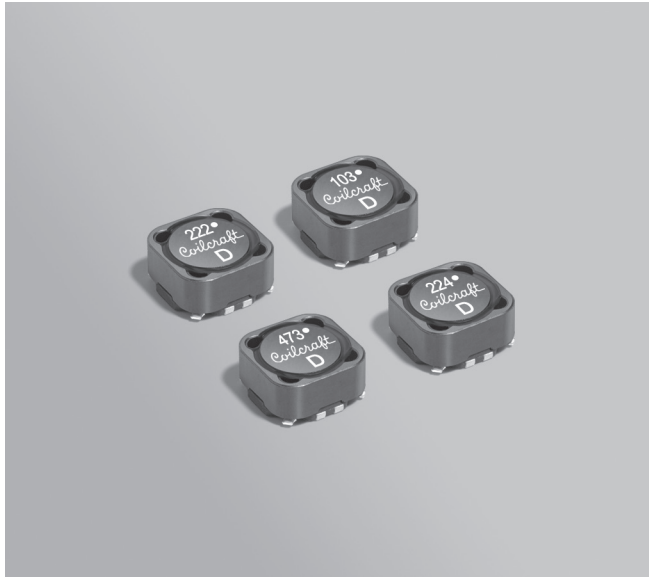
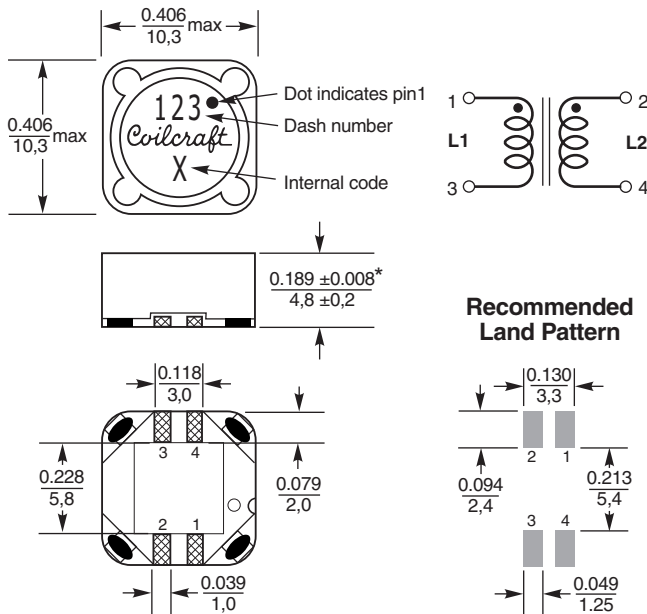
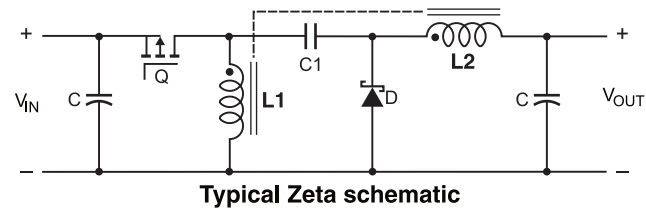
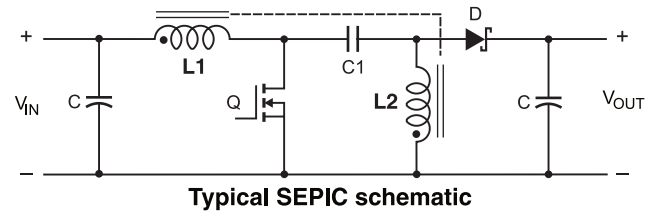
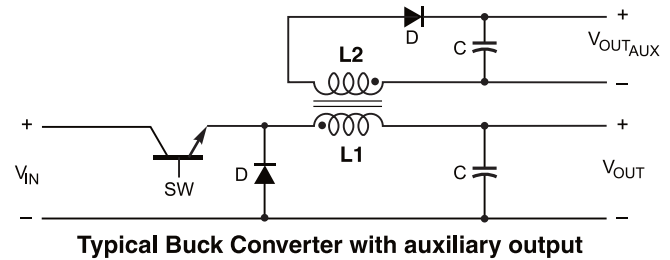
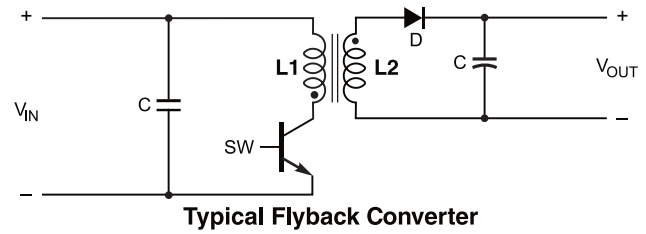


Shielded Coupled Inductors MSD1048H



- Tight coupling ($k \geq 0.97$)
- 200 V isolation
- Ideal for use in a variety of circuits including flyback, multi-output buck, SEPIC, Cuk 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 $+125^{\circ}\text{C}$)



* 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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Shielded Coupled Inductors – MSD1048H Series

Part number ¹	Inductance ² (µH)	DCR max ³ (Ohms)	SRF typ ⁴ (MHz)	Coupling coefficient typ	Leakage Inductance ⁵ typ (µH)	Isat ⁶ (A)	Irms (A)	
							both windings ⁷	one winding ⁸
MSD1048H-222NE_	2.2 ±30%	0.022	55	>0.95	0.30	9.1	3.20	4.60
MSD1048H-103ME_	10 ±20%	0.055	26	>0.97	0.40	4.3	1.30	2.90
MSD1048H-223ME_	22 ±20%	0.100	17	>0.97	0.45	2.9	1.05	2.10
MSD1048H-473ME_	47 ±20%	0.212	12	>0.98	0.50	2.0	0.95	1.45
MSD1048H-683ME_	68 ±20%	0.305	9.0	>0.98	0.60	1.7	0.71	1.15
MSD1048H-104ME_	100 ±20%	0.395	7.3	>0.98	1.0	1.3	0.68	1.05
MSD1048H-224KE_	220 ±10%	0.920	5.0	>0.99	1.2	0.90	0.45	0.70

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

MSD1048H-224KED

Termination: **E** = RoHS compliant matte tin over nickel over phos bronze. Special order: **Q** = RoHS tin-silver-copper (95.5/4/0.5) or **P** = non-RoHS tin-lead (63/37).

Packaging: **D** = 13" machine-ready reel. EIA-481 embossed plastic tape. (800 parts per full reel).

- 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 25°C that causes a 30% (typ) inductance drop 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. This information is for reference only and does not represent absolute maximum ratings. To predict temperature rise [go to online calculator](#).
- Maximum current when applied to one winding that causes a 40°C temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings. To predict temperature rise [go to online calculator](#).
- 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: 1.5– 1.8 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 200 Vrms, one minute

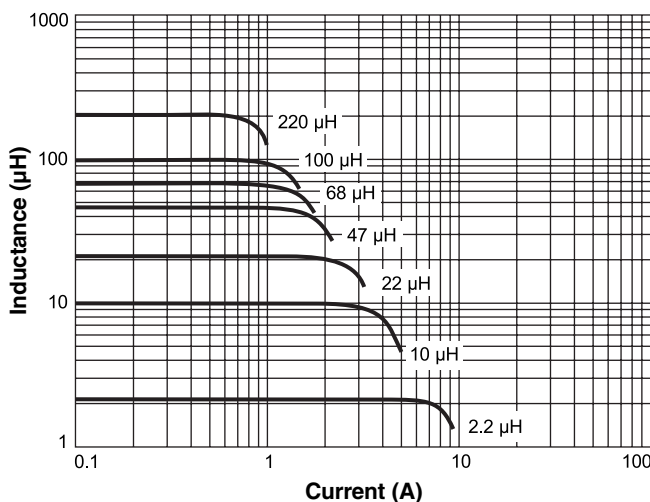
Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

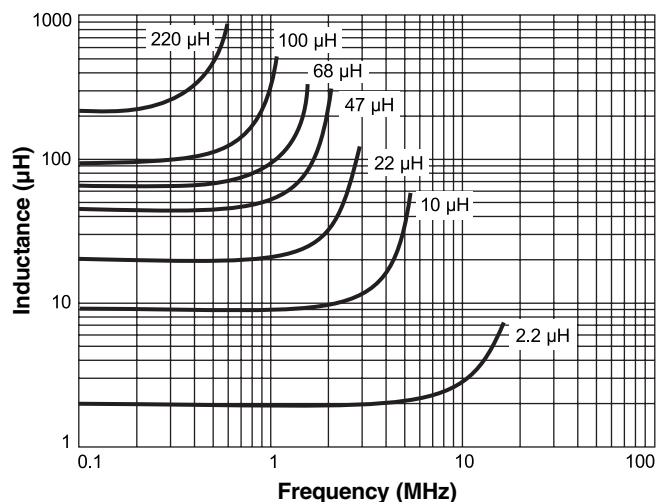
Packaging 800/13" reel Plastic tape: 24 mm wide, 0.35 mm thick, 16 mm pocket spacing, 5.1 mm pocket depth

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).

L vs Current



L vs Frequency



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