

## Features

- Excellent transmission characteristics
- Compact SMT housing
- PFBR45-ST is designed for functional insulation with a working voltage of 400 VDC
- PFBR45-SP is designed for reinforced insulation with a working voltage of 400 VDC
- Designed for ST Micro 8500 PLC System-on-Chip (SoC)
- Complies with EN 62368 and EN 61885
- RoHS compliant\*

## PFBR45 Series PLC Transformer

### General Specifications

Operating Temperature (including self-temperature rise)..... -40 °C to +125 °C  
 Storage Temperature (with packaging)..... -40 °C to +85 °C  
 Moisture Sensitivity Level..... 1

### Additional Information

Click these links for more information:



### Electrical Specifications @ 25 °C

Bourns Part Number	Pri. Inductance @ 100 kHz / 1V		Leakage Inductance @ 100 kHz / 1V (All Sec. Pins Shorted)		Turns ratio		DCR Max.		Interwinding Capacitance @ 50 kHz		Hi-Pot 1 Sec / 1 mA	
	(1-4)	1 mH, +35 %, -30 %	(1-4)	1.5 μH Typ. (2 μH Max.)	(1-4):(7-5)	2:1 ±3 %	(1-4)	215 mΩ	(1,4-5,6,7,8)	30 pF Max.	(1-8) w/ (6,7) shorted	2000 Vac
PFBR45-ST13150S	(1-4)	1 mH, +35 %, -30 %	(1-4)	1.5 μH Typ. (2 μH Max.)	(1-4):(8-6)	2:1 ±3 %	(8-6)	105 mΩ				
					(1-4):(8-6)	2:1 ±3 %	(7-5)	115 mΩ				
PFBR45-SP13150S <sup>1</sup>	(9-6)	1.15 mH, ±30 %	(9-6)	1.3 μH Max.	(9-6):(1-4)	2:1 ±3 %	(9-6)	500 mΩ	(9,6-1,2,4,5)	30 pF Max.	(9-1) w/ (2,4) shorted	4500 Vac
					(9-6):(2-5)	2:1 ±3 %	(1-5) w/ (2,4) shorted	350 mΩ			(1-5)	625 Vac

<sup>1</sup> Volt-time: 11 (V-μSec)

### How To Order

**PFB R45 - ST13 150 S**

Model \_\_\_\_\_  
 PFB = PLC Transformer

Power Rating \_\_\_\_\_  
 R45 = 0.45 W

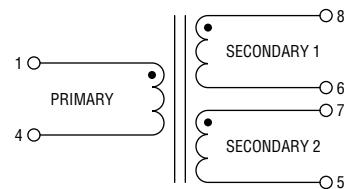
Core and Size \_\_\_\_\_  
 ST13 = Standard EP13  
 SP13 = Special EP13

Vout \_\_\_\_\_  
 150 = 15 V

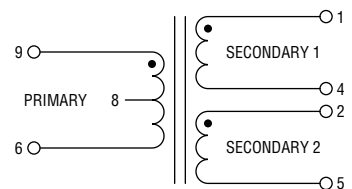
PCB type \_\_\_\_\_  
 S = SMD

### Electrical Schematic

#### PFBR45-ST13150S



#### PFBR45-SP13150S



**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.  
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## Applications

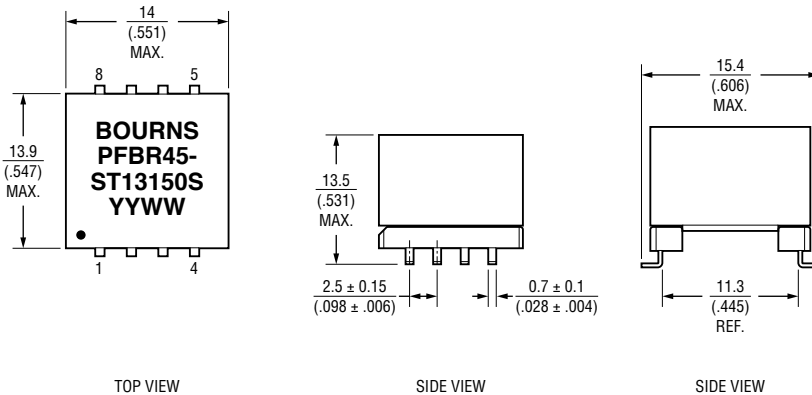
- Smart grids
- Automatic meter reading – energy, gas and water
- PC home network systems
- Street lighting systems
- Home automation systems
- CCTV cameras

## PFBR45 Series PLC Transformer

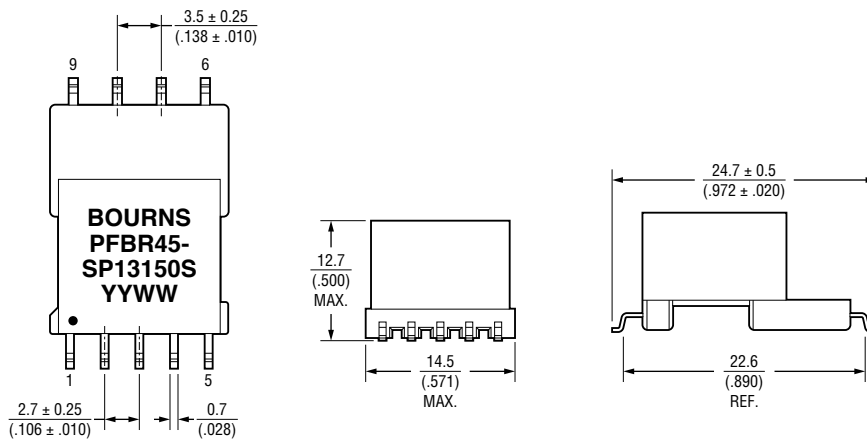
**BOURNS®**

### Product Dimensions

#### PFBR45-ST13150S



#### PFBR45-SP13150S



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

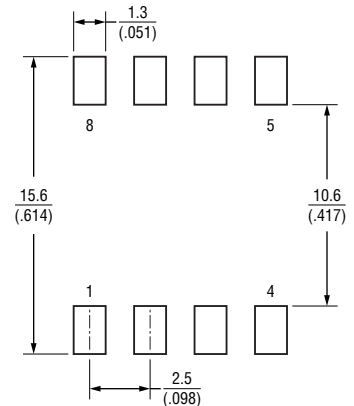
Unless otherwise specified, all tolerances are ± 0.25 / (.010)

### Materials

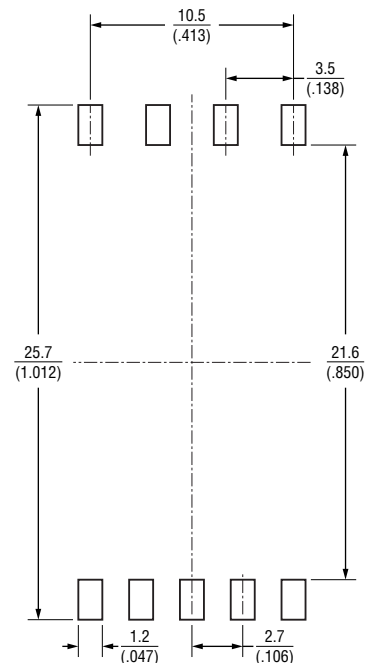
Bobbin ..... Phenolic  
 Wire ..... Copper/Insulated  
 Tape ..... Polyester film  
 Core ..... Ferrite  
 Glue ..... Epoxy  
 Terminal ..... Phosphor Bronze Tin  
 Solder ..... Sn

### Recommended Layout

#### PFBR45-ST13150S



#### PFBR45-SP13150S



DIMENSIONS:  $\frac{\text{MM}}{\text{(INCHES)}}$

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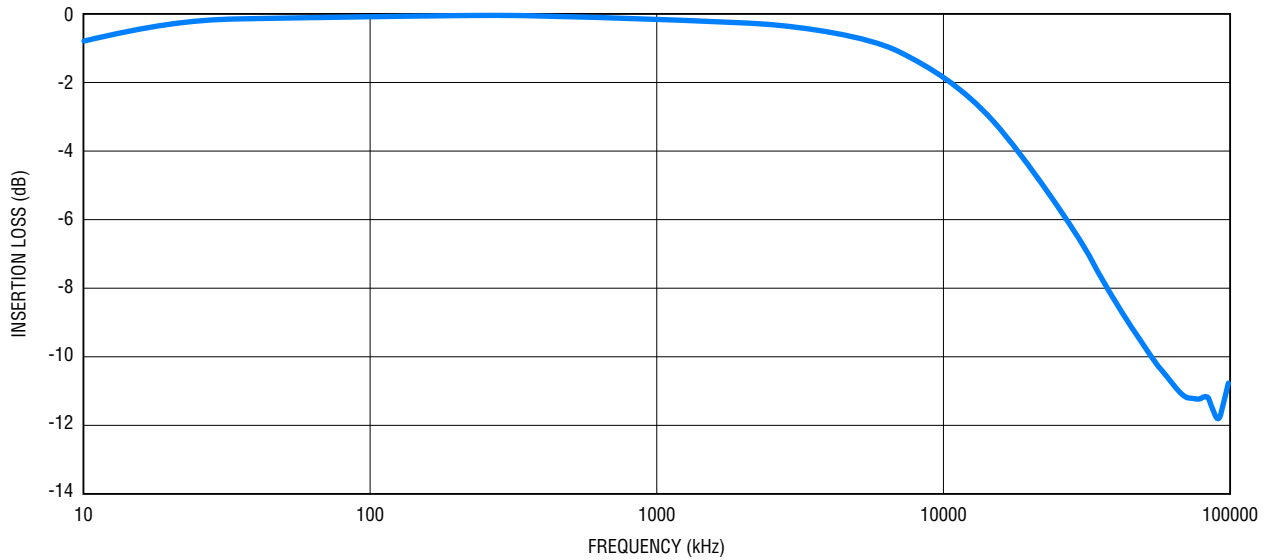
# PFBR45 Series PLC Transformer

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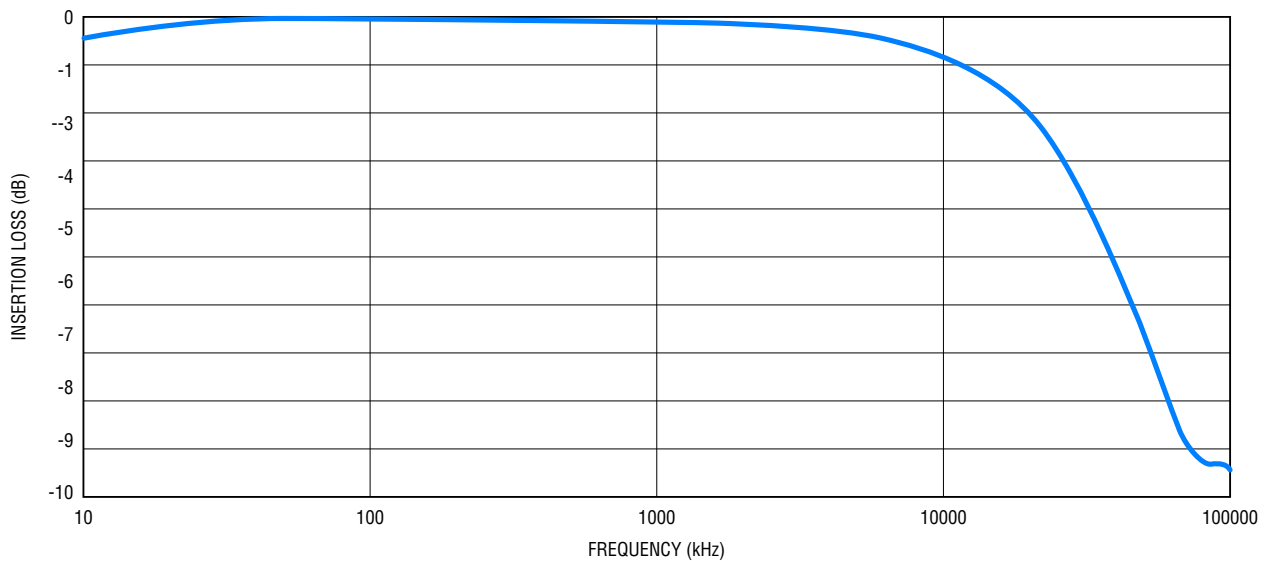
## Characteristic Curves

Typical insertion loss based on a 50 ohm system

### PFBR45-ST13150S



### PFBR45-SP13150S



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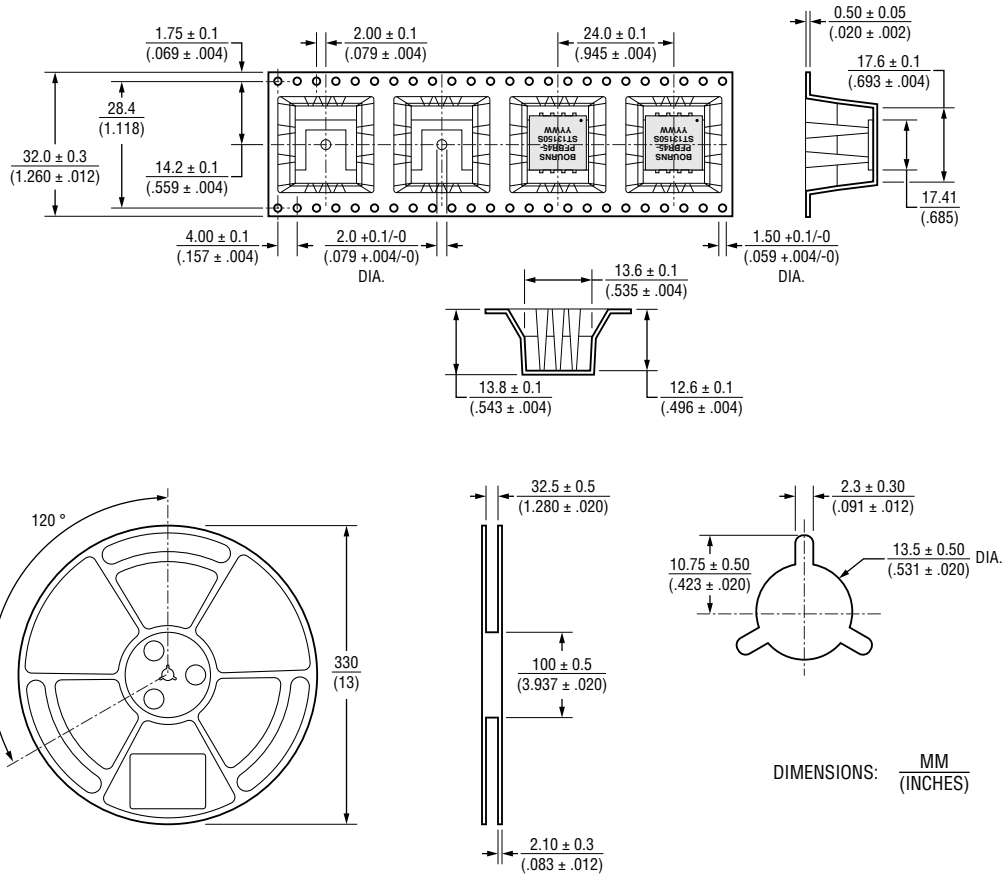
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# PFBR45 Series PLC Transformer

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## Packaging Specifications

PFBR45-ST13150S: 180 pcs/reel, 3 reels/carton



DIMENSIONS:  $\frac{MM}{(INCHES)}$

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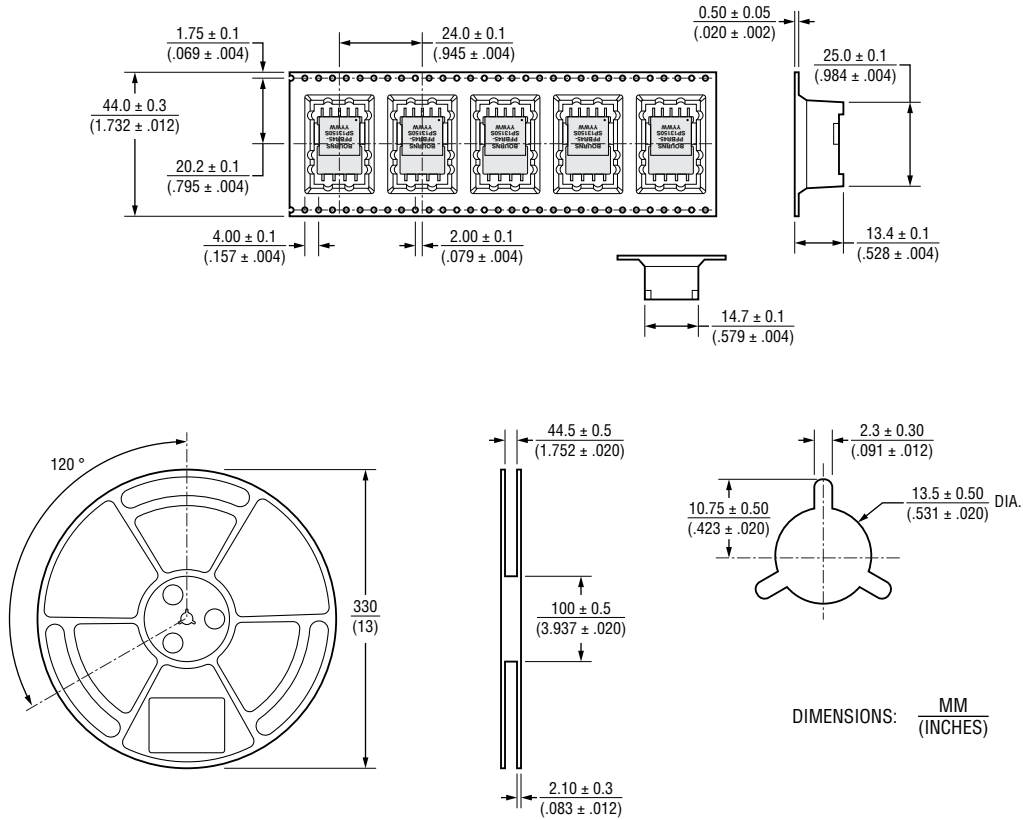
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# PFBR45 Series PLC Transformer

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## Packaging Specifications

PFBR45-SP13150S: 200 pcs/reel, 2 reels/carton



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