PLN Series – Planar Transformers

Features
- DC-DC transformer: 48 to 70 watts
- Forward converter topology
- Low leakage inductance
- Low profile component
- Surface mount
- Operating temperature: -40 °C to +125 °C
- RoHS compliant*

Applications
- PoE applications
- Industrial power systems
- Switched-Mode Power Supplies (SMPS)
- LED lighting
- Battery Management Systems

General Specifications

Operating Temperature: -40 °C to +125 °C (Temperature Rise Included)
Storage Temperature with Packaging: -40 °C to +85 °C
Transformer Input Voltage: 33-57 VDC
Switching Frequency: 250 kHz
Volt-Time: 81.6 (V-µsec.)
Moisture Sensitivity Level: 1

Electrical Specifications @ 25 °C

<table>
<thead>
<tr>
<th>Bourns Part Number</th>
<th>Primary Inductance(^1) (µH)</th>
<th>Leakage Inductance(^2) (µH) max.</th>
<th>DCR max. (mΩ)</th>
<th>Turns ratio ± 3 %</th>
<th>Main Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLN048-ED21A12S</td>
<td>90</td>
<td>0.290</td>
<td>80 26 210</td>
<td>1.33 : 1 1.6 : 1</td>
<td>12 V / 4 A</td>
</tr>
<tr>
<td>PLN050-ED21A05S</td>
<td>153</td>
<td>0.400</td>
<td>90 4.7 150</td>
<td>1.6 : 1 4 : 1</td>
<td>1750 VDC</td>
</tr>
<tr>
<td>PLN070-ED21A05S</td>
<td>150</td>
<td>0.600</td>
<td>78 1.7 140</td>
<td>1.6 : 1 4 : 1</td>
<td>5 V / 10 A</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5 V / 14 A</td>
</tr>
</tbody>
</table>

Notes:
1. Primary inductance measured from (1,2-3,4) @ 100 kHz, 0.1 V
2. Leakage inductance measured (1,2-3,4) w/(5-6 & 7,8,9-10,11,12) shorted @ 100 kHz, 0.1 V
3. Hi-Pot (Pri-Sec) ref. @ 3 sec. / 0.5 mA

Product Dimensions

Unless otherwise specified, all tolerances are ± 0.25 / (0.010)

Recommended Layout

*RoHS Directive 2015/863, Mar 31, 2015 and Annex. Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.
Primary windings and secondary windings to be connected in parallel on PC board.

How To Order

Model
PLN = Planar Transformer

Power Rating
048 = 48 W

Core and Size
ED21 = EED 20.9

Sub-series
A = A Series

Output Voltage
12 = 12 V

PCB type
S = SMD

Materials
Bobbin ................. PM-9630 (JT BLACK)
PCB ......................... S1150G
Tape ................. MXPI-310#
Core ......................... JPP-95
Glue ......................... S-9001
Solder ......................... M20
Terminal ......................... C5191
Packaging Specifications

150 pcs. per reel, 2 reels per carton

Dimensions:

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