PFBR45 Series PLC Transformer

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*

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:
- PRODUCT
- TECHNICAL LIBRARY
- INVENTORY
- SAMPLES
- CONTACT

Electrical Specifications @ 25 °C

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

*Vol-time: 11 (V-μSec)

How To Order
Model: PFBR45 - ST13 150 S
Power Rating: 0.45 W
Core and Size: ST13 = Standard EP13, SP13 = Special EP13
Vout: 150 = 15 V
PCB type: S = SMD

WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov

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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**

**Product Dimensions**

**PFBR45-ST13150S**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>13.9</td>
<td>MAX.</td>
</tr>
<tr>
<td>Height</td>
<td>13.5</td>
<td>MAX.</td>
</tr>
<tr>
<td>Thickness</td>
<td>2.5</td>
<td>MAX.</td>
</tr>
</tbody>
</table>

**PFBR45-SP13150S**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>3.5</td>
<td>± 0.25</td>
</tr>
<tr>
<td>Height</td>
<td>12.7</td>
<td>MAX.</td>
</tr>
<tr>
<td>Thickness</td>
<td>24.7</td>
<td>± 0.5</td>
</tr>
</tbody>
</table>

Materials
- Bobbin: Phenolic
- Wire: Copper/Insulated
- Tape: Polyester film
- Core: Ferrite
- Glue: Epoxy
- Terminal: Phosphor Bronze
- Solder: Sn

**Recommended Layout**

**PFBR45-ST13150S**

**PFBR45-SP13150S**

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

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PFBR45 Series PLC Transformer

Characteristic Curves

Typical insertion loss based on a 50 ohm system

PFBR45-ST13150S

PFBR45-SP13150S

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PFBR45 Series PLC Transformer

Packaging Specifications

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

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# PFBR45 Series PLC Transformer

## Packaging Specifications

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

<table>
<thead>
<tr>
<th>Dimensions (mm)</th>
<th>Dimensions (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.75 ± 0.1</td>
<td>.069 ± .004</td>
</tr>
<tr>
<td>4.00 ± 0.1</td>
<td>.157 ± .004</td>
</tr>
<tr>
<td>2.00 ± 0.1</td>
<td>.079 ± .004</td>
</tr>
<tr>
<td>24.0 ± 0.1</td>
<td>.945 ± .004</td>
</tr>
<tr>
<td>25.0 ± 0.1</td>
<td>.984 ± .004</td>
</tr>
<tr>
<td>13.4 ± 0.1</td>
<td>.528 ± .004</td>
</tr>
<tr>
<td>20.2 ± 0.1</td>
<td>.795 ± .004</td>
</tr>
<tr>
<td>44.0 ± 0.3</td>
<td>1.732 ± .012</td>
</tr>
<tr>
<td>130 ± 0.5</td>
<td>5.118 ± .020</td>
</tr>
<tr>
<td>2.10 ± 0.3</td>
<td>.083 ± .012</td>
</tr>
</tbody>
</table>

**DIMENSIONS:** **MM**

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