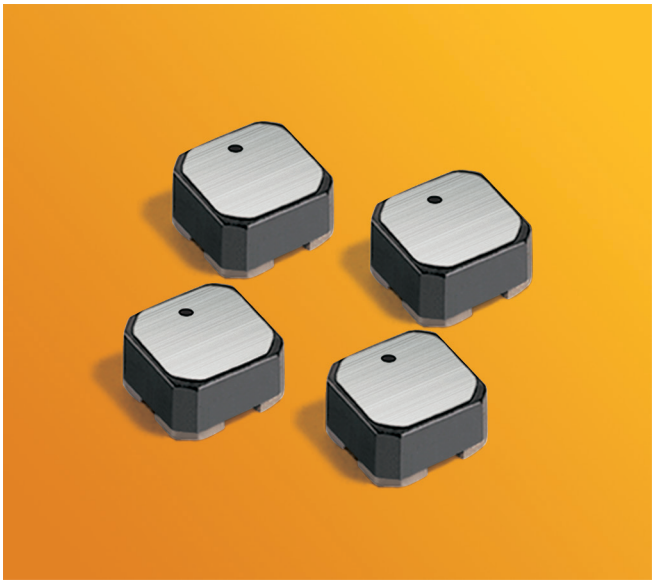
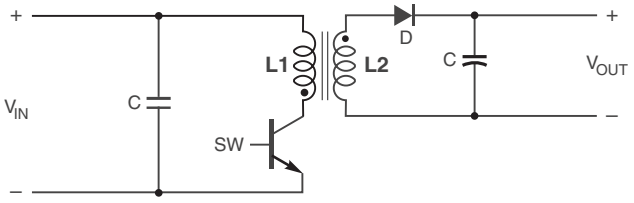
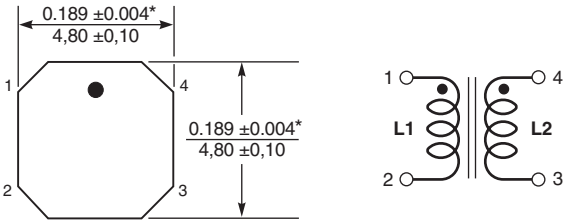
High-Reliability Coupled Inductors MS466PJD

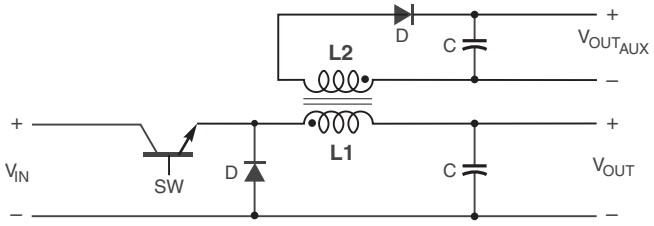


- Miniature size of only 3 mm high and 5 mm square
- Ideal for use in a variety of circuits including flyback, multi-output buck, SEPIC and Zeta
- Tin-lead (Sn-Pb) termination offers the best possible board adhesion
- High inductance, high efficiency and excellent current handling
- Rugged, low cost part
- Can be used as two single inductors connected in series or parallel or as a common mode choke

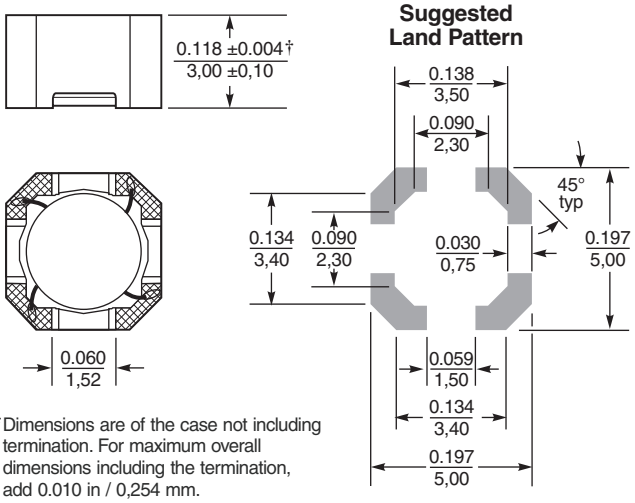


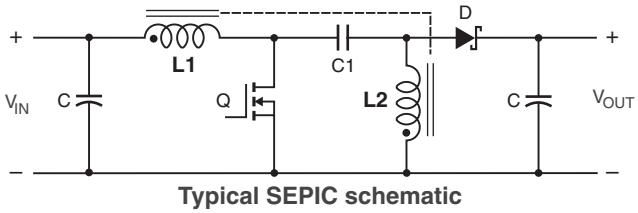
Typical Flyback Converter



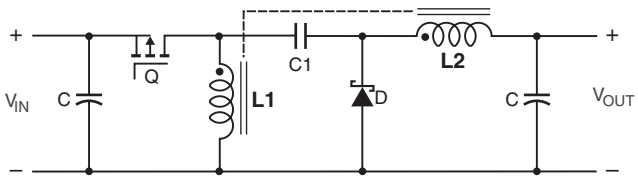


Typical Buck Converter with auxiliary output





Typical SEPIC schematic



Typical Zeta schematic

*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 inches / mm

Coilcraft CPS
CRITICAL PRODUCTS & SERVICES

1102 Silver Lake Road
Cary, IL 60013
Phone 800-981-0363

Fax 847-639-1508
Email cps@coilcraft.com
www.coilcraft-cps.com

Document MS757-1 Revised 04/10/23

MS466PJD Series Coupled Inductors

Part number[1]	Inductance[2] (µH)	DCR max[3] (Ohms)	SRF typ[4] (MHz)	Coupling coefficient typ	Leakage L typ[5] (µH)	Isat (A)[6] 10% drop	Isat (A)[6] 20% drop	Isat (A)[6] 30% drop	Irms (A) both windings[7]	Irms (A) one winding[8]
MS466PJD102NSZ	1.0 ±30%	0.042	153	0.95	0.09	4.30	4.49	4.67	2.20	3.11
MS466PJD152MSZ	1.5 ±20%	0.048	118	0.97	0.09	3.90	4.20	4.30	2.05	2.90
MS466PJD222MSZ	2.2 ±20%	0.067	87.0	0.98	0.10	2.80	2.98	3.07	1.95	2.76
MS466PJD332MSZ	3.3 ±20%	0.077	61.0	0.98	0.10	2.50	2.70	2.80	1.70	2.40
MS466PJD472MSZ	4.7 ±20%	0.111	49.0	0.99	0.11	2.10	2.20	2.20	1.40	1.98
MS466PJD562MSZ	5.6 ±20%	0.125	44.0	0.99	0.11	1.80	1.80	1.89	1.35	1.91
MS466PJD682MSZ	6.8 ±20%	0.159	40.0	0.99	0.12	1.40	1.48	1.48	1.20	1.70
MS466PJD103MSZ	10 ±20%	0.210	28.0	0.99	0.13	1.20	1.20	1.20	1.05	1.48
MS466PJD153MSZ	15 ±20%	0.298	23.0	0.99	0.15	1.00	1.17	1.17	0.85	1.20
MS466PJD223MSZ	22 ±20%	0.452	17.0	>0.99	0.17	0.89	0.98	0.98	0.70	0.99
MS466PJD333MSZ	33 ±20%	0.565	16.0	>0.99	0.20	0.73	0.77	0.78	0.60	0.85
MS466PJD473MSZ	47 ±20%	0.806	12.0	>0.99	0.24	0.59	0.63	0.65	0.50	0.71
MS466PJD683MSZ	68 ±20%	1.13	9.00	>0.99	0.29	0.50	0.54	0.55	0.43	0.61
MS466PJD104MSZ	100 ±20%	1.79	8.44	>0.99	0.37	0.47	0.54	0.56	0.33	0.47
MS466PJD154MSZ	150 ±20%	2.43	6.72	>0.99	0.46	0.38	0.43	0.45	0.28	0.40
MS466PJD224MSZ	220 ±20%	3.30	5.53	>0.99	0.54	0.31	0.35	0.36	0.24	0.34
MS466PJD334MSZ	330 ±20%	5.36	4.17	>0.99	0.65	0.25	0.25	0.32	0.18	0.25
MS466PJD474MSZ	470 ±20%	7.51	3.52	>0.99	0.76	0.21	0.24	0.26	0.15	0.21
MS466PJD684MSZ	680 ±20%	10.8	2.93	>0.99	0.89	0.17	0.20	0.21	0.13	0.18
MS466PJD105MSZ	1000 ±20%	16.5	2.33	>0.99	1.20	0.15	0.17	0.17	0.10	0.14

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

MS466PJD105MSZ

Screening: **Z** = Unscreened
Y = Unscreened (SLDC Option A)
W = Unscreened (SLDC Option B)
H = Coilcraft CP-SA-10001 Group A
G = Coilcraft CP-SA-10001 Group A (SLDC Option A)
D = Coilcraft CP-SA-10001 Group A (SLDC Option B)
1 = EEE-INST-002 (Family 1) Level 1
2 = EEE-INST-002 (Family 1) Level 2
3 = EEE-INST-002 (Family 1) Level 3
4 = MIL-STD-981 (Family 04) Class B
5 = MIL-STD-981 (Family 04) Class S
F = ESCC3201 (F4 operational life performed at 105°C)

- Screening performed to the document's latest revision.
- Lot qualification (Group B) available.
- Testing T and U have been replaced with more detailed codes 4, 5, and 1, 2, 3, respectively. Codes T and U can still be used, if necessary. Custom testing also available.
- Country of origin restrictions available; prefix options G or F.

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. When leads are connected in parallel, DCR is half the value. When leads are connected in series, DCR is twice the value.
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. 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.
7. Equal current when applied to each winding simultaneously that causes a 40°C temperature rise from 25°C ambient. Calculate temperature rise.
8. 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. Calculate temperature rise.
9. Electrical specifications at 25°C.

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

Weight 210 – 300 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 750 per 7″ reel Plastic tape: 12 mm wide, 0.32 mm thick, 8 mm pocket spacing, 3.1 mm pocket depth

Recommended pick and place nozzle OD: 5 mm; ID: ≤ 2.5 mm

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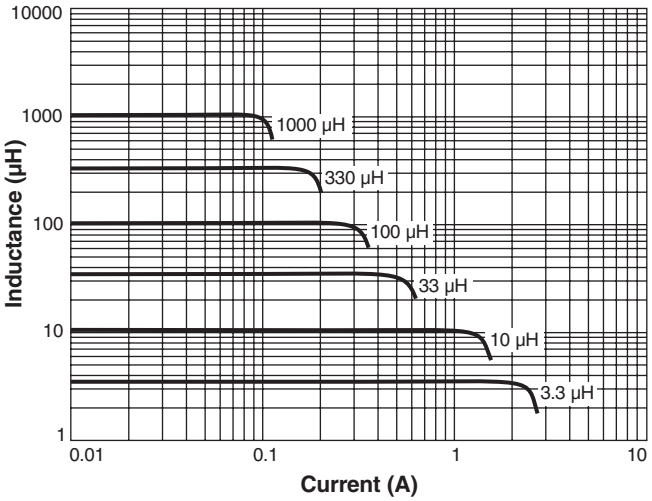
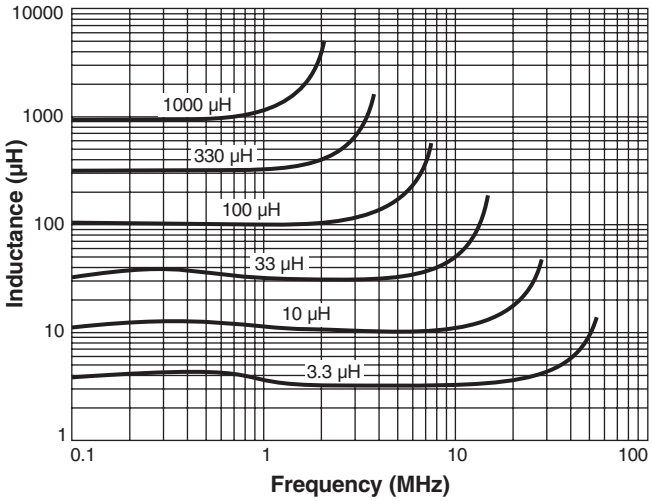
Typical L vs Current



Typical L vs Frequency



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1102 Silver Lake Road
Cary, IL 60013
Phone 800-981-0363

Fax 847-639-1508
Email cps@coilcraft.com
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