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  Femtite
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 refows at +260°C, parts cooled to room temperature before 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.

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

<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-24LĐ

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.
B = Optional tape and reel (additional cost), less than full reel. In tape, but not machine ready. To have a leader and trailer added ($25 charge), use code letter D instead. Factory order only, not stocked.

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.
NEW!

120 W Planar Transformers for PoE – POE120PL

Dash number
<table>
<thead>
<tr>
<th>Height max</th>
</tr>
</thead>
<tbody>
<tr>
<td>(inches / mm)</td>
</tr>
<tr>
<td>-12L</td>
</tr>
<tr>
<td>-24L</td>
</tr>
<tr>
<td>-33L</td>
</tr>
<tr>
<td>-50L</td>
</tr>
</tbody>
</table>

Dot indicates pin 1

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

Recommended Land Pattern

See height table

Recommended Land Pattern

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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