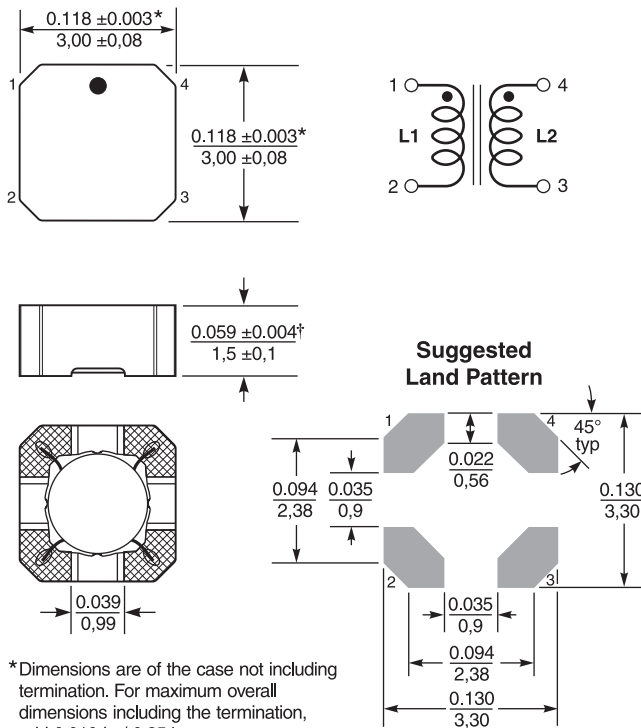
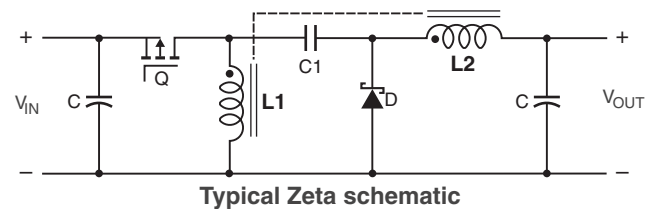
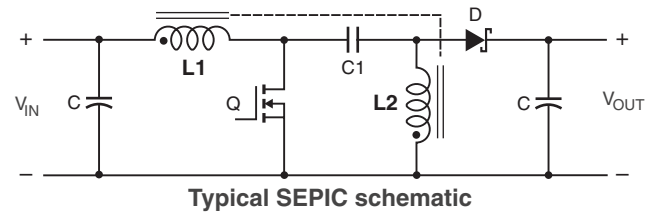
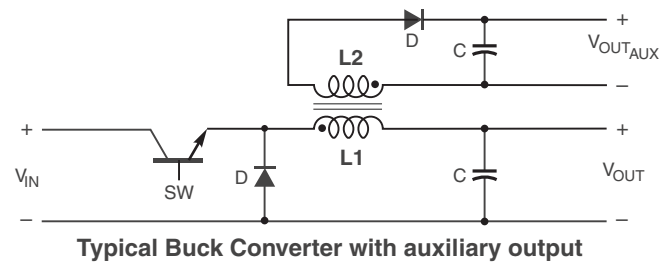
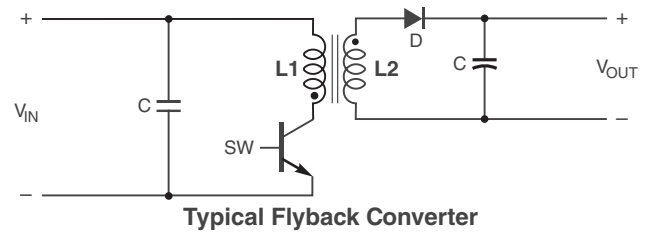


Coupled Inductors for Critical Applications MS412PJD



- Only 1.4 mm high and 3 mm square
- Ideal for use in flyback, multi-output buck, SEPIC and Zeta applications.
- High inductance, high efficiency and excellent current handling
- Can also be used as two single inductors connected in series or parallel or as a common mode choke.
- The tin-lead (Sn-Pb) termination offers the best possible board adhesion.



*Dimensions are of the case not including termination. For maximum overall dimensions including the termination, add 0.010 in / 0,254 mm.

† Height dimension is after mounting. For maximum height dimension before mounting, add 0.006 in / 0,152 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. Specifications subject to change without notice. Please check our web site for latest information.

MS412PJD Series Coupled Inductors

Part number ¹	Inductance ² (μ H)	DCR max ³ (Ohms)	SRF typ ⁴ (MHz)	Coupling coefficient typ	Leakage L typ ⁵ (μ H)	Isat (A) ⁶			Irms (A)	
						10% drop	20% drop	30% drop	both windings ⁷	one winding ⁸
MS412PJD391NSZ	0.39 \pm 30%	0.071	289	0.89	0.08	3.2	3.3	3.4	1.45	2.05
MS412PJD561MSZ	0.56 \pm 20%	0.079	235	0.93	0.08	2.7	2.8	2.8	1.37	1.94
MS412PJD102MSZ	1.0 \pm 20%	0.129	160	0.95	0.09	2.0	2.1	2.2	1.08	1.52
MS412PJD152MSZ	1.5 \pm 20%	0.204	140	0.96	0.11	1.6	1.7	1.8	0.86	1.20
MS412PJD182MSZ	1.8 \pm 20%	0.273	135	0.96	0.13	1.5	1.6	1.6	0.78	1.10
MS412PJD222MSZ	2.2 \pm 20%	0.300	110	0.97	0.14	1.5	1.6	1.6	0.75	1.05
MS412PJD332MSZ	3.3 \pm 20%	0.337	90	0.98	0.16	1.0	1.1	1.2	0.67	0.94
MS412PJD472MSZ	4.7 \pm 20%	0.503	79	0.98	0.18	0.86	0.87	0.88	0.54	0.76
MS412PJD682MSZ	6.8 \pm 20%	0.622	58	0.98	0.22	0.77	0.78	0.79	0.49	0.69
MS412PJD103MSZ	10 \pm 20%	1.040	48	0.99	0.28	0.58	0.59	0.60	0.38	0.53
MS412PJD153MSZ	15 \pm 20%	1.420	35	0.99	0.37	0.49	0.50	0.51	0.32	0.46
MS412PJD183MSZ	18 \pm 20%	1.550	33	0.99	0.42	0.46	0.47	0.48	0.31	0.44
MS412PJD223MSZ	22 \pm 20%	1.89	30	0.99	0.48	0.42	0.43	0.44	0.28	0.40
MS412PJD333MSZ	33 \pm 20%	2.84	23	0.99	0.63	0.34	0.35	0.36	0.23	0.32
MS412PJD473MSZ	47 \pm 20%	4.03	17	0.99	0.81	0.28	0.29	0.30	0.19	0.27
MS412PJD683MSZ	68 \pm 20%	6.11	14	0.99	1.13	0.24	0.25	0.26	0.16	0.22
MS412PJD104MSZ	100 \pm 20%	8.54	11	0.99	1.50	0.20	0.21	0.22	0.13	0.19
MS412PJD124MSZ	120 \pm 20%	9.23	9.0	0.99	1.76	0.19	0.20	0.20	0.13	0.18
MS412PJD154MSZ	150 \pm 20%	12.40	8.0	0.99	2.22	0.16	0.17	0.18	0.11	0.16
MS412PJD184MSZ	180 \pm 20%	15.32	7.5	0.99	2.79	0.15	0.16	0.17	0.10	0.14
MS412PJD224MSZ	220 \pm 20%	18.56	6.0	0.99	3.56	0.13	0.14	0.15	0.09	0.13
MS412PJD334MSZ	330 \pm 20%	27.70	5.0	0.99	5.18	0.11	0.12	0.12	0.07	0.10

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

MS412PJD34MSZ

Screening: Z = Unscreened

Y = Unscreened (SLDC Option A)

W = Unscreened (SLDC Option B)

H = Group A screening per Coilcraft CP-SA-10001

G = Coilcraft CP-SA-10001 Group A (SLDC Option A)

D = Coilcraft CP-SA-10001 Group A (SLDC Option B)

N = Group A screening per Coilcraft CP-SA-10004

- Screening performed to the document's latest revision.
- Custom screening also available

- 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 the specified 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.
- 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.
- 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.

Core material Ferrite

Core and winding loss

Weight 48 – 66 mg

Terminations Tin-lead (63/37) over tin over nickel

Ambient temperature –55°C to +105°C with Irms current

Maximum part temperature +155°C (ambient + temp rise).

Storage temperature Component: –55°C to +155°C.

Packaging: –55°C to +80°C

Winding to winding isolation 100 V

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 1000/7" reel Plastic tape: 12 mm wide, 0.26 mm thick, 8 mm pocket spacing, 1.65 mm pocket depth

Recommended pick and place nozzle OD: 3 mm; ID: \leq 1.5 mm



CRITICAL PRODUCTS & SERVICES

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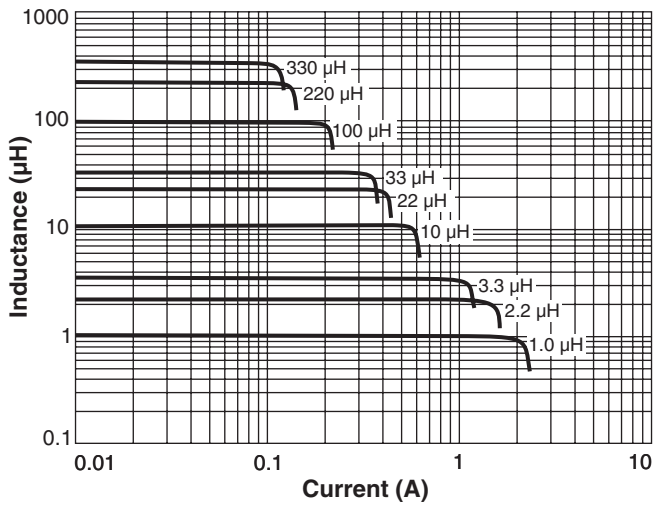
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Document MS661-2 Revised 04/25/23

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MS412PJD Series Coupled Inductors

Typical L vs Current



Typical L vs Frequency

