# 120W 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 refloows 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** 36 per tray (standard). Optional tape and reel (additional cost). Factory order only, not stocked.  
**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).

### Specifications

<table>
<thead>
<tr>
<th>Part number1</th>
<th>Inductance2 ±20% (µH)</th>
<th>DCR max (mOhms) pri : sec : aux</th>
<th>Leakage inductance3 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-24L.D  
   - 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.

---

[Doc787_PCB_Washing.pdf](#)
120 W Planar Transformers for PoE – POE120PL

Dash Height max (inches / mm)
-12L 0.352 / 8.94
-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, 28 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, 28 mm pocket spacing, 9.78 mm pocket depth

Dimensions are in inches / mm