## SMT Planar Transformers

For Applications up to 160 Watts

### Specifications

- Rated for 160 Watts
- Designed to operate between 200 kHz and 700 kHz with a nominal 48 V input.
- High efficiency; excellent DCR; very low leakage inductance; 1500 Vrms, one minute primary to secondary isolation.
- Provides 0.009” (0.229 mm) clearance above the seating plane.
- May be special ordered with an auxiliary winding.

**Core material:** Ferrite  
**Terminations:** Matte tin over nickel over brass  
**Weight:** 12.0 – 12.8 g

**Ambient temperature:** –40°C to +125°C  
**Storage temperature:** Component: –40°C to +125°C. Tray 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 in trays, 36 per tray

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

### Electrical Specifications

#### Primary Leakage Inductance

<table>
<thead>
<tr>
<th>Part number</th>
<th>Primary turns</th>
<th>Primary inductance $I_1$</th>
<th>Leakage inductance $I_2$</th>
<th>DCR max (mOhms)</th>
<th>Volt-time product typ</th>
<th>Height max (in/mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL160-100L</td>
<td>4</td>
<td>246</td>
<td>0.35</td>
<td>14.7</td>
<td>150</td>
<td>0.352 / 8.94</td>
</tr>
<tr>
<td>PL160-101L</td>
<td>4</td>
<td>312</td>
<td>0.40</td>
<td>18.5</td>
<td>168</td>
<td>0.352 / 8.94</td>
</tr>
<tr>
<td>PL160-102L</td>
<td>5</td>
<td>378</td>
<td>0.45</td>
<td>18.5</td>
<td>187</td>
<td>0.360 / 9.14</td>
</tr>
<tr>
<td>PL160-103L</td>
<td>5</td>
<td>449</td>
<td>0.55</td>
<td>21.5</td>
<td>206</td>
<td>0.375 / 9.53</td>
</tr>
<tr>
<td>PL160-104L</td>
<td>6</td>
<td>534</td>
<td>0.55</td>
<td>21.5</td>
<td>224</td>
<td>0.375 / 9.53</td>
</tr>
</tbody>
</table>

1. When ordering, please specify **packaging** code: 

   **PL160-104LD**  
   **Packaging:** Blank in trays, 36 per tray  
   **D** = Optional tape and reel (additional cost). Factory order only, not stocked.  
   13” machine-ready reel. EIA-481 embossed plastic tape. 250/13” reel Plastic tape: 44 mm wide, 0.5 mm thick, 32 mm pocket spacing, 9.78 mm pocket depth. Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).  
   To order a transformer with an optional auxiliary winding, add an “X” and the turn count after the PL160, e.g. PL160X3-100LB. Turn counts of 2, 3, 4, 5, 7 and 9 are available for the auxiliary winding. Transformers with auxiliary windings are not stocked.

2. Inductance measured on an Agilent/HP 4284 at 200 kHz, 0.5 Vrms, 0 Adc between pins 2 and 5 with pins 3 and 4 connected.

3. Leakage inductance measured at 200 kHz, 0.5 Vrms, 0 Adc between pins 2 and 5, with pins 3 and 4 connected, and with all secondary pins shorted.

4. DCR for secondary is measured between pins 7 and 11.

5. Volt-time product is based on primary windings connected in series.

6. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.
PL160 Series SMT Planar Transformers

Dash number | Height max (inches / mm)
--- | ---
-100L | 0.325 / 8.26
-101L | 0.352 / 8.94
-102L | 0.366 / 9.26
-103L | 0.375 / 9.53
-104L | 0.375 / 9.53

Dimensions are in inches / mm

Recommended Land Pattern

Dot indicates pin 1