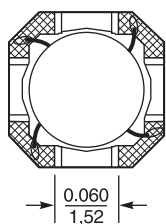
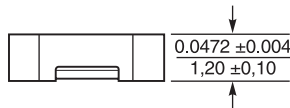
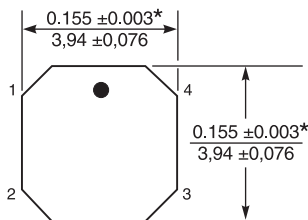
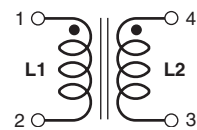


High-Reliability Coupled Inductors ML416PJD

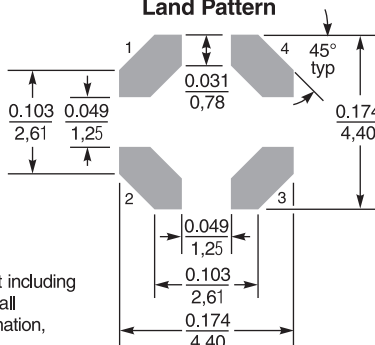


*Dimensions are of the case not including termination. For maximum overall dimensions including the termination, add 0.005 in / 0,13 mm

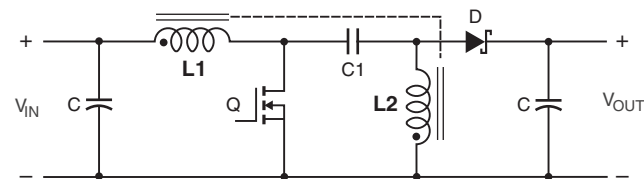
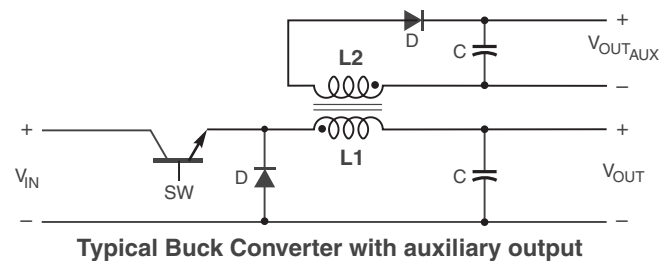
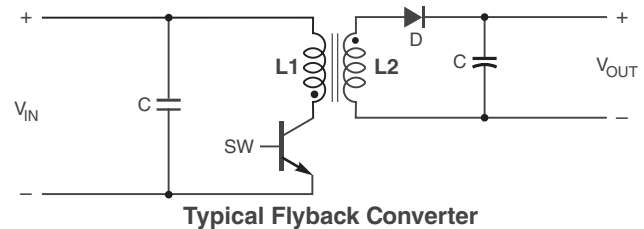
Dimensions are in $\frac{\text{inches}}{\text{mm}}$



Suggested Land Pattern



- Only 1.1 mm high and 4 mm square
- Ideal for use in flyback, multi-output buck and SEPIC 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.



Core material Ferrite

Core and winding loss [Go to online calculator](#)

Weight 60 – 81 mg

Terminations Silver-palladium-platinum-glass frit.

Ambient temperature -55°C to $+105^{\circ}\text{C}$ with Irms current

Maximum part temperature $+155^{\circ}\text{C}$ (ambient + temp rise)

Storage temperature Component: -55°C to $+155^{\circ}\text{C}$.

Tape and reel packaging: -55°C to $+80^{\circ}\text{C}$

Winding to winding isolation 100 V

Resistance to soldering heat Max three 40 second reflows at $+260^{\circ}\text{C}$, parts cooled to room temperature between cycles

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at $<30^{\circ}\text{C}$ / 85% relative humidity)

Enhanced crush-resistant packaging 1000/7" reel

Plastic tape: 12 mm wide, 0.25 mm thick, 8 mm pocket spacing, 1.32 mm pocket depth

Recommended pick and place nozzle OD: 4 mm; ID: ≤ 2 mm

Coilcraft CPS
CRITICAL PRODUCTS & SERVICES

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www.coilcraft-cps.com

Document ML580-1 Revised 04/19/23

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.

ML416PJD Series (4012)

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
ML416PJD331NLZ	0.33 \pm 30%	0.042	255	0.94	0.06	5.2	5.4	5.6	2.13	3.01
ML416PJD561NLZ	0.56 \pm 30%	0.087	185	0.95	0.08	3.7	3.8	3.9	1.48	2.09
ML416PJD821NLZ	0.82 \pm 30%	0.100	130	0.97	0.09	3.2	3.3	3.4	1.38	1.95
ML416PJD152NLZ	1.5 \pm 30%	0.185	86	0.97	0.11	2.50	2.81	2.91	1.01	1.43
ML416PJD222NLZ	2.2 \pm 30%	0.235	70	0.98	0.14	2.30	2.40	2.50	0.90	1.27
ML416PJD332NLZ	3.3 \pm 30%	0.320	48	0.98	0.16	1.80	1.90	2.00	0.77	1.09
ML416PJD472MLZ	4.7 \pm 20%	0.500	39	0.98	0.18	1.60	1.70	1.80	0.62	0.87
ML416PJD562MLZ	5.6 \pm 20%	0.620	32	0.99	0.20	1.50	1.60	1.60	0.55	0.78
ML416PJD682MLZ	6.8 \pm 20%	0.530	31	0.99	0.22	1.20	1.52	1.63	0.60	0.85
ML416PJD822MLZ	8.2 \pm 20%	0.600	29	0.99	0.24	1.10	1.20	1.30	0.56	0.80
ML416PJD103MLZ	10 \pm 20%	0.750	25	0.99	0.26	0.98	1.00	1.10	0.50	0.71
ML416PJD153MLZ	15 \pm 20%	1.13	21	0.99	0.30	0.90	0.92	0.94	0.41	0.58
ML416PJD223MLZ	22 \pm 20%	1.63	15	0.99	0.34	0.70	0.82	0.84	0.34	0.48
ML416PJD333MLZ	33 \pm 20%	1.83	12	>0.99	0.41	0.37	0.57	0.58	0.32	0.46
ML416PJD473MLZ	47 \pm 20%	2.52	8.8	>0.99	0.51	0.33	0.39	0.40	0.27	0.39
ML416PJD683MLZ	68 \pm 20%	3.23	7.8	>0.99	0.66	0.27	0.36	0.37	0.24	0.34
ML416PJD823MLZ	82 \pm 20%	3.66	7.3	>0.99	0.75	0.27	0.27	0.29	0.23	0.32
ML416PJD104MLZ	100 \pm 20%	4.75	6.1	>0.99	0.86	0.22	0.28	0.29	0.20	0.28
ML416PJD124MLZ	120 \pm 20%	5.54	5.3	>0.99	0.98	0.21	0.26	0.27	0.19	0.26
ML416PJD154MLZ	150 \pm 20%	6.90	4.6	>0.99	1.19	0.18	0.26	0.27	0.17	0.23
ML416PJD184MLZ	180 \pm 20%	8.75	4.1	>0.99	1.40	0.16	0.21	0.23	0.15	0.21
ML416PJD224MLZ	220 \pm 20%	11.24	3.3	>0.99	1.66	0.15	0.16	0.17	0.13	0.18
ML416PJD334MLZ	330 \pm 20%	17.00	2.8	>0.99	2.45	0.13	0.16	0.16	0.11	0.15

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

ML416PJD334MLZ

Termination: L = Silver-palladium-platinum-glass frit.
R = Matte tin over nickel over silver.

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)

- Screening performed to the document's latest revision.
- Custom testing also available.
- Country of origin restrictions available; prefix option G.

- 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.
[Calculate temperature rise.](#)
- 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.](#)
- Electrical specifications at 25°C.

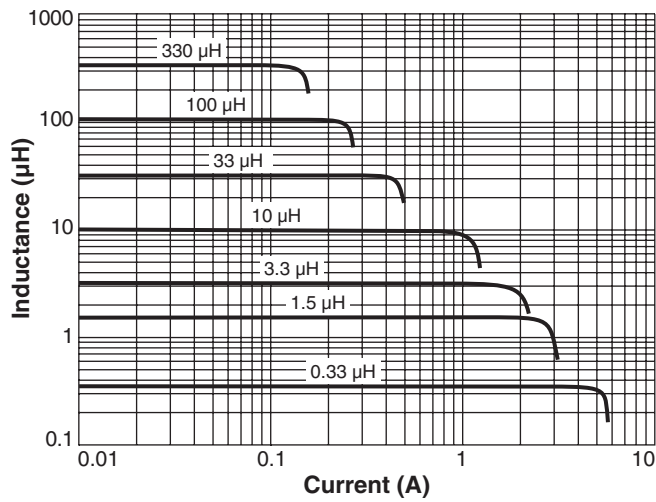
Refer to Doc 639 "Selecting Coupled Inductors for SEPIC Applications."
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

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.](#)

ML416PJD Series (4012)

Typical L vs Current



Typical L vs Frequency

