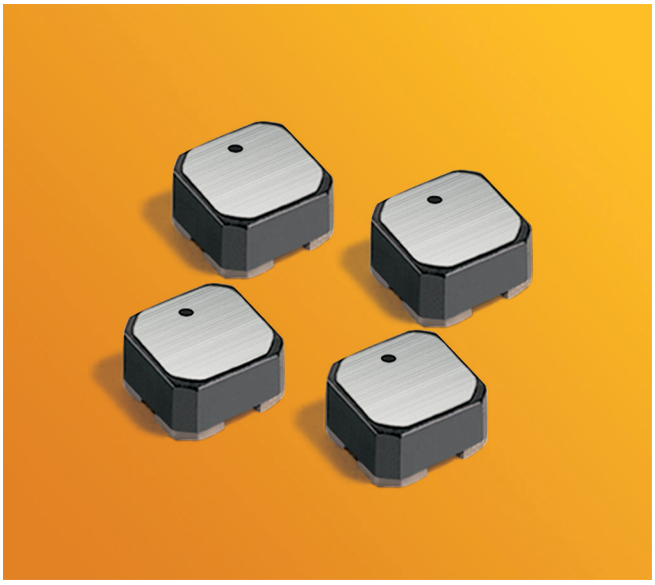
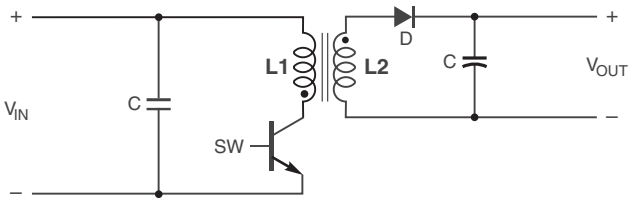
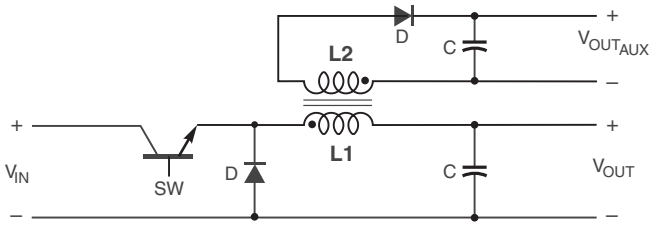
# Coupled Inductors for Critical Applications



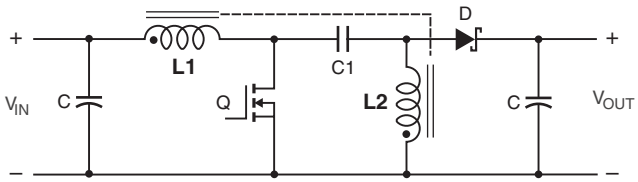
- Only 3 mm high and 5 mm square
- Ideal for use in flyback, multi-output buck and SEPIC applications.
- High inductance, high efficiency and excellent current handling
- Can also be used as two single inductors connected in series or parallel or as a common mode choke.



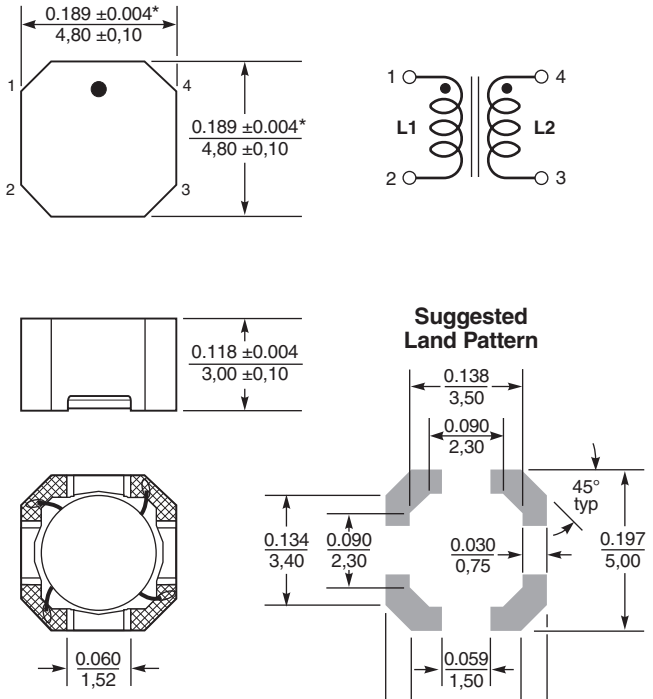

**Typical Flyback Converter**




**Typical Buck Converter with auxiliary output**




**Typical SEPIC schematic**




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

Dimensions are in inches / mm

**Core material** Ferrite
**Core and winding loss** Go to online calculator
**Weight** 210 – 300 mg
**Terminations** Silver-palladium-platinum-glass frit.
**Ambient temperature** –55°C to +105°C with Irms current,t
**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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# ML466PJD 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] |
|---|---|---|---|---|---|---|---|---|---|---|
| ML466PJD102NLZ | 1.0 ±30% | 0.042 | 153 | 0.95 | 0.09 | 4.30 | 4.49 | 4.67 | 2.20 | 3.11 |
| ML466PJD152MLZ | 1.5 ±20% | 0.048 | 118 | 0.97 | 0.09 | 3.90 | 4.20 | 4.30 | 2.05 | 2.90 |
| ML466PJD222MLZ | 2.2 ±20% | 0.067 | 87.0 | 0.98 | 0.10 | 2.80 | 2.98 | 3.07 | 1.95 | 2.76 |
| ML466PJD332MLZ | 3.3 ±20% | 0.077 | 61.0 | 0.98 | 0.10 | 2.50 | 2.70 | 2.80 | 1.70 | 2.40 |
| ML466PJD472MLZ | 4.7 ±20% | 0.111 | 49.0 | 0.99 | 0.11 | 2.10 | 2.20 | 2.20 | 1.40 | 1.98 |
| ML466PJD562MLZ | 5.6 ±20% | 0.125 | 44.0 | 0.99 | 0.11 | 1.80 | 1.80 | 1.89 | 1.35 | 1.91 |
| ML466PJD682MLZ | 6.8 ±20% | 0.159 | 40.0 | 0.99 | 0.12 | 1.40 | 1.48 | 1.48 | 1.20 | 1.70 |
| ML466PJD103MLZ | 10 ±20% | 0.210 | 28.0 | 0.99 | 0.13 | 1.20 | 1.20 | 1.20 | 1.05 | 1.48 |
| ML466PJD153MLZ | 15 ±20% | 0.298 | 23.0 | 0.99 | 0.15 | 1.00 | 1.17 | 1.17 | 0.85 | 1.20 |
| ML466PJD223MLZ | 22 ±20% | 0.452 | 17.0 | >0.99 | 0.17 | 0.89 | 0.98 | 0.98 | 0.70 | 0.99 |
| ML466PJD333MLZ | 33 ±20% | 0.565 | 16.0 | >0.99 | 0.20 | 0.73 | 0.77 | 0.78 | 0.60 | 0.85 |
| ML466PJD473MLZ | 47 ±20% | 0.806 | 12.0 | >0.99 | 0.24 | 0.59 | 0.63 | 0.65 | 0.50 | 0.71 |
| ML466PJD683MLZ | 68 ±20% | 1.13 | 9.00 | >0.99 | 0.29 | 0.50 | 0.54 | 0.55 | 0.43 | 0.61 |
| ML466PJD104MLZ | 100 ±20% | 1.79 | 8.44 | >0.99 | 0.37 | 0.47 | 0.54 | 0.56 | 0.33 | 0.47 |
| ML466PJD154MLZ | 150 ±20% | 2.43 | 6.72 | >0.99 | 0.46 | 0.38 | 0.43 | 0.45 | 0.28 | 0.40 |
| ML466PJD224MLZ | 220 ±20% | 3.30 | 5.53 | >0.99 | 0.54 | 0.31 | 0.35 | 0.36 | 0.24 | 0.34 |
| ML466PJD334MLZ | 330 ±20% | 5.36 | 4.17 | >0.99 | 0.65 | 0.25 | 0.25 | 0.32 | 0.18 | 0.25 |
| ML466PJD474MLZ | 470 ±20% | 7.51 | 3.52 | >0.99 | 0.76 | 0.21 | 0.24 | 0.26 | 0.15 | 0.21 |
| ML466PJD684MLZ | 680 ±20% | 10.8 | 2.93 | >0.99 | 0.89 | 0.17 | 0.20 | 0.21 | 0.13 | 0.18 |
| ML466PJD105MLZ | 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 **termination** and **screening** codes:

**ML466PJD105MLZ**

**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.

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.

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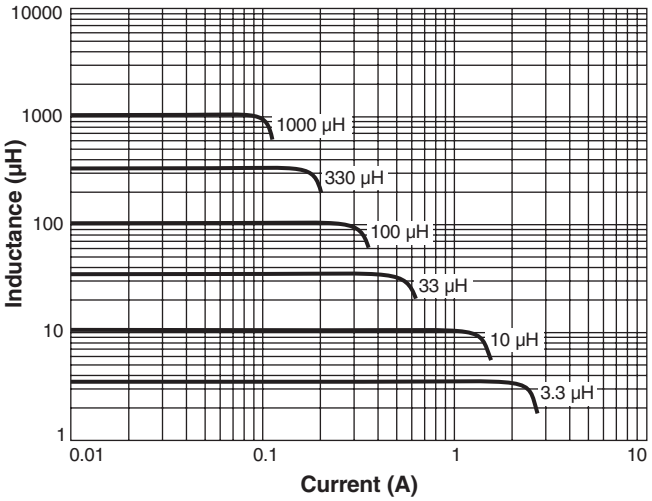
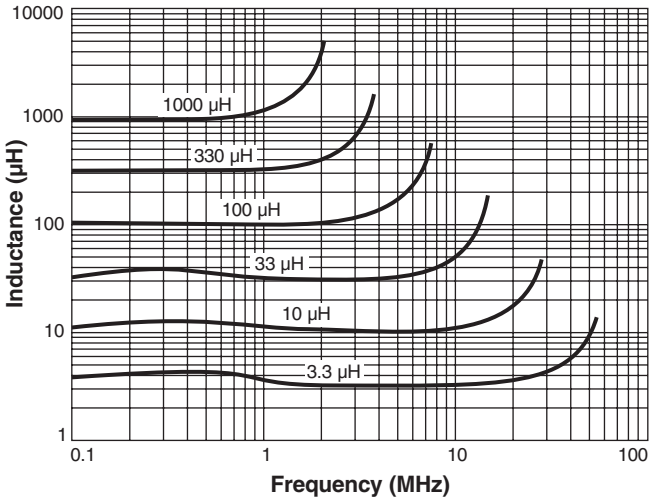
# ML466PJD Series Coupled Inductors

## Typical L vs Current




## Typical L vs Frequency

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