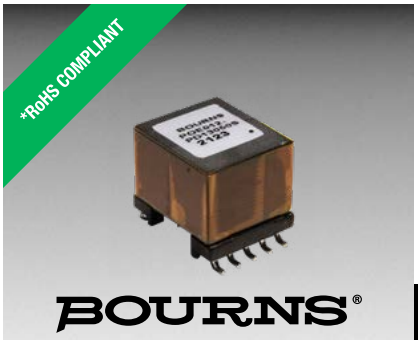


Features

- Surface mount
- Power from 12 to 72 W
- Output voltage from 3.3 to 12 V
- Operating temperature: -40 °C up to +165 °C (See General Specifications for specific ranges)
- RoHS compliant*

Applications

- VoIP phones
- WLAN APs
- Security IP cameras
- Routers
- Gateways

BOURNS®

POE-EP & POE-PD Series - PoE DC/DC Transformers

General Specifications

Hi-Pot
- POE-EP13 and POE-PD13 (Pri-Sec)..... 1500 Vac (60 Hz / 2 sec / 1 mA)
- POE012-PD13120S
  - (Pri-Sec) ..... 1500 Vac (60 Hz / 2 sec / 1 mA)
  - (Pri-Pri) ..... 500 Vac (60 Hz / 2 sec / 1 mA)
  - (Sec-Sec)..... 500 Vac (60 Hz / 2 sec / 1 mA)

Operating Temperature
- POE012-EP13033S, POE025-EP13050S, POE025-PD13120S..... -40 °C to +105 °C
- POE012-PD13050S, POE012-PD13120S, POE025-PD13050S, POE030-PD13050S..... -40 °C to +125 °C
- POE070-PD13050S, POE072-PD13120S..... -40 °C to +165 °C

Moisture Sensitivity Level.....1

Additional Information

Click these links for more information:

PRODUCT | TECHNICAL LIBRARY | INVENTORY | SAMPLES | CONTACT

Materials

Bobbin ..... PM-9630(JT BLACK)
Wire .....UEWH
Core..... Ferrite

Electrical Specifications @ 25 °C

Bourns Part Number	Primary Inductance		Leakage Inductance		DCR		Turns ratio		Input Voltage Switching Frequency	Main Output
POE012-EP13033S	(1-2) @ 100 kHz / 0.1 V	133 µH ±7 %	(1-2) w/ (3,4,6,7,10) shorted @ 250 kHz / 0.1V	1.3 µH max.	(1-2) (3-4) (6-7) (7-10)	340 mΩ max. 250 mΩ max. 150 mΩ max. 8 mΩ max,	(1-2 : 3-4) (1-2 : 7-10) (1-2 : 6-7)	2.77 ±3 % : 1 9.0 ±3 % : 1 4.5 ±3 % : 1	36 V - 57 V 200 kHz	3.3 V 3.3 A
POE025-EP13050S	(1-2) @ 100 kHz / 0.1 V	100 µH ±10 %	(1-2) w/ (4,5,6,7,9,10) shorted @ 100 kHz / 0.1 V	0.55 µH max.	(1-2) (4-5) (6,7-9,10)	114 mΩ max. 163 mΩ max. 6 mΩ max.	(1-2:4-5) (1-2:6,7-9,10)	1.82 ±3 % : 1 4 ±3 % : 1	33 V - 57 V 250 kHz	5 V 5 A
POE012-PD13050S	(1-2) @ 1 kHz / 0.5 V	150 µH ±7 %	(1-2) w/ (3,4,6,7,8,9,10) shorted @ 250 kHz / 0.5 V	1 µH max.	(1-2) (3-4) (6-7) (7,8-9,10)	166 ±20 % mΩ 166 ±20 % mΩ 68.5 ±20 % mΩ 6.3 ±20 % mΩ	(1-2:7,8-9,10) (1-2:3-4) (1-2:6-7)	6 ±3 % : 1 2.66 ±3 % : 1 6 ±3 % : 1	36 V - 57 V 200 kHz	5 V 2.4 A
POE012-PD13120S*	(3-4) @ 100 kHz / 0.1 V	127 µH ±10 %	(3-4) w/ (1,2,7,8,9,10) shorted @ 250 kHz / 0.1 V	0.65 µH max.	(3-4) (2-1) (7-9) (8-10)	170 mΩ max. 100 mΩ max. 65 mΩ max. 65 mΩ max.	(3-4:2-1) (3-4:7-9) (3-4:8-10)	2 ±3 % : 1 2 ±3 % : 1 2 ±3 % : 1	36 V - 72 V 250 kHz	12 V 1.08 A

(continued)

* Model POE-EP13 and POE-PD13: Hi-Pot for PRI-SEC is 1500 Vac (60 Hz / 2 sec / 1 mA);
  Model POE012-PD13120S: Hi-Pot for PRI-SEC: 1500 Vac, PRI-PRI: 500 Vac, SEC-SEC: 500 Vac (60 Hz / 2 sec / 1 mA)
* Operating temperature
  POE012-EP13033S, POE025-EP13050S, POE025-PD13120S: -40 °C to 105 °C
  POE012-PD13050S, POE012-PD13120S, POE025-PD13050S, POE030-PD13050S: -40 °C to 125 °C
  POE070-PD13050S, POE072-PD13120S: -40 °C to 165 °C

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

*RoHS Directive 2015/863, Mar 31, 2015 and Annex.
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Electrical Specifications @ 25 °C (continued)

Bourns Part Number	Primary Inductance		Leakage Inductance		DCR		Turns ratio		Input Voltage Switching Frequency	Main Output
POE025-PD13050S	(1-2) @ 1 kHz / 0.5 V	65 µH ±7 %	(1-2) w/ (3,4,6,7,8,9,10) shorted @ 250 kHz / 0.5 V	0.85 µH max.	(1-2) (3-4) (6-7) (7,8-9,10)	120 mΩ max. 80 mΩ max. 65 mΩ max. 5.5 mΩ max.	(1-2:7,8-9,10) (1-2:3-4) (1-2:6-7)	6 ±3 % : 1 2.57 ±3 % : 1 6 ±3 % : 1	36 V - 57 V 200 kHz	5 V 5 A
POE025-PD13120S	(1-3) @ 100 kHz / 0.1 V	80 µH ±7 %	(1-3) @ 100 kHz / 0.1 V w/ (4,5,6,7,9,10) shorted	1 µH max.	(1-3) (4-5) (7,6-10,9) w/ (6,7,9,10) shorted	140 mΩ max. 195 mΩ max. 22 mΩ max.	(1-3:4-5) (1-3:7,6-10,9) w/ (6,7,9,10) shorted	2.375 ±3 % : 1 3.166 ±3 % : 1	36 V - 57 V 220 kHz	12 V 2.1 A
POE030-PD13050S	(1-3) @ 100 kHz / 0.1 V	70 µH ±10 %	(1-3) w/ (6,7,9,10) shorted @ 100 kHz / 0.1 V	1.4 µH max.	(1-3) (4-5) (6,7-9,10) w/ (6,7,9,10) shorted	93 mΩ max. 166 mΩ max. 4.45 mΩ max.	(1-3:4-5) (1-3:6,7-9,10) w/ (6,7,9,10) shorted	3.14 ±3 % : 1 7.33 ±3% : 1	33 V - 57 V 200 kHz	5 V 6 A
POE070-PD13050S	(1-3) @ 100 kHz / 0.1 V	100 µH ±15 %	(1-3) w/ (4,5,6,7,9,10) shorted @ 100 kHz / 0.1 V	0.22 µH max.	(1-3) (1-2) (4-5) (6-9) (7-10)	33 mΩ max. 221 mΩ max. 135 mΩ max. 6.6 mΩ max. 6.6 mΩ max.	(1-3:1-2) (1-3:4-5) (1-3:6-9) (1-3:7-10)	1 ±3 % : 1 1.43 ±3 % : 1 3.33 ±3 % : 1 3.33 ±3 % : 1	41 V - 57 V 200 kHz	5 V 14 A
POE072-PD13120S	(1-3) @ 100 kHz / 0.1 V	100 µH ±12 %	(1-3) w/ (4,5,6,7,9,10) shorted @ 100 kHz / 0.1 V	0.24 µH max.	(1-3) (1-2) (4-5) (6-9) (7-10)	49 mΩ max. 240 mΩ max. 302 mΩ max. 36 mΩ max. 34 mΩ max.	(1-3:1-2) (1-3:4-5) (1-3:6-9) (1-3:7-10)	1 ±3 % : 1 1.33 ±3 % : 1 1.5 ±3 % : 1 1.5 ±3 % : 1	41 V - 57 V 200 kHz	12 V 6 A

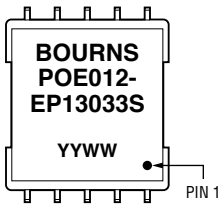
* Model POE-EP13 and POE-PD13: Hi-Pot for PRI-SEC is 1500 Vac (60 Hz / 2 sec / 1 mA);
  Model POE012-PD13120S: Hi-Pot for PRI-SEC: 1500 Vac, PRI-PRI: 500 Vac, SEC-SEC: 500 Vac (60 Hz / 2 sec / 1 mA)
* Operating temperature
  POE012-EP13033S, POE025-EP13050S, POE025-PD13120S: -40 °C to 105 °C
  POE012-PD13050S, POE012-PD13120S, POE025-PD13050S, POE030-PD13050S: -40 °C to 125 °C
  POE070-PD13050S, POE072-PD13120S: -40 °C to 165 °C

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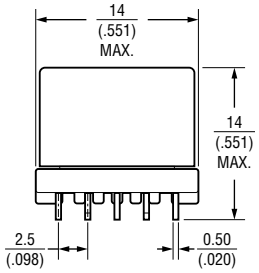
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Product Dimensions

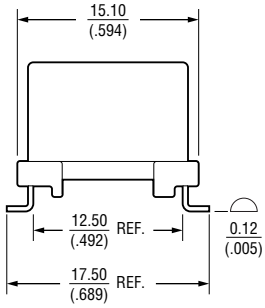
POE012-EP13033S



TOP VIEW

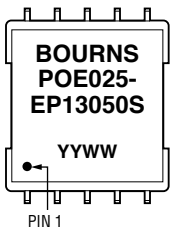


FRONT VIEW

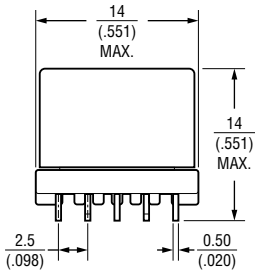


SIDE VIEW

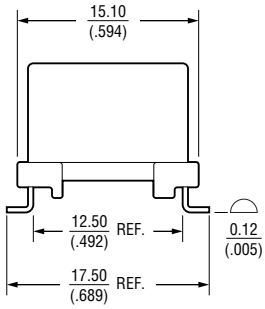
POE025-EP13050S



TOP VIEW



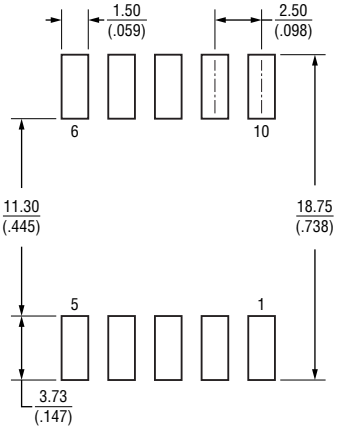
FRONT VIEW



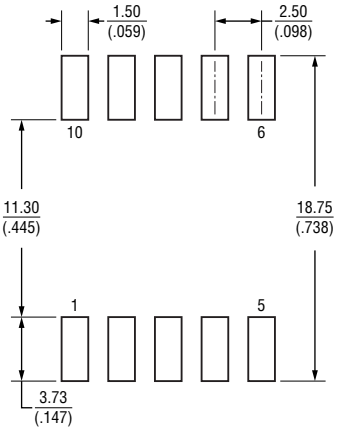
SIDE VIEW

Recommended Layout

POE012-EP13033S



POE025-EP13050S

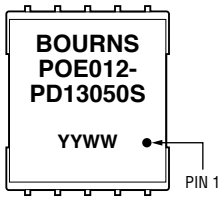


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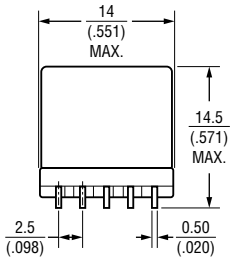
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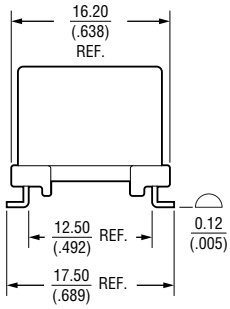
POE012-PD13050S
POE012-PD13120S
POE025-PD13050S
POE070-PD13050S
POE072-PD13120S



TOP VIEW

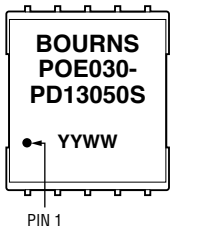


FRONT VIEW

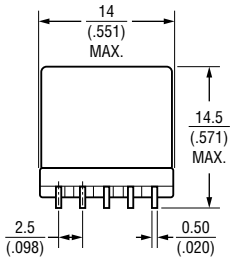


SIDE VIEW

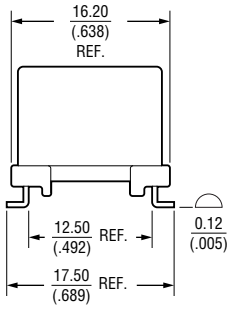
POE025-PD13120S
POE030-PD13050S



TOP VIEW



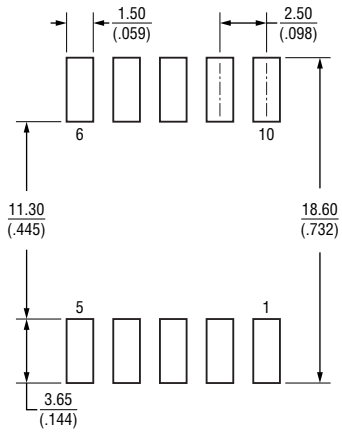
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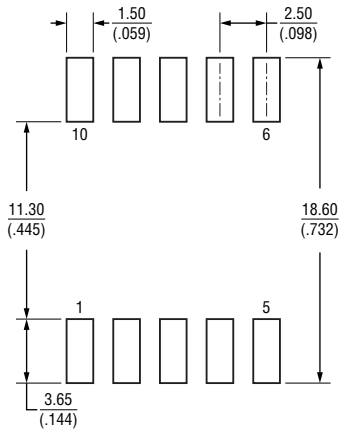
SIDE VIEW

Recommended Layout

POE012-PD13050S
POE012-PD13120S
POE025-PD13050S
POE070-PD13050S
POE072-PD13120S



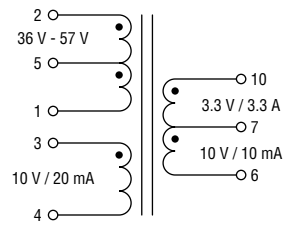
POE025-PD13120S
POE030-PD13050S



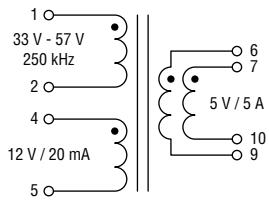
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Electrical Schematic

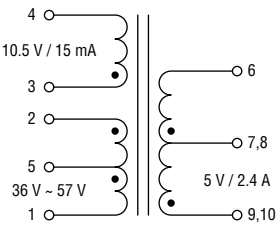
POE012-EP13033S



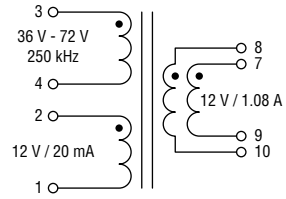
POE025-EP13050S



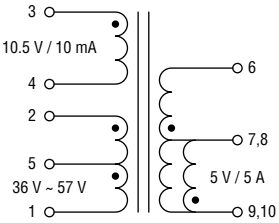
POE012-PD13050S



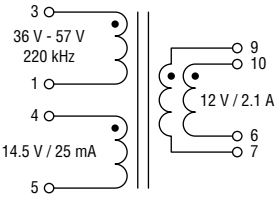
POE012-PD13120S



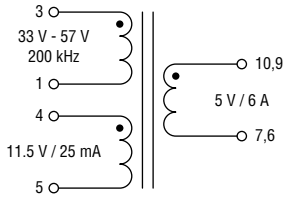
POE025-PD13050S



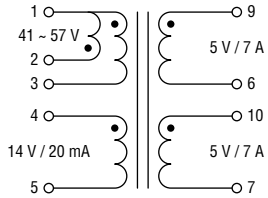
POE025-PD13120S



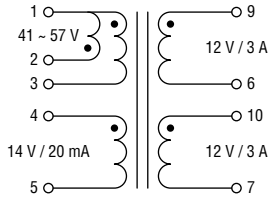
POE030-PD13050S



POE070-PD13050S



POE072-PD13120S



Secondary winding to be connected in parallel on PC board.

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How To Order

POE 012 - PD13 050 S

Model
POE = POE Transformer

Power Rating
012 = 12 W

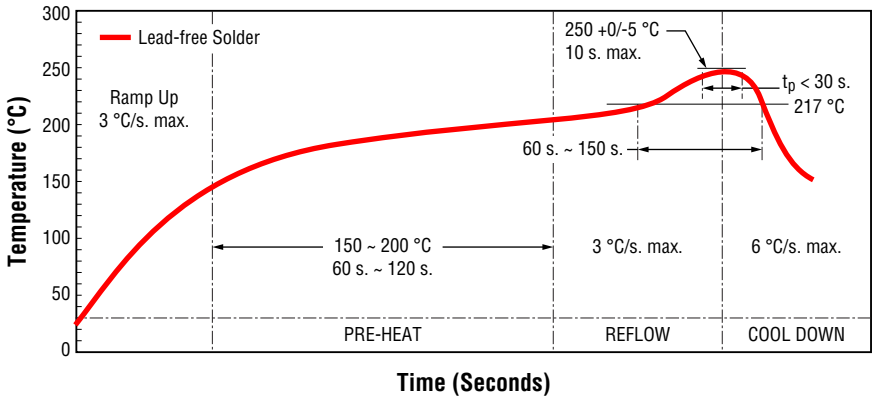
Core and Size
EP13 = EP13
PD13 = EPD13

V_{out}
050 = 5 V

PCB type
S = SMD

Soldering Profile

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

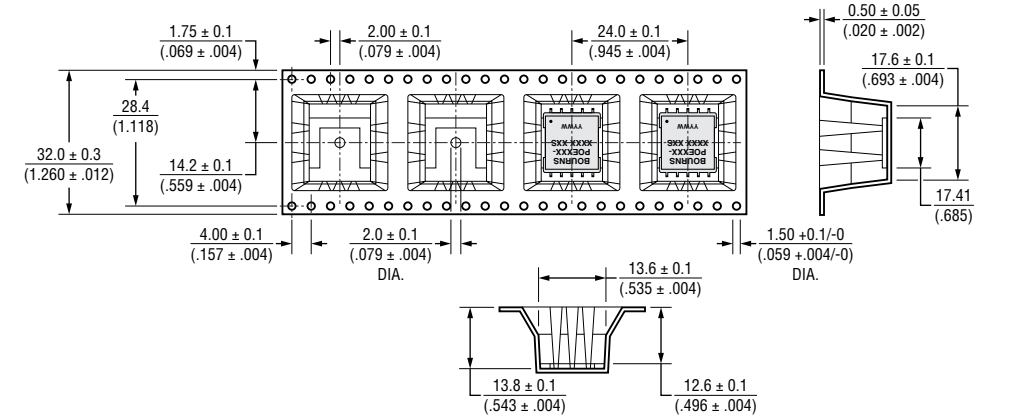


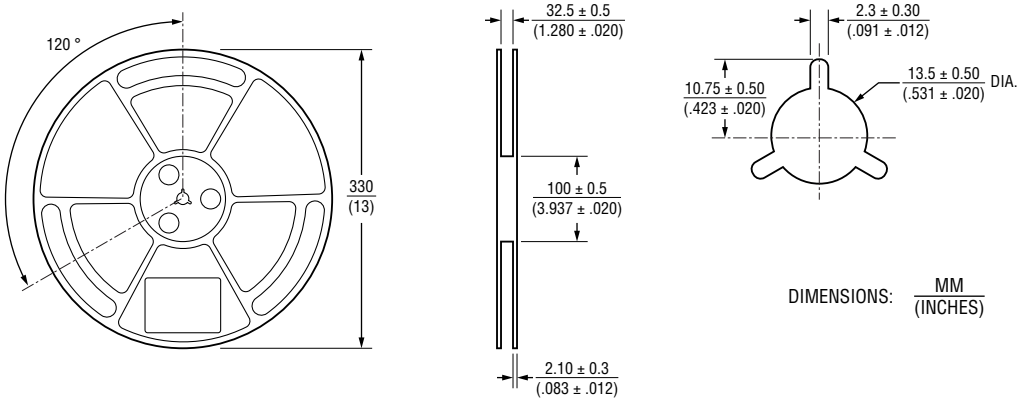
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Packaging Specifications

POE-EP Series: 180 pcs./reel, 3 reels/carton, 540 pcs.



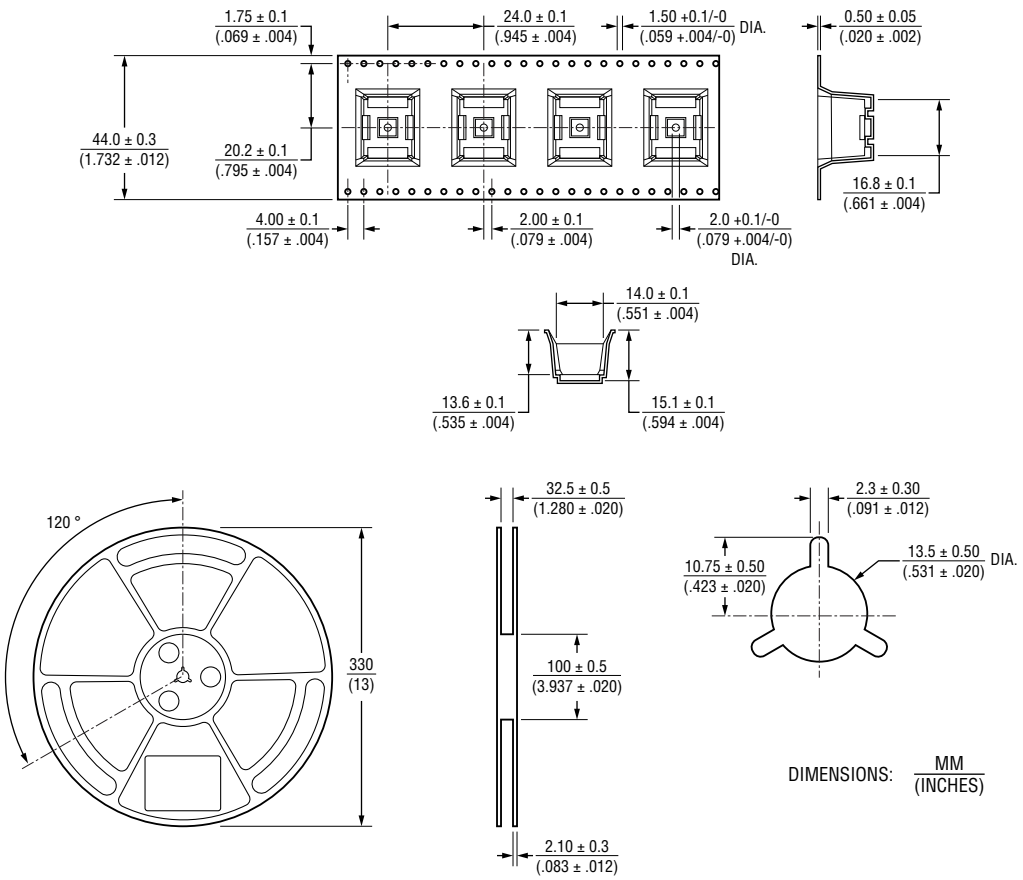


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Packaging Specifications

POE-PD Series: 150 pcs./reel, 2 reels/carton, 300 pcs.



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EMEA: Tel: +36 88 885 877 • Email: eurocus@bourns.com
The Americas: Tel: +1-951 781-5500 • Email: americus@bourns.com
www.bourns.com

REV. 10/23

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Unless Bourns has explicitly designated an individual Bourns® product as meeting the requirements of a particular industry standard (e.g., IATF 16949) or a particular qualification (e.g., UL listed or recognized), Bourns is not responsible for any failure of an individual Bourns® product to meet the requirements of such industry standard or particular qualification even if such industry standard or qualification is a "state of art". Users of Bourns® products are responsible for ensuring compliance with safety-related requirements and standards applicable to their devices or applications.

Bourns® products are not recommended, authorized or intended for use in applications where failure or malfunction may result in personal injury, death, or severe property or environmental damage, such as without limitation nuclear, life-critical medical and certain automotive and aviation applications. Except as set forth in the bullet points below or unless expressly and specifically approved in writing on a case-by-case basis by an authorized Bourns' representative, use of any Bourns® products in such unauthorized high-risk applications is at the user's sole risk.

- Bourns considers implantable/invasive devices and devices/procedures designed as life-supporting or life-sustaining by the U.S. Food and Drug Administration or equivalent organizations outside of the United States as "life-critical" medical applications. Bourns expressly identifies those Bourns® standard products that are suitable for use in typical medical applications that are not life-critical in its publication entitled "Bourns Medical Grade Component Guide."

- Bourns expressly identifies those Bourns® standard products that are suitable for use in typical automotive applications associated with any Automate Safety Integrity Level (ASIL) in its publication entitled "Bourns Automotive Grade Component Guide." Bourns' designation of Bourns® product as compliant with the AEC-Q standard does not by itself mean that Bourns has approved such product for use in an automotive application.

- Bourns expressly identifies Bourns® standard products that are suitable for use in the typical aviation applications/systems requiring System Design Assurance Level (RTCA DO-254 DAL) of C, D or E in its publication entitled "Bourns Civilian Aerospace/Aviation Grade Component Guide." Bourns does not test its products for compliance with United States Federal Aviation Administration standards or any other generally equivalent governmental organization standard applicable to products designed or manufactured for use in aviation applications. Use of Bourns® standard components in aviation applications associated with RTCA DO-254 DAL A or B without proper approval noted above shall be at the user's sole risk.

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The use and level of testing applicable to Bourns® custom products shall be negotiated on a case-by-case basis by Bourns and the user for which such Bourns® custom products are specially designed. Absent a written agreement between Bourns and the user regarding the use and level of such testing, the above provisions applicable to Bourns® standard products shall also apply to such Bourns® custom products.

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