



Features

- Rated current on primary up to 20 A for PCS020, up to 40 A for PCS040
- Surface mount
- Frequency up to 1 MHz
- Operating temp: -40 °C to 125 °C
- RoHS compliant*

Applications

- Switched-mode power supplies
- Motor control
- Overload sensing
- AC current applications

PCS Series Current Sense Transformers

General Specifications

| | |
|---------------------------------|---------------------------|
| Operating Temperature..... | -40 °C to +125 °C |
| Isolation Between Windings | |
| PCS020..... | 500 Vrms |
| PCS040..... | 800 Vrms |
| Rated current on primary | |
| PCS020..... | Up to 20 A (10 A typical) |
| PCS040..... | Up to 40 A |
| Frequency..... | Up to 1 MHz |
| Moisture Sensitivity Level..... | 1 |

Additional Information

Click these links for more information:



Electrical Specifications @ 25 °C

| Bourns Part Number | Turns Ratio Primary : Secondary | Secondary Inductance Min. (mH) | DCR | | Volt-time Product on Secondary Max. (V-µsec) | Terminating Resistance (1 V Output at Rated Current) (Ω) |
|--------------------|------------------------------------|--------------------------------------|----------------------|-----------------------|---|---|
| | | | Primary Ref. (mΩ) | Secondary Max. (Ω) | | |
| PCS020-EE05081S | 1 : 20 | 0.081 | 7 | 0.4 | 10.8 | 1 |
| PCS020-EE05180S | 1 : 30 | 0.18 | 7 | 0.87 | 16.2 | 1.5 |
| PCS020-EE05320S | 1 : 40 | 0.32 | 7 | 1.14 | 21.6 | 2 |
| PCS020-EE05500S | 1 : 50 | 0.5 | 7 | 1.5 | 27 | 2.5 |
| PCS020-EE05730S | 1 : 60 | 0.73 | 7 | 1.98 | 32.4 | 3 |
| PCS020-EE05980S | 1 : 70 | 0.98 | 7 | 4.75 | 37.8 | 3.5 |
| PCS020-EE0502KS | 1 : 100 | 2.0 | 7 | 5.5 | 54 | 5 |
| PCS020-EE0503KS | 1 : 125 | 3.0 | 7 | 7 | 67.5 | 6.25 |
| PCS040-EF13340S | 1 : 20 | 0.34 | 1 | 0.18 | 50.8 | 0.5 |
| PCS040-EF13760S | 1 : 30 | 0.76 | 1 | 0.265 | 76.2 | 0.8 |
| PCS040-EF1301KS | 1 : 40 | 1.36 | 1 | 0.56 | 101.6 | 1 |
| PCS040-EF1302KS | 1 : 50 | 2.12 | 1 | 0.705 | 127 | 1.3 |
| PCS040-EF1303KS | 1 : 60 | 3.06 | 1 | 0.85 | 152.4 | 1.5 |
| PCS040-EF1304KS | 1 : 70 | 4.16 | 1 | 1 | 177.8 | 1.8 |
| PCS040-EF1305KS | 1 : 80 | 5.44 | 1 | 1.15 | 203.2 | 2 |
| PCS040-EF1308KS | 1 : 100 | 8.5 | 1 | 1.45 | 254 | 2.5 |
| PCS040-EF1313KS | 1 : 125 | 13.3 | 1 | 1.85 | 317.5 | 3.1 |
| PCS040-EF1319KS | 1 : 150 | 19.2 | 1 | 2.25 | 381 | 3.8 |
| PCS040-EF1334KS | 1 : 200 | 34 | 1 | 4.06 | 508 | 5 |



WARNING Cancer and Reproductive Harm - 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.

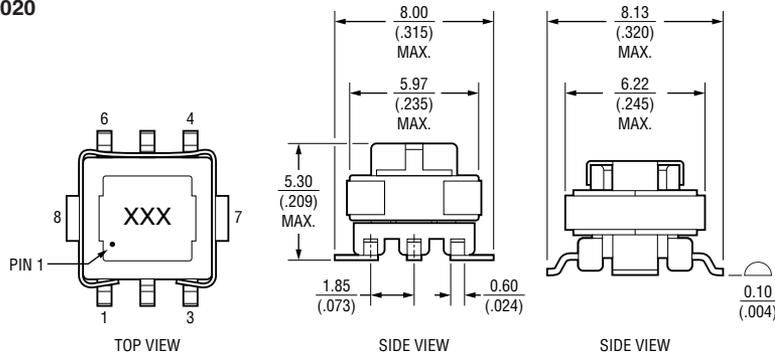
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PCS Series Current Sense Transformers

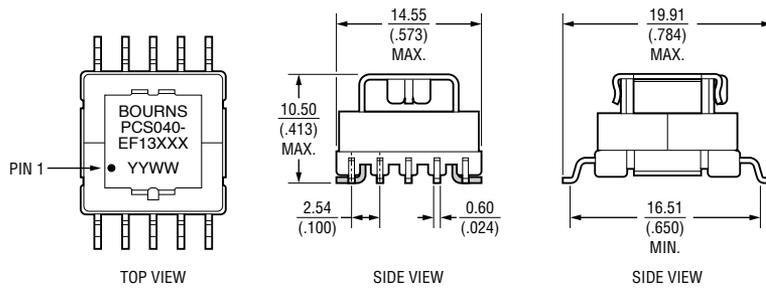


Product Dimensions

PCS020



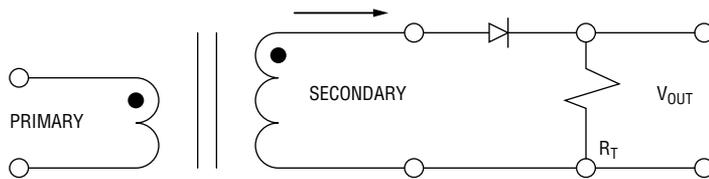
PCS040



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

Unless otherwise specified, all tolerances are $\pm 0.25 / (.010)$

Application Circuit



Terminating resistor R_T is based on 1 volt output with the rated current 20 amps for the PCS020 and 40 amps for the PCS040 through the Primary. The terminating resistor can be calculated with the following equation: $R_T = V_{out} * N_{sec} / I_{prim}$.

Materials

Core..... P4
 Bobbin PM9630
 Wire XUEW and UEWH
 Tape..... PI-310
 Glue..... S-9001
 Clip..... SUS301
 Packaging
 PCS020..... 1000 pcs. per 13-inch reel
 PCS040..... 300 pcs. per 13-inch reel

Typical Part Marking

| Bourns Part Number | Marking |
|--------------------|-----------------|
| PCS020-EE05081S | 081 |
| PCS020-EE05180S | 180 |
| PCS020-EE05320S | 320 |
| PCS020-EE05500S | 500 |
| PCS020-EE05730S | 730 |
| PCS020-EE05980S | 980 |
| PCS020-EE0502KS | 02K |
| PCS020-EE0503KS | 03K |
| PCS040-EF13340S | PCS040-EF13340S |
| PCS040-EF13760S | PCS040-EF13760S |
| PCS040-EF1301KS | PCS040-EF1301KS |
| PCS040-EF1302KS | PCS040-EF1302KS |
| PCS040-EF1303KS | PCS040-EF1303KS |
| PCS040-EF1304KS | PCS040-EF1304KS |
| PCS040-EF1305KS | PCS040-EF1305KS |
| PCS040-EF1308KS | PCS040-EF1308KS |
| PCS040-EF1313KS | PCS040-EF1313KS |
| PCS040-EF1319KS | PCS040-EF1319KS |
| PCS040-EF1334KS | PCS040-EF1334KS |

Electrical Schematic

PCS020



PCS040



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PCS Series Current Sense Transformers

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How To Order

PCS 020 - EE05 081 S

Model _____
 PCS = Current Sense Transformer

Rated Current _____
 020 = 20 A
 040 = 40 A

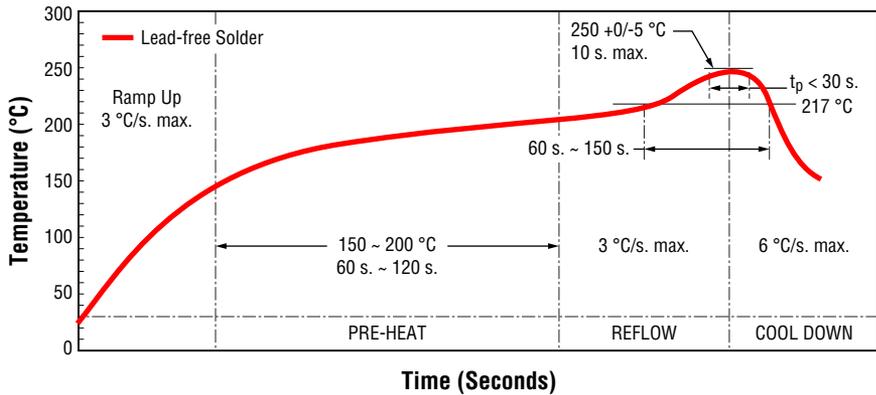
Bobbin Size _____
 EE05 = Bobbin EE5
 EF13 = Bobbin EF12.6

Inductance (see table) _____
 081 = 81 μ H

PCB type _____
 S = SMD

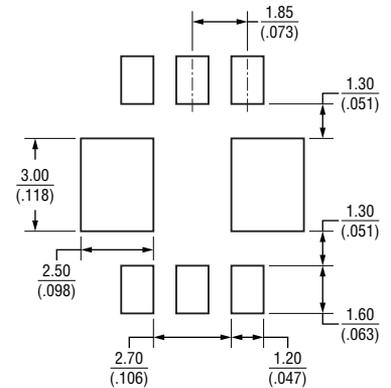
Soldering Profile

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

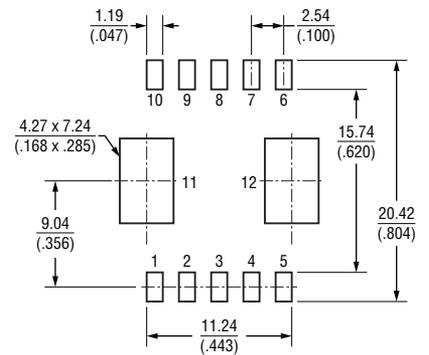


Recommended Layout

PCS020



PCS040



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

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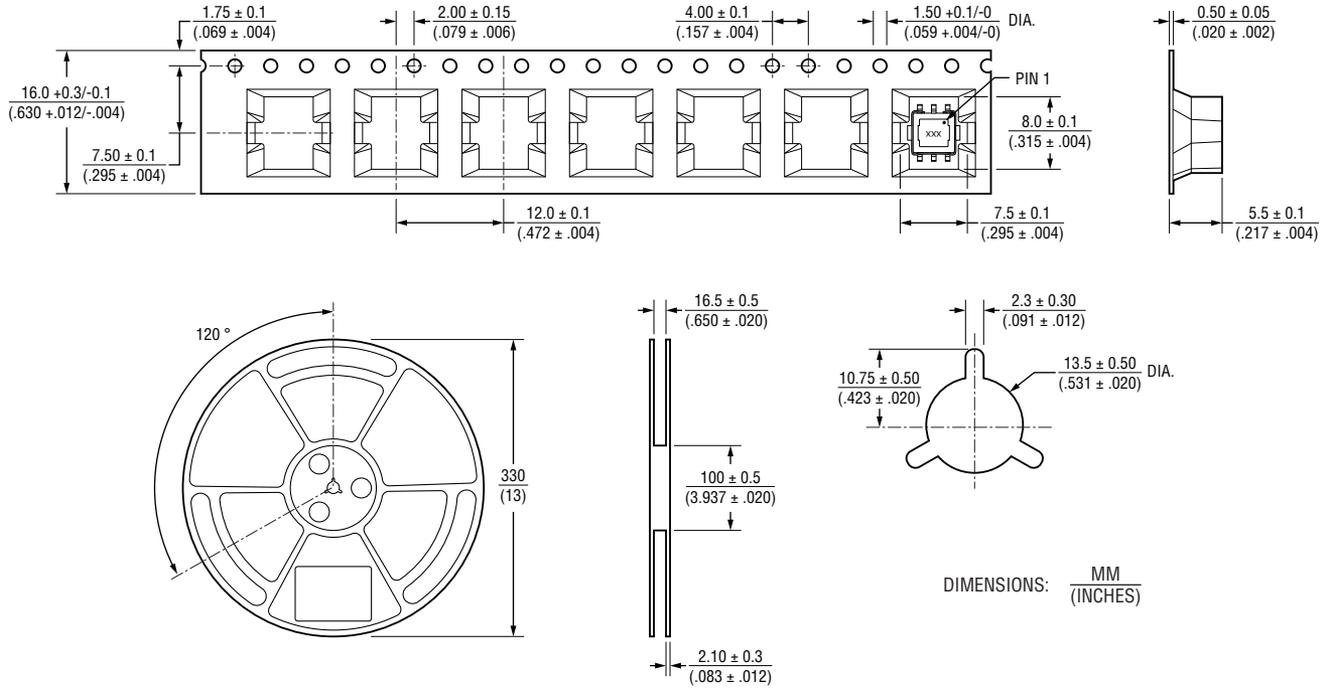
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PCS Series Current Sense Transformers

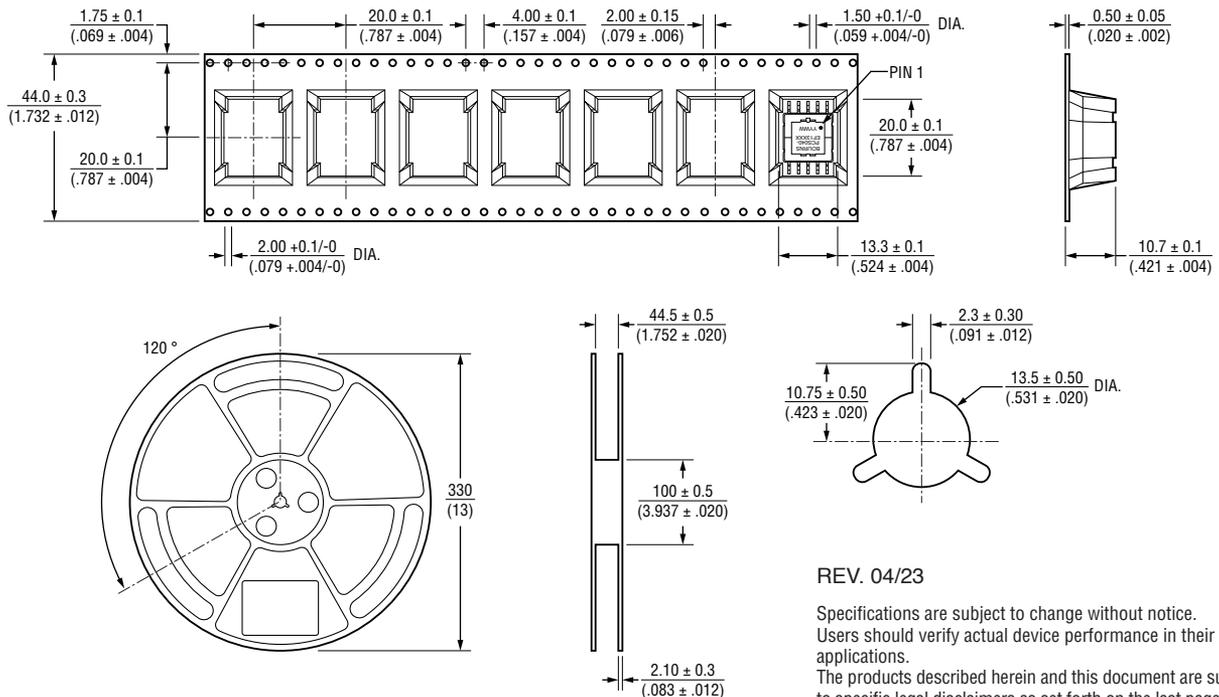
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Packaging Specifications

PCS020



PCS040



REV. 04/23

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