# Miniature Flyback Transformers for PoE

- Space efficient size: 16.5 mm square less than 7.5 mm tall
- Operates at 250 kHz with 36–72 Volts input
- 1500 Vrms, one minute isolation between primary and secondary

**Designer’s Kit C382** contains two samples of each part.

**Core material**  Ferrite

**Terminations**  RoHS tin-silver over tin over nickel over phos bronze. Other terminations available at additional cost.

**Weight**  2.6 – 2.9 g

**Ambient temperature**  -40°C to +125°C

**Storage temperature**  Component: -40°C to +125°C. Tape and reel packaging: -40°C to +80°C

**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)

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**_failures in Time (FIT) / Mean Time Between Failures (MTBF)**

- 38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

**Packaging**  400 per 13” reel Plastic tape: 32 mm wide, 0.4 mm thick, 20 mm pocket spacing, 7.69 mm pocket depth

**PCB washing**  Tested with pure water or alcohol only. For other solvents, see Doc787_PCB_Washing.pdf.

## Specifications

<table>
<thead>
<tr>
<th>Part number</th>
<th>Power (W)</th>
<th>Inductance at 0 A²</th>
<th>Inductance at Ipk³</th>
<th>DCR max (Ohms)</th>
<th>Leakage inductance max (µH)</th>
<th>Turns ratio</th>
<th>Ipk³ (A)</th>
<th>Output²</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>±10% (µH)</td>
<td>min (µH)</td>
<td>pri sec bias</td>
<td>pri/sec pri/bias</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Continuous mode</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POE60C-18L_6</td>
<td>6</td>
<td>167.0</td>
<td>150.3</td>
<td>0.303</td>
<td>0.017</td>
<td>0.570</td>
<td>7.8</td>
<td>1:0.063</td>
</tr>
<tr>
<td>POE60C-25L_6</td>
<td>6</td>
<td>177.0</td>
<td>159.3</td>
<td>0.353</td>
<td>0.027</td>
<td>0.660</td>
<td>7.0</td>
<td>1:0.083</td>
</tr>
<tr>
<td>POE60C-33L_6</td>
<td>6</td>
<td>184.0</td>
<td>165.6</td>
<td>0.286</td>
<td>0.026</td>
<td>0.515</td>
<td>4.0</td>
<td>1:0.100</td>
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<tr>
<td>POE60C-50L_6</td>
<td>6</td>
<td>193.0</td>
<td>173.7</td>
<td>0.344</td>
<td>0.043</td>
<td>0.660</td>
<td>8.0</td>
<td>1:0.143</td>
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<tr>
<td>POE60C-12L_6</td>
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<td>204.0</td>
<td>183.6</td>
<td>0.293</td>
<td>0.083</td>
<td>0.545</td>
<td>5.8</td>
<td>1:0.333</td>
</tr>
<tr>
<td><strong>Discontinuous mode</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>POE60D-18L_6</td>
<td>6</td>
<td>75.0</td>
<td>67.5</td>
<td>0.311</td>
<td>0.018</td>
<td>0.575</td>
<td>6.7</td>
<td>1:0.063</td>
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<tr>
<td>POE60D-25L_6</td>
<td>6</td>
<td>80.0</td>
<td>72.0</td>
<td>0.219</td>
<td>0.018</td>
<td>0.388</td>
<td>5.0</td>
<td>1:0.083</td>
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<tr>
<td>POE60D-33L_6</td>
<td>6</td>
<td>85.0</td>
<td>76.5</td>
<td>0.285</td>
<td>0.026</td>
<td>0.530</td>
<td>4.0</td>
<td>1:0.100</td>
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<tr>
<td>POE60D-50L_6</td>
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<td>81.0</td>
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<td>0.033</td>
<td>0.529</td>
<td>3.1</td>
<td>1:0.143</td>
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<tr>
<td>POE60D-12L_6</td>
<td>6</td>
<td>95.0</td>
<td>85.5</td>
<td>0.265</td>
<td>0.074</td>
<td>0.484</td>
<td>2.4</td>
<td>1:0.333</td>
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1. When ordering, please specify **packaging** code:
   - **POE60D-12L**

   **Packaging:**
   - D = 13” machine-ready reel. EIA-481 embossed plastic tape (400 parts per full reel).
   - B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added ($25 charge), use code letter D instead.

2. Inductance is for the primary, measured at 250 kHz, 0.5 Vrms.
3. Peak primary current drawn at minimum input voltage.
4. DCR for the primary and for the secondary are with the windings connected in parallel.
5. Leakage inductance is for the primary winding with the secondary winding shorted.
6. Turns ratios are with the primary and secondary windings connected in parallel.
7. Output of the secondary is with the windings connected in parallel. Bias winding output is 12 V, 20 mA.
8. Designed to remain in continuous mode operation at power levels of 3 Watts and above.
9. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

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- **Continuous mode**
- **Discontinuous mode**

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Dot indicates pin 1

Dimensions are in inches

Recommended Land Pattern

- Dimensions are in inches and mm.
- This product may not be used in medical or high-risk applications without prior Coilcraft approval.
- Specification subject to change without notice. Please check web site for latest information.