Flyback Transformers

For 3 Watt, 7 Watt and 13 Watt PoE Applications

- Flyback transformers for PoE applications
- Designed to operate in continuous mode at 250 kHz with an input of 36–72 Vdc
- 1500 Vrms, one minute isolation from primary and bias to secondary; 500 Vrms, 1 minute isolation between all other windings

**Designer's Kit** C395 contains two of each part shown in bold

**Core material** Ferrite

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

**Weight** POE13P: 6.15 g; POE70P: 3.85 g; POE30P: 2.05 g

**Ambient temperature** –40°C to +85°C

**Storage temperature** Component: –40°C to +85°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)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)** 38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf

---

<table>
<thead>
<tr>
<th>Part number</th>
<th>Power (W)</th>
<th>Inductance at 0 A² ±10% (µH)</th>
<th>Inductance at Ipk [µH]</th>
<th>DCR max (Ohms)</th>
<th>Leaking inductance max (µH)</th>
<th>Turns ratio</th>
<th>Ipk (A)</th>
<th>Output (V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>POE30P-33L</td>
<td>3</td>
<td>310</td>
<td>279.0</td>
<td>1.02</td>
<td>2.01</td>
<td>0.066</td>
<td>4.75</td>
<td>0.3</td>
</tr>
<tr>
<td>POE30P-50L</td>
<td>3</td>
<td>310</td>
<td>279.0</td>
<td>1.02</td>
<td>2.01</td>
<td>0.118</td>
<td>4.50</td>
<td>0.3</td>
</tr>
<tr>
<td>POE30P-12L</td>
<td>7</td>
<td>155</td>
<td>139.5</td>
<td>0.414</td>
<td>0.822</td>
<td>0.036</td>
<td>4.00</td>
<td>0.65</td>
</tr>
<tr>
<td>POE70P-33L</td>
<td>7</td>
<td>155</td>
<td>139.5</td>
<td>0.414</td>
<td>0.822</td>
<td>0.060</td>
<td>3.60</td>
<td>0.65</td>
</tr>
<tr>
<td>POE70P-50L</td>
<td>7</td>
<td>155</td>
<td>139.5</td>
<td>0.414</td>
<td>0.822</td>
<td>0.343</td>
<td>3.25</td>
<td>0.65</td>
</tr>
<tr>
<td>POE70P-12L</td>
<td>7</td>
<td>155</td>
<td>139.5</td>
<td>0.414</td>
<td>0.822</td>
<td>0.343</td>
<td>3.25</td>
<td>0.65</td>
</tr>
<tr>
<td>POE13P-33L</td>
<td>13</td>
<td>127</td>
<td>114.3</td>
<td>0.255</td>
<td>0.310</td>
<td>0.024</td>
<td>1.25</td>
<td>1.0</td>
</tr>
<tr>
<td>POE13P-50L</td>
<td>13</td>
<td>127</td>
<td>114.3</td>
<td>0.222</td>
<td>0.348</td>
<td>0.039</td>
<td>0.950</td>
<td>1.0</td>
</tr>
<tr>
<td>POE13P-12L</td>
<td>13</td>
<td>127</td>
<td>114.3</td>
<td>0.199</td>
<td>0.308</td>
<td>0.065</td>
<td>0.650</td>
<td>1.0</td>
</tr>
<tr>
<td>POE13P-19L</td>
<td>13</td>
<td>127</td>
<td>114.3</td>
<td>0.290</td>
<td>0.355</td>
<td>0.066</td>
<td>0.800</td>
<td>1.0</td>
</tr>
<tr>
<td>POE13P-24L</td>
<td>13</td>
<td>127</td>
<td>114.3</td>
<td>0.255</td>
<td>0.315</td>
<td>0.067</td>
<td>0.600</td>
<td>1.0</td>
</tr>
</tbody>
</table>

1. When ordering, please specify packaging code:

   **POE30P-12LD**

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

2. Inductance is for the primary, measured at 250 kHz, 0.1 Vrms, 0 Adc.
3. Ipk is peak primary current drawn at minimum input voltage.
4. DCR for the secondary is per winding.
5. Leakage inductance measured between pins 3 and 4 with all other pins shorted.
6. Turns ratio is with the 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. Electrical specifications at 25°C.

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

---

**Schematics**

POE13P  

POE70P, POE30P  

Secondary windings to be connected in parallel on PC board

---

**Coilcraft**

www.coilcraft.com

US +1-847-639-6400 sales@coilcraft.com  
UK +44-1236-730595 sales@coilcraft-europe.com  
Taiwan +886-2-2264 3646 sales@coilcraft.com.tw  
China +86-21-6218 8074 sales@coilcraft.com.cn  
Singapore + 65-6484 8412 sales@coilcraft.com.sg

Document 460-1 Revised 01/03/17

© Coilcraft Inc. 2019

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.
Flyback Transformers for PoE

POE13P

Packaging 175 per 13” reel
Plastic tape: 32 mm wide, 0.5 mm thick,
28 mm pocket spacing, 12.93 mm pocket depth

Parts manufactured prior to April, 2012 may be marked differently.

POE70P

Packaging 200 per 13” reel
Plastic tape: 32 mm wide, 0.5 mm thick,
24 mm pocket spacing, 11.2 mm pocket depth

POE30P

Packaging 350 per 13” reel
Plastic tape: 32 mm wide, 0.45 mm thick, 20 mm pocket spacing, 9.35 mm pocket depth

Dimensions are in inches/mm