sup>4</sup> (MHz)	Coupling coefficient typ	Leakage Inductance <sup>5</sup> typ ( $\mu$ H)	Isat <sup>6</sup> (A)	Irms (A)	
							both windings <sup>7</sup>	one winding <sup>8</sup>
MSD1260-472ML_	4.7 $\pm$ 20%	0.036	32.0	0.98	0.20	10.3	3.16	4.47
MSD1260-562ML_	5.6 $\pm$ 20%	0.040	31.0	0.98	0.20	9.66	3.00	4.24
MSD1260-682ML_	6.8 $\pm$ 20%	0.048	28.0	0.98	0.24	9.21	2.75	3.88
MSD1260-822ML_	8.2 $\pm$ 20%	0.052	25.0	0.98	0.25	8.55	2.63	3.72
MSD1260-103ML_	10 $\pm$ 20%	0.060	22.0	0.99	0.26	7.40	2.45	3.46
MSD1260-123ML_	12 $\pm$ 20%	0.074	21.0	0.99	0.28	6.86	2.21	3.12
MSD1260-153ML_	15 $\pm$ 20%	0.085	17.6	0.99	0.32	6.09	2.06	2.92
MSD1260-183ML_	18 $\pm$ 20%	0.097	17.0	0.99	0.40	5.30	1.93	2.73
MSD1260-223ML_	22 $\pm$ 20%	0.116	15.0	0.98	0.68	5.01	1.76	2.49
MSD1260-273ML_	27 $\pm$ 20%	0.124	13.6	0.99	0.50	4.66	1.70	2.41
MSD1260-333ML_	33 $\pm$ 20%	0.134	12.7	0.99	0.65	4.22	1.64	2.32
MSD1260-393ML_	39 $\pm$ 20%	0.142	11.7	0.99	1.09	3.80	1.59	2.25
MSD1260-473ML_	47 $\pm$ 20%	0.174	8.7	0.99	0.80	3.25	1.44	2.03
MSD1260-563ML_	56 $\pm$ 20%	0.198	7.6	0.99	0.75	3.07	1.35	1.91
MSD1260-683ML_	68 $\pm$ 20%	0.216	6.1	>0.99	0.57	2.83	1.29	1.83
MSD1260-823ML_	82 $\pm$ 20%	0.274	5.3	0.99	1.52	2.55	1.15	1.62
MSD1260-104ML_	100 $\pm$ 20%	0.322	5.0	0.99	1.41	2.20	1.06	1.50
MSD1260-124KL_	120 $\pm$ 10%	0.418	4.4	0.99	1.34	2.05	0.93	1.31
MSD1260-154KL_	150 $\pm$ 10%	0.476	4.0	0.99	1.52	1.82	0.87	1.23
MSD1260-184KL_	180 $\pm$ 10%	0.536	3.6	0.99	1.80	1.60	0.82	1.16
MSD1260-224KL_	220 $\pm$ 10%	0.691	3.2	>0.99	1.60	1.51	0.72	1.02
MSD1260-274KL_	270 $\pm$ 10%	0.806	2.8	>0.99	2.23	1.41	0.67	0.95
MSD1260-334KL_	330 $\pm$ 10%	1.09	2.5	>0.99	2.39	1.28	0.57	0.81
MSD1260-394KL_	390 $\pm$ 10%	1.20	2.3	>0.99	3.72	1.16	0.55	0.77
MSD1260-474KL_	470 $\pm$ 10%	1.59	2.1	>0.99	2.89	1.00	0.48	0.67
MSD1260-564KL_	560 $\pm$ 10%	1.81	2.0	>0.99	2.55	0.95	0.45	0.63
MSD1260-684KL_	680 $\pm$ 10%	2.06	1.8	>0.99	5.76	0.88	0.42	0.59
MSD1260-824KL_	820 $\pm$ 10%	2.65	1.5	>0.99	2.86	0.79	0.37	0.52
MSD1260-105KL_	1000 $\pm$ 10%	3.06	1.2	>0.99	4.32	0.69	0.34	0.49

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

### MSD1260-105KLD

- Termination:** L = RoHS compliant matte tin over nickel over phos bronze.  
Special order: T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).
- Packaging:** D = 13" machine-ready reel. EIA-481 embossed plastic tape (500 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 D instead.

- Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4284A LCR meter or equivalent. When leads are connected in parallel, inductance is the same value. When leads are connected in series, inductance is four times the value.
- DCR is for each winding. When leads are connected in parallel, DCR is half the value. When leads are connected in series, DCR is twice the value.
- SRF measured using an Agilent/HP 4191A or equivalent. When leads are connected in parallel, SRF is the same value.
- Leakage Inductance is for L1 and is measured with L2 shorted.
- DC current, at which the inductance drops 30% (typ) from its value without current. It is the sum of the current flowing in both windings.
- Equal current when applied to each winding simultaneously that causes a 40°C temperature rise from 25°C ambient. See temperature rise calculation.
- Maximum current when applied to one winding that causes a 40°C temperature rise from 25°C ambient. See temperature rise calculation.
- Electrical specifications at 25°C.

Refer to Doc 639 "Selecting Coupled Inductors for SEPIC Applications."

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

### Coupled Inductor Core and Winding Loss Calculator

This web-based utility allows you to enter frequency, peak-to-peak (ripple) current, and Irms current to predict temperature rise and overall losses, including core loss. [Go to online calculator.](#)

**Core material** Ferrite

**Core and winding loss** [Go to online calculator](#)

**Terminations** RoHS compliant matte tin over nickel over phos bronze. Other terminations available at additional cost.

**Weight:** 2.8 – 3.2 g

**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 ackaging: –40°C to +80°C

**Winding-to-winding and winding-to-core isolation** 500 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)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)** 38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

**Packaging** 500/13" reel; Plastic tape: 24 mm wide, 0.35 mm thick, 16 mm pocket spacing, 6.6 mm pocket depth

**PCB washing** Tested with pure water or alcohol only. For other solvents, see [Doc787\\_PCB\\_Washing.pdf](#).



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# Coupled Inductors – MSD1260 Series

## Typical L vs Current



## Typical L vs Frequency



## Current Derating



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