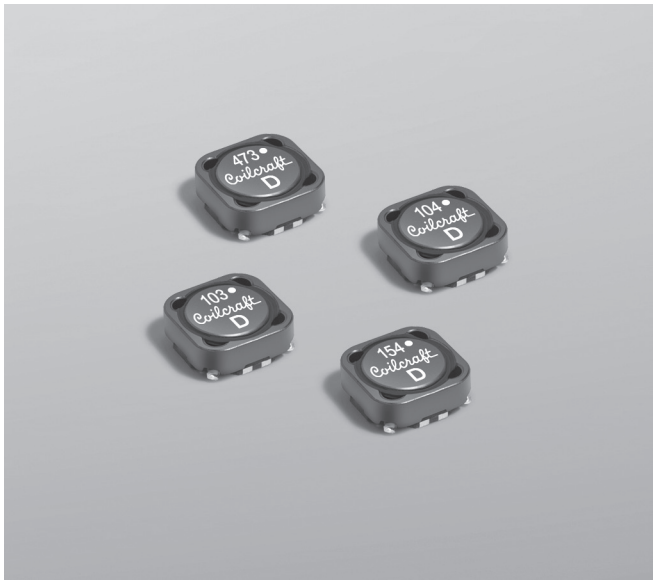
RoHS/ REACH COMPLIANT

Halogen Free

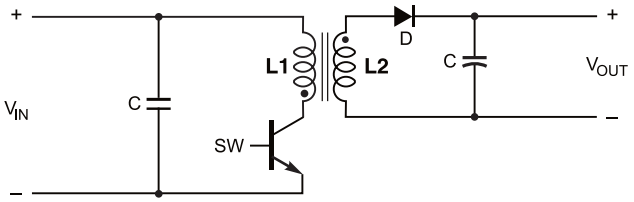
AEC Q200 +125°C

HIGH ISOLATION

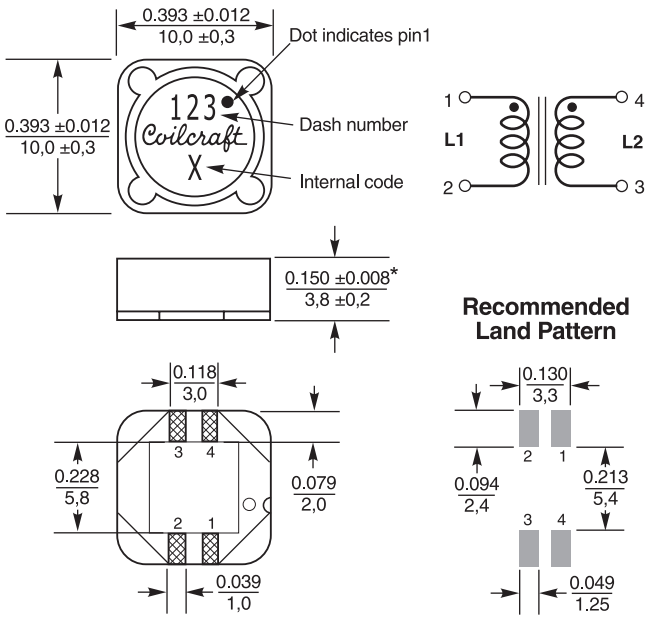
Coupled Inductors – MSD1038V



- High isolation voltage, 2250 Vrms, one minute isolation (hipot) between primary and secondary windings
- Ideal for use in a variety of circuits including flyback, multi-output buck, SEPIC, Ćuk and Zeta.
- High efficiency and excellent current handling
- Provides Functional Insulation
- AEC-Q200 Grade 1 (–40°C to +125°C)



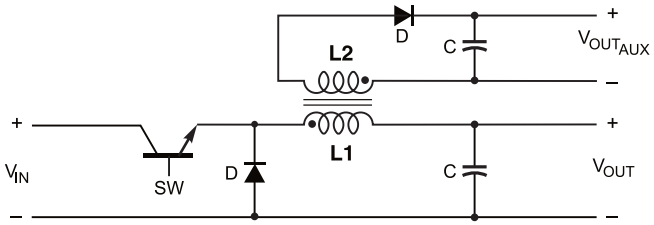
Typical Flyback Converter



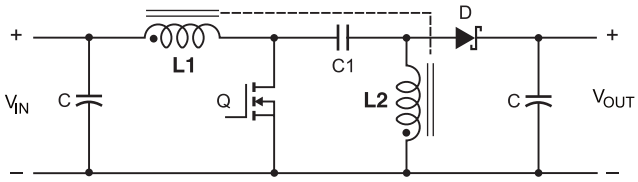
Recommended Land Pattern

* 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).

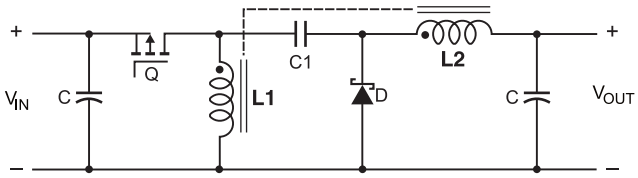
Dimensions are in inches / mm



Typical Buck Converter with auxiliary output



Typical SEPIC schematic



Typical Zeta schematic

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Coupled Inductors – MSD1038V Series

Part number[1]	Inductance[2] (µH)	DCR max[3] (Ohms)	SRF typ[4] (MHz)	Coupling coefficient typ	Leakage Inductance[5] typ (µH)	Isolation[6] (Vrms)	Isat[7] (A)	Irms (A)[8] both windings	Irms (A)[8] one winding
MSD1038V-103ME_	10 ±20%	0.108	26.0	≥0.95	0.5	2165	4.7	2.75	3.90
MSD1038V-223ME_	22 ±20%	0.240	16.5	≥0.96	0.7	2165	3.1	1.30	1.80
MSD1038V-333ME_	33 ±20%	0.340	13.0	≥0.96	0.8	2165	2.6	1.00	1.45
MSD1038V-473ME_	47 ±20%	0.460	11.0	≥0.96	0.9	2165	2.2	0.92	1.30
MSD1038V-683ME_	68 ±20%	0.690	9.0	≥0.96	1.0	2165	1.8	0.78	1.10
MSD1038V-104ME_	100 ±20%	0.950	7.5	≥0.96	1.2	2165	1.5	0.67	0.95
MSD1038V-124ME_	120 ±20%	1.150	6.8	≥0.96	1.3	2165	1.3	0.53	0.75
MSD1038V-154ME_	150 ±20%	1.350	6.0	≥0.96	1.5	2165	1.2	0.46	0.65

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

MSD1038V-154KEC

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: **C** = 7″ machine-ready reel. EIA-481 embossed plastic tape. (250 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 (1000 parts per full reel)

2 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.

3 DCR is for each winding.

4 SRF measured using an Agilent/HP 4191A or equivalent. When leads are connected in parallel, SRF is the same value.

5 Leakage Inductance is for L1 and is measured with L2 shorted.

6 2250 Vrms, one minute isolation (hipot) between windings.

7. 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.

8. Current that causes a 40°C temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.

9. Electrical specifications at 25°C.

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

Core material Ferrite

Weight: 1.2– 1.5 g

Environmental RoHS compliant, halogen free

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

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 2250 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)

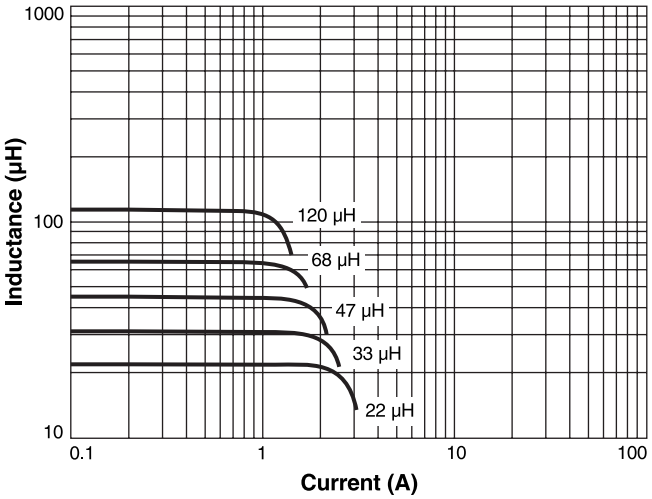
Packaging 250/7″ reel; 1000/13″ reel Plastic tape: 24 mm wide, 0.35 mm thick, 16 mm pocket spacing, 4.3 mm pocket depth

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

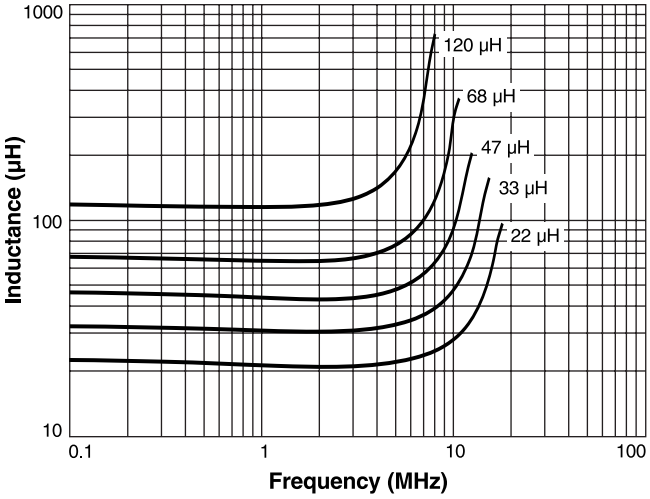
Coupled Inductor Core and Winding Loss Calculator

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.

Typical L vs Current



Typical L vs Frequency



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