120 W PoE Planar Transformers

For Active Clamp Forward Topology

- Designed for active clamp forward topology
- Operates at 200 kHz, with 36 – 72 Volt input
- High efficiency; excellent DCR; very low leakage inductance
- Isolation: 1500 Vrms one minute primary and aux to secondary.
- Provides 0.009" (0.229 mm) clearance above the seating plane
- Includes a 12-Volt auxiliary winding

Core material: Ferrite
Terminations: Matte tin over nickel over brass.
Weight: 11.1 – 11.9 g
Ambient temperature: -40°C to +125°C
Maximum part temperature: +165°C (ambient + temp rise)
Storage temperature: Component: -40°C to +125°C.
Tray or 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
Packaging: 36 per tray (standard). Optional tape and reel (additional cost). Factory order only, not stocked.


Inductance is for the primary, measured at 200 kHz, 0.5 Vrms, 0 Adc.
Leakage inductance is for the primary and is measured with the secondary winding shorted.
Electrical specifications at 25°C.
Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

<table>
<thead>
<tr>
<th>Part number</th>
<th>Inductance±20% (µH)</th>
<th>DCR max (mOhms) pri : sec : aux</th>
<th>Leakage inductance max (µH)</th>
<th>Turns ratio pri : sec : aux</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>POE120PL-33L_</td>
<td>50</td>
<td>27.6 : 1.26 : 270</td>
<td>0.70</td>
<td>6 : 1 : 3.5</td>
<td>3.3 V, 36 A</td>
</tr>
<tr>
<td>POE120PL-50L_</td>
<td>50</td>
<td>18.9 : 1.26 : 123</td>
<td>0.31</td>
<td>4 : 1 : 2.5</td>
<td>5.0 V, 24 A</td>
</tr>
<tr>
<td>POE120PL-12L_</td>
<td>50</td>
<td>18.9 : 6.80 : 58.5</td>
<td>0.37</td>
<td>2 : 1 : 1</td>
<td>12 V, 10 A</td>
</tr>
<tr>
<td>POE120PL-24L_</td>
<td>50</td>
<td>18.9 : 13.6 : 58.5</td>
<td>0.39</td>
<td>1 : 1 : 0.5</td>
<td>24 V, 5 A</td>
</tr>
</tbody>
</table>

1. When ordering, please specify packaging code:

POE120PL-24LD
Packaging: Blank In trays, 36 per tray
D = Optional tape and reel (additional cost), 13” machine-ready reel. EIA-481 embossed plastic tape. See tape and reel specifications on page 2. Factory order only, not stocked. Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).
B = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from B to D.

2. Inductance is for the primary, measured at 200 kHz, 0.5 Vrms, 0 Adc.
3. Leakage inductance is for the primary and is measured with the secondary winding shorted.
4. Electrical specifications at 25°C.
Refer to Doc 362 “Soldering Surface Mount Components” before soldering.
120 W Planar Transformers for PoE – POE120PL

**Recommended Land Pattern**

Dot indicates pin 1

- **Dash Height max (inches / mm)**
  - -12L: 0.352 / 8.93
  - -24L: 0.380 / 9.64
  - -33L: 0.407 / 10.34
  - -50L: 0.375 / 9.53

**Optional tape and reel packaging (additional cost)**. Factory order only, not stocked.

- **POE120PL-12**: 250/13" reel
  - Plastic tape: 44 mm wide, 0.5 mm thick, 32 mm pocket spacing, 9.40 mm pocket depth

- **POE120PL-24**: 200/13" reel
  - Plastic tape: 44 mm wide, 0.5 mm thick, 28 mm pocket spacing, 9.98 mm pocket depth

- **POE120PL-33**: 200/13" reel
  - Plastic tape: 44 mm wide, 0.5 mm thick, 28 mm pocket spacing, 10.68 mm pocket depth

- **POE120PL-50**: 250/13" reel
  - Plastic tape: 44 mm wide, 0.5 mm thick, 32 mm pocket spacing, 9.78 mm pocket depth

Dimensions are in inches / mm.