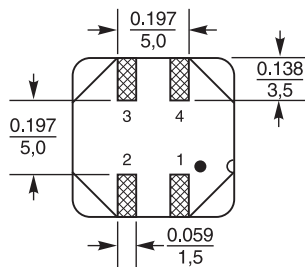
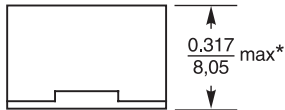
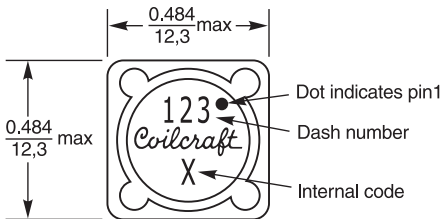
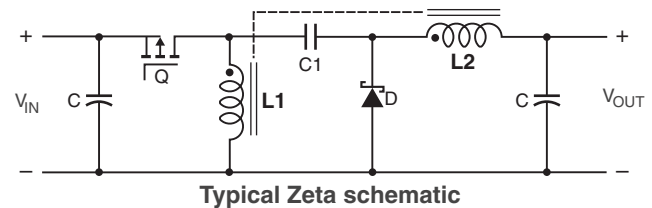
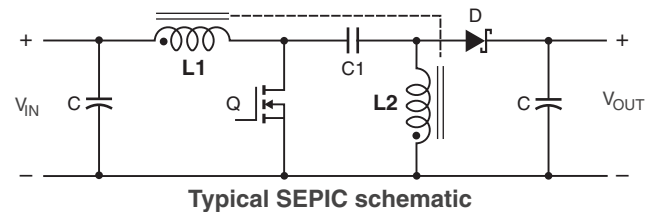
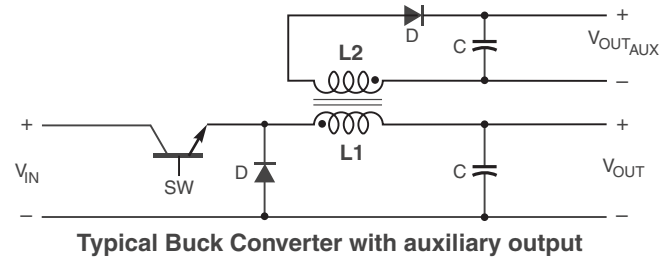
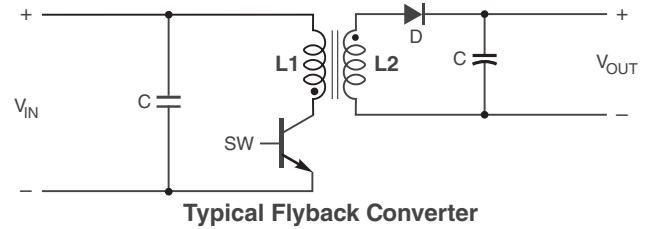


NEW!

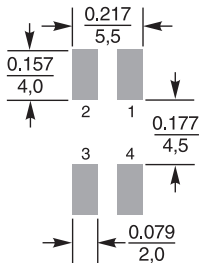
Shielded Coupled Inductors MSD1278H



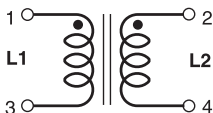
- Tight coupling ($k \geq 0.98$)
- 500 Vrms, one minute isolation (hipot) between primary and secondary
- Ideal for use in a variety of circuits including flyback, multi-output buck, SEPIC, Ćuk and Zeta.
- High efficiency and excellent current handling
- Can also be used as two single inductors connected in series or parallel, as a common mode choke or as a 1 : 1 transformer.
- AEC-Q200 Grade 1 (-40°C to $+125^{\circ}\text{C}$)



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 $\frac{\text{inches}}{\text{mm}}$



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

Shielded Coupled Inductors – MSD1278H



Part number ¹	Inductance ² (μ H)	DCR max ³ (Ohms)	SRF typ ⁴ (MHz)	Coupling coefficient typ	Leakage L max ⁵ (μ H)	Isat (A) ⁶			Irms (A)	
						10% drop	20% drop	30% drop	both windings ⁷	one winding ⁸
MSD1278H-472MED	4.7±20%	0.022	30	0.98	0.35	10.2	11.6	12.7	5.11	7.14
MSD1278H-652MED	6.5±20%	0.025	26	0.98	0.38	9.2	10.4	11.5	4.80	6.74
MSD1278H-822MED	8.2±20%	0.030	23	0.98	0.41	8.3	9.3	10.2	4.32	6.15
MSD1278H-103MED	10 ±20%	0.036	20	0.98	0.46	7.1	8.0	8.8	4.01	5.56
MSD1278H-123MED	12 ±20%	0.037	18	0.98	0.53	6.6	7.5	8.3	3.87	5.47
MSD1278H-153MED	15 ±20%	0.048	16	0.99	0.55	6.0	6.8	7.5	3.42	4.77
MSD1278H-183MED	18 ±20%	0.051	14	0.99	0.64	5.5	6.3	6.8	3.28	4.67
MSD1278H-223MED	22 ±20%	0.068	12	0.99	0.72	5.1	5.6	6.2	2.88	4.06
MSD1278H-273MED	27 ±20%	0.078	11	0.99	0.80	4.6	5.1	5.6	2.70	3.91
MSD1278H-333MED	33 ±20%	0.086	10	0.99	0.85	4.2	4.6	5.1	2.54	3.66
MSD1278H-393MED	39 ±20%	0.110	8.7	0.99	1.0	3.8	4.3	4.7	2.22	3.12
MSD1278H-473MED	47 ±20%	0.127	8.1	0.99	1.1	3.6	3.9	4.4	1.47	2.94
MSD1278H-563MED	56 ±20%	0.140	7.5	0.99	1.3	3.3	3.6	4.0	1.98	2.75
MSD1278H-683MED	68 ±20%	0.155	7.0	0.99	1.4	3.0	3.2	3.6	1.91	2.65
MSD1278H-823MED	82 ±20%	0.206	6.3	0.99	1.6	2.7	2.9	3.3	1.63	2.34
MSD1278H-104KED	100 ±10%	0.230	5.5	>0.99	1.8	2.4	2.6	3.0	1.53	2.25
MSD1278H-124KED	120 ±10%	0.307	4.8	0.99	2.0	2.2	2.4	2.7	1.33	1.87
MSD1278H-154KED	150 ±10%	0.355	4.4	>0.99	2.2	2.0	2.2	2.4	1.26	1.79
MSD1278H-184KED	180 ±10%	0.470	4.2	>0.99	2.5	1.8	2.0	2.2	1.07	1.54
MSD1278H-224KED	220 ±10%	0.540	3.8	>0.99	2.8	1.6	1.8	2.0	1.00	1.41
MSD1278H-274KED	270 ±10%	0.735	3.2	>0.99	3.1	1.5	1.6	1.8	0.87	1.25
MSD1278H-334KED	330 ±10%	0.815	2.8	0.99	3.4	1.3	1.4	1.6	0.83	1.16
MSD1278H-394KED	390 ±10%	0.910	2.7	>0.99	3.6	1.2	1.3	1.5	0.79	1.12
MSD1278H-474KED	470 ±10%	1.185	2.3	>0.99	4.2	1.1	1.2	1.4	0.68	0.95
MSD1278H-564KED	560 ±10%	1.350	2.2	>0.99	4.6	1.0	1.1	1.3	0.64	0.90
MSD1278H-684KED	680 ±10%	1.780	1.8	>0.99	5.0	0.9	1.0	1.1	0.61	0.79
MSD1278H-824KED	820 ±10%	2.000	1.7	>0.99	5.5	0.82	0.92	1.0	0.51	0.74
MSD1278H-105KED	1000 ±10%	2.350	1.6	>0.99	5.8	0.75	0.83	0.92	0.49	0.69

1. When ordering, please specify **termination** code:

MSD1278H-105KED

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

- 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 the specified amount 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.
 - Maximum current when applied to one winding that causes a 40°C temperature rise from 25°C ambient.
 - 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 phosphor bronze. Other terminations available at additional cost.

Weight: 3.7 – 4.4 g

Ambient temperature –40°C to +125°C with Irms current

Maximum part temperature +165°C (ambient + temp rise)

Storage temperature Component: –40°C to +165°C.

Tape and reel packaging: –40°C to +80°C

Winding-to-winding isolation 500 Vrms, one minute

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)

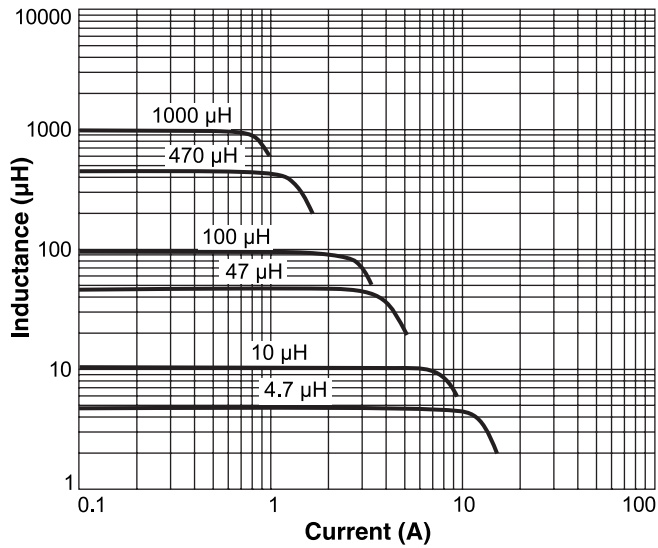
Packaging 500/13" reel; Plastic tape: 24 mm wide, 0.5 mm thick, 16 mm pocket spacing, 8.7 mm pocket depth

PCB washing Tested with pure water or alcohol only. For other solvents, see [Doc787_PCB_Washing.pdf](#).

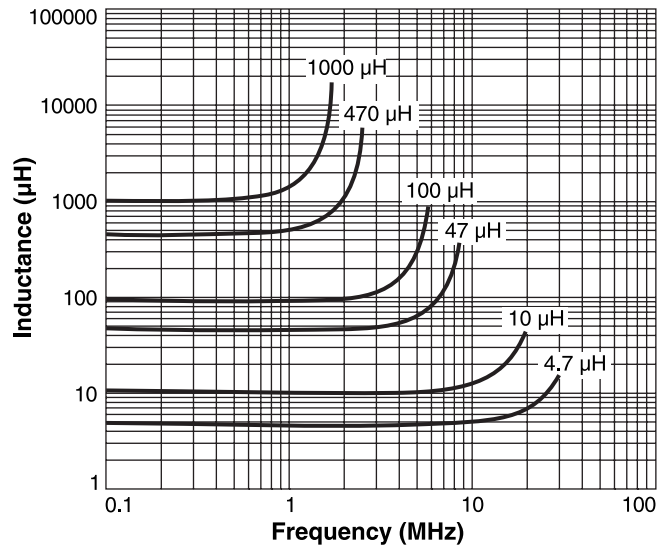


Shielded Coupled Inductors – MSD1278H

Typical L vs Current



Typical L vs Frequency



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