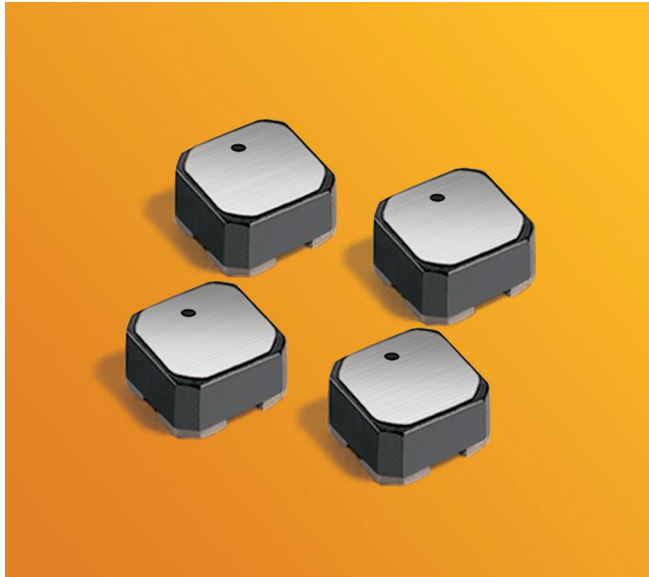
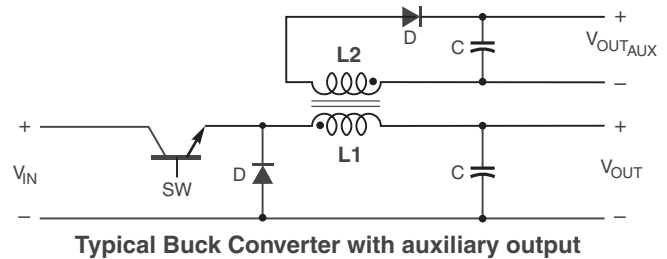
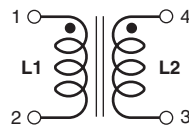
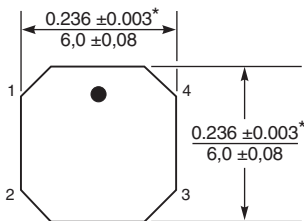
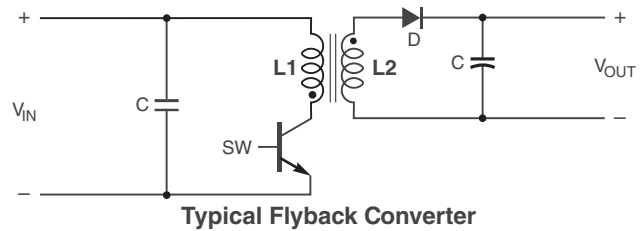


**NEW!**

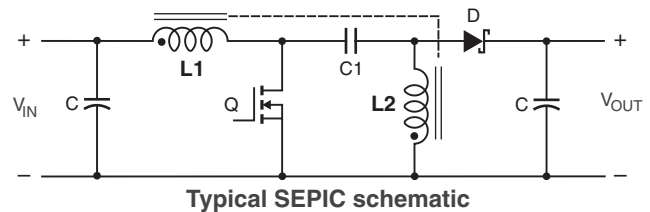
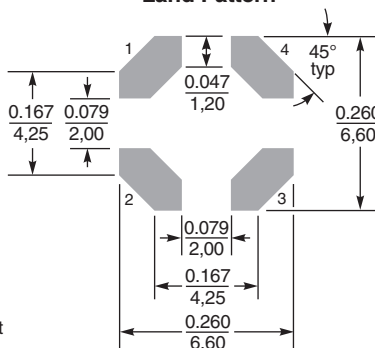
# Coupled Inductors for Critical Applications



- Only 3.5 mm high and 6 mm square
- Tight coupling ( $k \geq 0.97$ ) makes the ML512PJD series of coupled inductors 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.

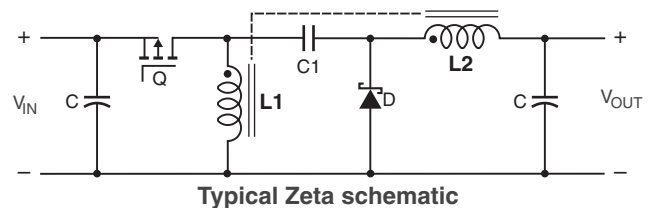


**Suggested Land Pattern**



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

# ML512PJD Series Coupled Inductors

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>±20% (µH) | DCR<br>max <sup>3</sup><br>(Ohms) | SRF<br>typ <sup>4</sup><br>(MHz) | Coupling<br>coefficient<br>typ | Leakage <sup>5</sup><br>L typ<br>(µH) | Isat (A) <sup>6</sup> |             |             | Irms (A)                      |                             |
|--------------------------|--------------------------------------|-----------------------------------|----------------------------------|--------------------------------|---------------------------------------|-----------------------|-------------|-------------|-------------------------------|-----------------------------|
|                          |                                      |                                   |                                  |                                |                                       | 10%<br>drop           | 20%<br>drop | 30%<br>drop | both<br>windings <sup>7</sup> | one<br>winding <sup>8</sup> |
| ML512PJD682MRZ           | 6.8                                  | 0.120                             | 31                               | 0.99                           | 0.10                                  | 2.80                  | 3.00        | 3.12        | 1.40                          | 1.98                        |
| ML512PJD103MRZ           | 10                                   | 0.157                             | 26                               | 0.99                           | 0.12                                  | 2.50                  | 2.70        | 2.80        | 1.30                          | 1.83                        |
| ML512PJD223MRZ           | 22                                   | 0.300                             | 15                               | >0.99                          | 0.15                                  | 1.50                  | 1.67        | 1.73        | 0.85                          | 1.20                        |
| ML512PJD473MRZ           | 47                                   | 0.620                             | 9.7                              | >0.99                          | 0.21                                  | 0.90                  | 0.98        | 0.99        | 0.60                          | 0.85                        |
| ML512PJD104MRZ           | 100                                  | 1.20                              | 7.0                              | >0.99                          | 0.45                                  | 0.46                  | 0.50        | 0.51        | 0.40                          | 0.57                        |
| ML512PJD474MRZ           | 470                                  | 3.50                              | 3.0                              | >0.99                          | 0.61                                  | 0.18                  | 0.22        | 0.23        | 0.25                          | 0.35                        |
| ML512PJD105MRZ           | 1000                                 | 7.00                              | 1.9                              | >0.99                          | 1.05                                  | 0.12                  | 0.14        | 0.15        | 0.15                          | 0.21                        |
| ML512PJD155MRZ           | 1500                                 | 10.8                              | 1.5                              | >0.99                          | 1.70                                  | 0.10                  | 0.12        | 0.13        | 0.14                          | 0.20                        |
| ML512PJD205MRZ           | 2000                                 | 16.0                              | 1.3                              | >0.99                          | 2.10                                  | 0.08                  | 0.11        | 0.12        | 0.11                          | 0.16                        |

1. When ordering, please specify screening code:

**ML512PJD105MRZ**

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

- 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.

## 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** 400 – 480 mg

**Terminations** Matte tin over nickel over silver

**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.

Tape and reel packaging: –55°C to +80°C

**Winding to winding isolation** 100 V

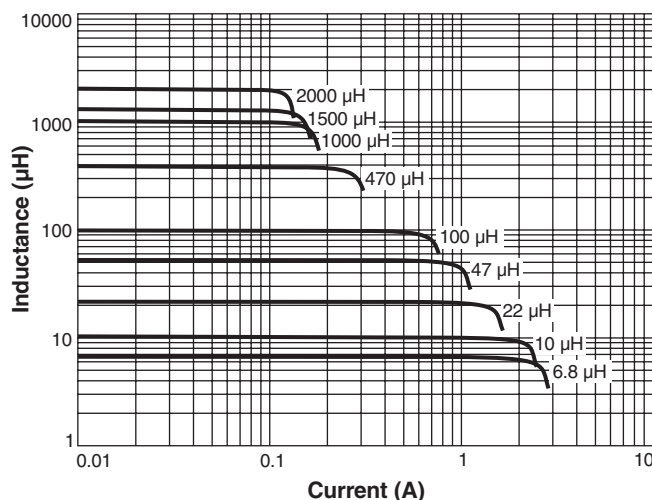
**Resistance to soldering heat** Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

**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

## L vs Current



## L vs Frequency

