

## 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

## PLN Series – Planar Transformers

### General Specifications

|   |  |
|---|--|
| Operating Temperature.....              | -40 °C to +125 °C<br>(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  |

### Additional Information

Click these links for more information:



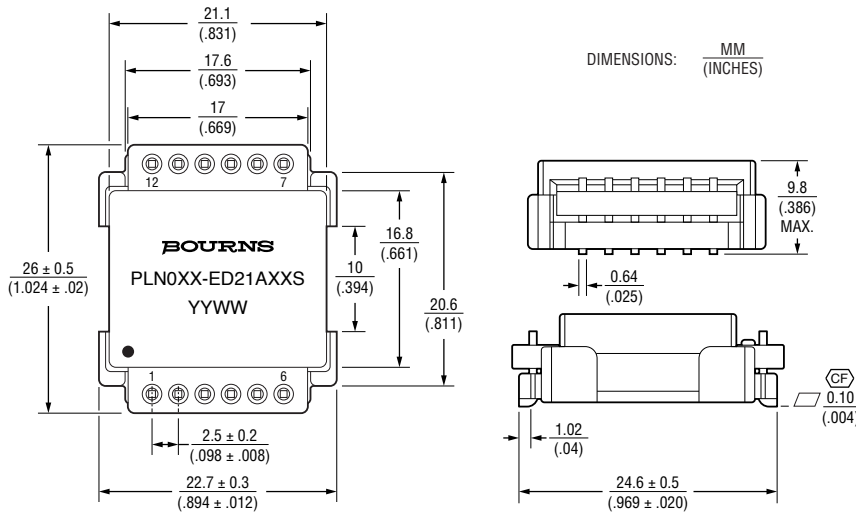
### Electrical Specifications @ 25 °C

| Bourns Part Number | Primary Inductance <sup>1</sup> (μH) | Leakage Inductance <sup>2</sup> (μH) max. | DCR max. (mΩ) |                    |       | Turns ratio ± 3 % |                             | Hi - Pot <sup>3</sup> | Main Output |
|--------------------|--------------------------------------|---|---------------|--------------------|-------|-------------------|-----------------------------|-----------------------|-------------|
|                    |                                      |   | (1,2-3,4)     | (7,8, 9-10, 11,12) | (5-6) | (1,2-3,4 : 5-6)   | (1,2-3,4 : 7,8,9-10, 11,12) |                       |             |
| PLN048-ED21A12S    | 90                                   | 0.290                                     | 80            | 26                 | 210   | 1.33 : 1          | 1.6 : 1                     | 1750 VDC              | 12 V / 4 A  |
| PLN050-ED21A05S    | 153                                  | 0.400                                     | 90            | 4.7                | 150   | 1.6 : 1           | 4 : 1                       |                       | 5 V / 10 A  |
| PLN070-ED21A05S    | 150                                  | 0.600                                     | 78            | 1.7                | 140   | 1.6 : 1           | 4 : 1                       |                       | 5 V / 14 A  |

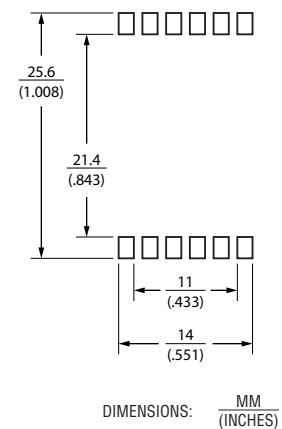
Notes:

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



### Recommended Layout



**WARNING Cancer and Reproductive Harm -**  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

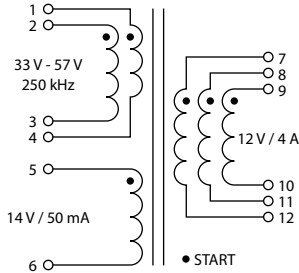
\*RoHS Directive 2015/863, Mar 31, 2015 and Annex. Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at [www.bourns.com/docs/legal/disclaimer.pdf](http://www.bourns.com/docs/legal/disclaimer.pdf).

# PLN Series – Planar Transformers

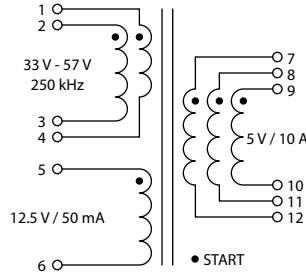


## Electrical Schematic

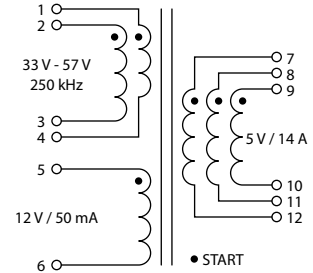
PLN048-ED21A12S



PLN050-ED21A05S



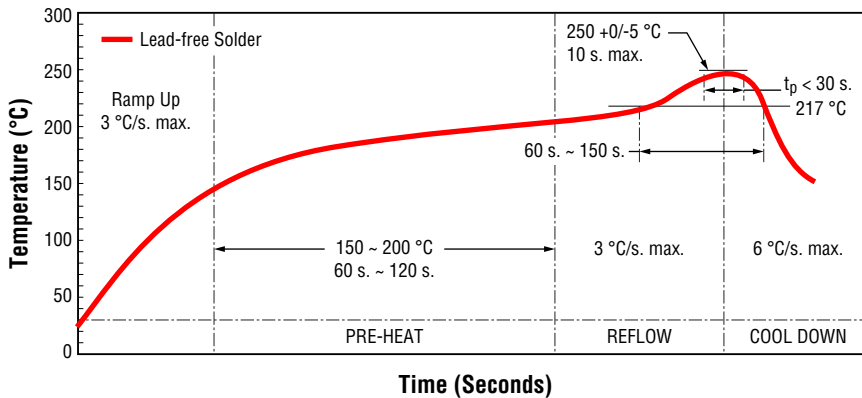
PLN070-ED21A05S



Primary windings and secondary windings to be connected in parallel on PC board.

## Soldering Profile

The duration from room temperature (25 °C) to peak temperature is 8 minutes maximum.



## How To Order

**PLN 048 - ED21 A 12 S**

|                |                          |
|----------------|--------------------------|
| 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              |

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

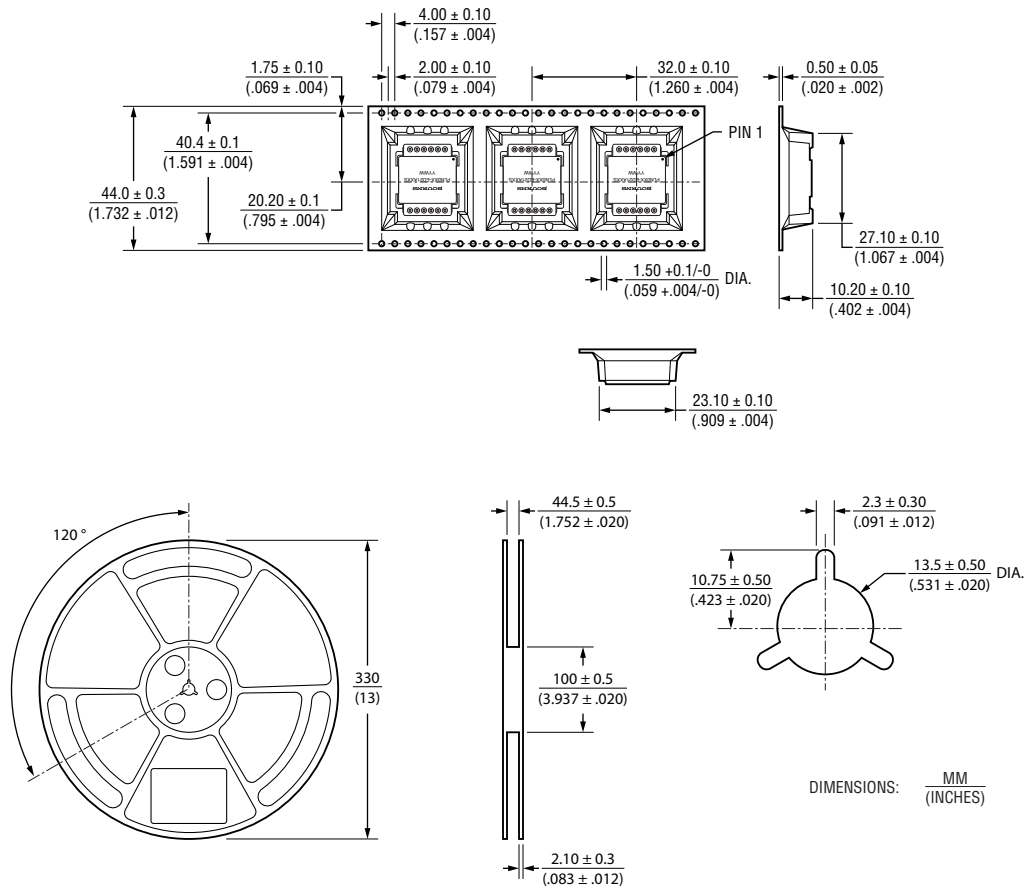
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# PLN Series – Planar Transformers

# BOURNS®

## Packaging Specifications

150 pcs. per reel, 2 reels per carton



# BOURNS®

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