

## Features

- Surface mount
- Power from 25 to 60 W
- Output voltage from 5 to 12 V
- Operating temperature: -40 °C up to +105 °C
- RoHS compliant\*

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## POE-FD Series - PoE DC/DC Transformers

### General Specifications

Hi-Pot

POE-FD20 and POE-FD25 (Pri-Sec)..... 1500 Vac (60 Hz / 2 sec / 1 mA)

POE060-FD20120S (Pri-Sec)..... 1875 Vac (60 Hz / 2 sec / 1 mA)

Moisture Sensitivity Level..... 1

### Electrical Specifications @ 25 °C

Bourns Part Number	Primary Inductance		Leakage Inductance		DCR		Turns ratio		Input Voltage Switching Frequency	Main Output
POE025- FD20050S	(1,2-3,4) w/ (1,2 & 3,4 shorted) @ 250 kHz / 0.5 V	70 $\mu$ H $\pm$ 10 %	(1,2-3,4) w/ (1,2 & 3,4 & 5,6 & 7,8,9,10,11,12 shorted) @ 250 kHz / 0.5 V	0.62 $\mu$ H max.	(1,2-3,4) w/ (1,2 & 3,4 shorted)	75 m $\Omega$ max.	(1,2-3,4 : 5-6) w/ (1,2 & 3,4 shorted)	2.44 $\pm$ 3 % : 1	36 V - 57 V 250 kHz	5.0 V 5.0 A
					(5-6)	250 m $\Omega$ max.				
					(7,8,9-10,11,12) w/ (10,11,12 & 7,8,9 shorted)	5 m $\Omega$ max.	(1,2-3,4 : 7,8,9- 10,11,12) w/ (1,2 & 3,4 & 10,11,12 & 7,8,9 shorted)	5.5 $\pm$ 3 % : 1		
POE028- FD20050S	(1-2) @ 250 kHz / 0.1 V	75 $\mu$ H $\pm$ 10 %	(1-2) w/ (7,8,9,10,11,12 shorted) @ 250 kHz / 0.1 V	3 $\mu$ H max.	(1-2)	100 m $\Omega$ max.	(1-2 : 5-6) (1-2 : 7-12) (1-2 : 8-12) (1-2 : 10-12)	3.33 $\pm$ 3 % : 1 3.33 $\pm$ 3 % : 1 6.67 $\pm$ 3 % : 1 10 $\pm$ 3 % : 1	40 V - 57 V 250 kHz	5.0 V 3.8 A
					(5-6)	120 m $\Omega$ max.				
					(7-8)	55 m $\Omega$ max.				
					(8-10) w/ (9,10 shorted)	5 m $\Omega$ max.				
					(12-10) w/ (12,11 & 10,9 shorted)	5 m $\Omega$ max.				
POE060- FD20120S*	(1,2-3,4) w/ (1,2 & 3,4 shorted) @ 100 kHz / 0.1 V	100 $\mu$ H $\pm$ 10 %	(1,2-3,4) w/ (1,2 & 3,4 & 5,6 & 7,8,9,10,11,12 shorted) @ 100 kHz / 0.1 V	0.35 $\mu$ H max.	(1,2-3,4) w/ (1,2 & 3,4 shorted)	39 m $\Omega$ max.	(1,2-3,4 : 5-6) w/ (1,2 & 3,4 shorted)	1.71 $\pm$ 3 % : 1	36 V - 72 V 250 kHz	12.0 V 5.0 A
					(5-6)	90 m $\Omega$ max.				
					(7,8,9-10,11,12) w/ (12, 11, 10 & 9,8,7 shorted)	12 m $\Omega$ max.	(1,2-3,4 : 7,8,9- 10,11,12) w/ (1,2 & 3,4 & 12,11,10 & 9,8,7 shorted)	1.71 $\pm$ 3 % : 1		
POE050- FD25120S	(1-3) @ 100 kHz / 0.1 V	65 $\mu$ H $\pm$ 10 %	(1-3) w/ (7,8,9,10,11,12 shorted) @ 100 kHz / 0.1 V	750 nH max.	(1-3)	75 m $\Omega$ max.	(1-3 : 5-6)	2.5 $\pm$ 3 % : 1	42.5 V - 57 V 250 kHz	12.0 V 4.2 A
					(5-6)	280 m $\Omega$ max.	(1-3 : 7,8,9- 10,11,12) w/ (10,11,12 & 7,8,9 shorted)	2.5 $\pm$ 3 % : 1		
					(7,8,9-10,11,12) w/ (10,11,12 & 7,8,9 shorted)	20 m $\Omega$ max.				

\*Model POE-FD20 and POE-FD25: Hi-Pot for PRI-SEC is 1500 Vac (60 Hz / 2 sec / 1 mA);

Model POE060-FD20120S: Hi-Pot for PRI-SEC: 1875 Vac (60 Hz / 2 sec / 1 mA)



**CALIFORNIA WARNING:** Can expose you to lead, a carcinogen and reproductive toxicant.  
See [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

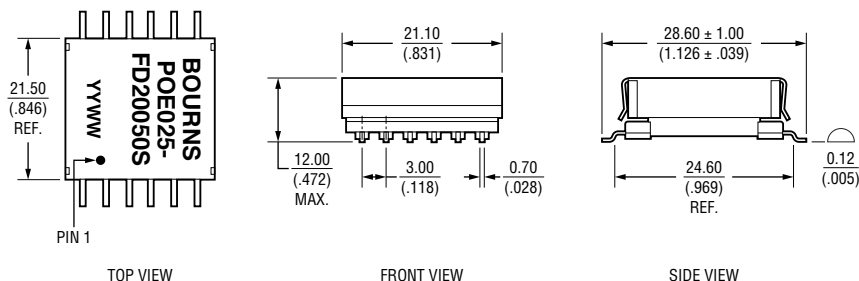
- VoIP phones
- WLAN APs
- Security IP cameras
- Routers
- Gateways

## POE-FD Series - PoE DC/DC Transformers

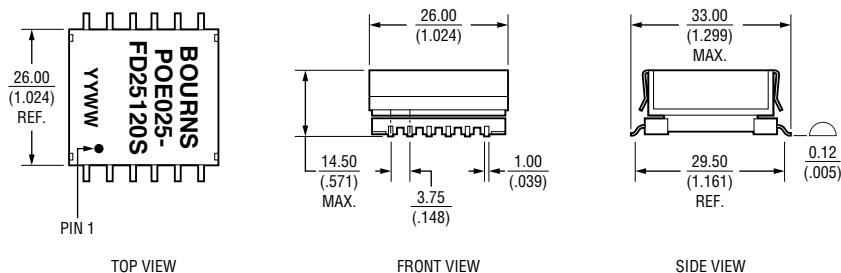
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### Product Dimensions

POE025-FD20050S, POE028-FD20050S, POE060-FD20120S

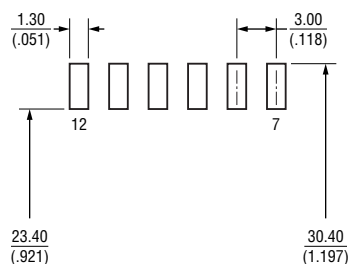


POE050-FD25120S

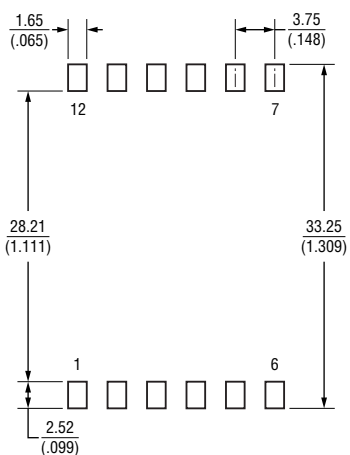


### Recommended Layout

POE025-FD20050S, POE028-FD20050S, POE060-FD20120S



POE050-FD25120S



### Materials

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

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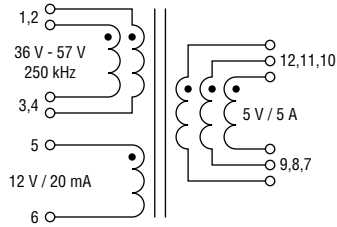
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## POE-FD Series - PoE DC/DC Transformers

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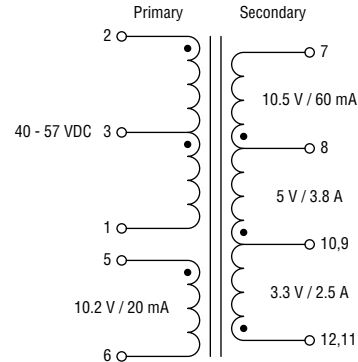
### Electrical Schematic

#### POE025-FD20050S

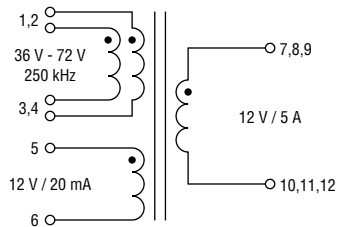


Primary windings and secondary windings to be connected in parallel on PC board.

#### POE028-FD20050S

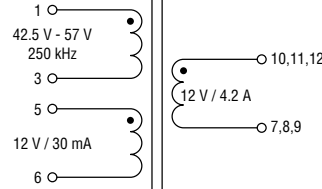


#### POE060-FD20120S



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

#### POE050-FD25120S



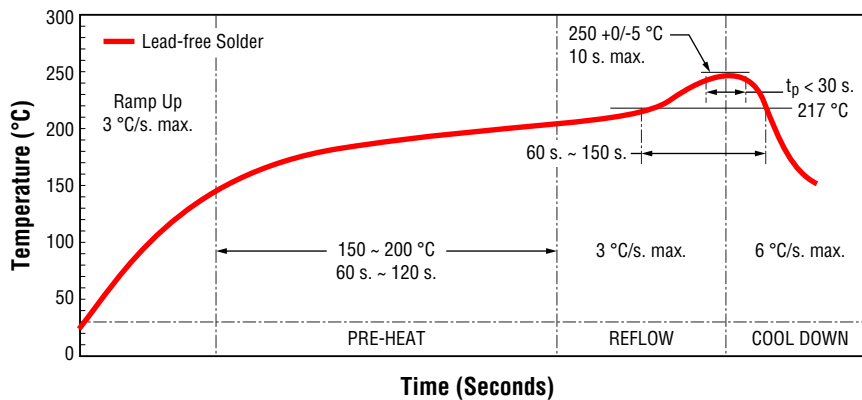
### How To Order

**POE 025 - FD20 050 S**

Model \_\_\_\_\_  
 POE =  
 POE Transformer  
 Power Rating \_\_\_\_\_  
 025 = 25 W  
 Core and Size \_\_\_\_\_  
 FD20 = EFD20  
 Vout \_\_\_\_\_  
 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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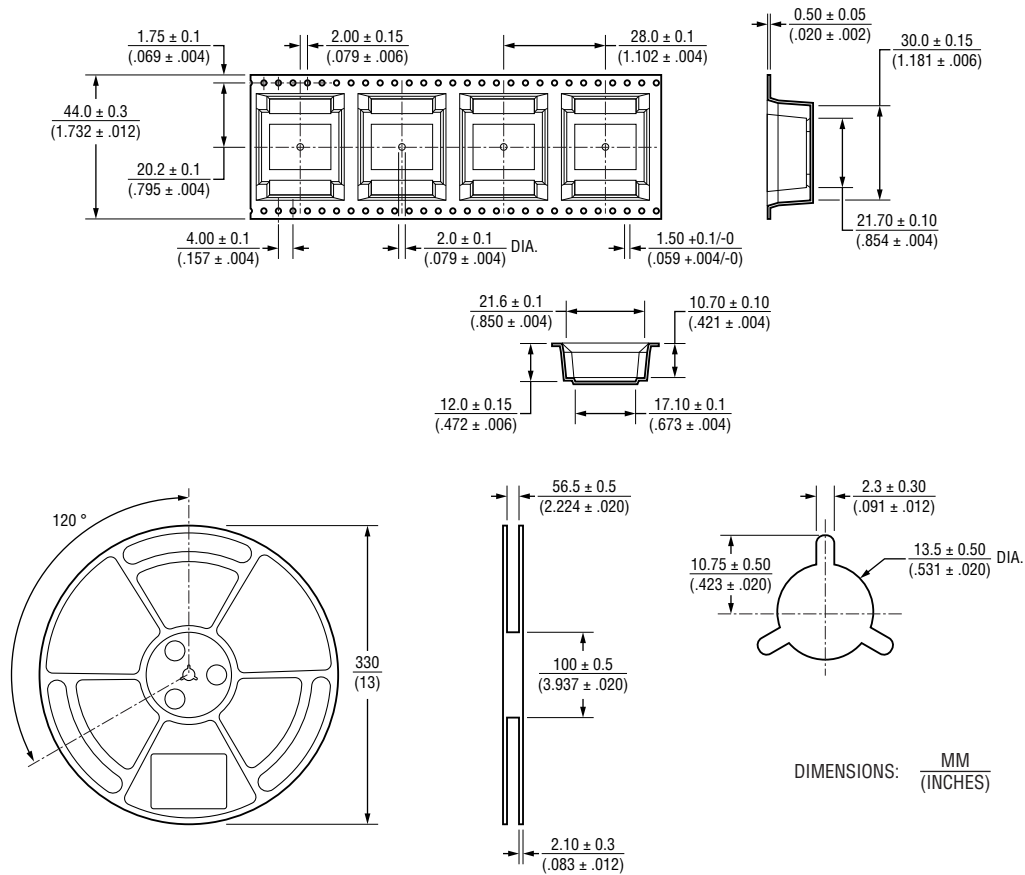
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# POE-FD Series - PoE DC/DC Transformers

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## Packaging Specifications

POE025-FD20050S, POE028-FD20050S, POE060-FD20120S: 150 pcs/reel, 2 reels/carton, 300 pcs.



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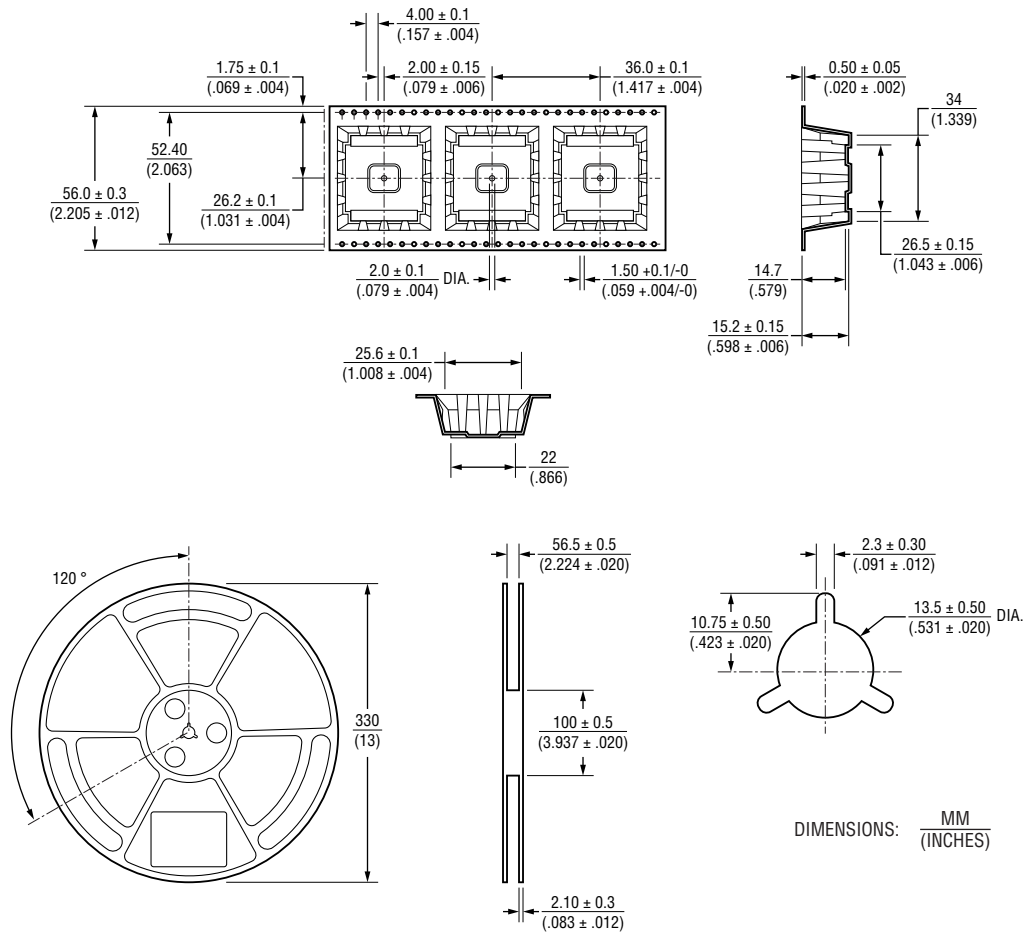
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## POE-FD Series - PoE DC/DC Transformers

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### Packaging Specifications

POE050-FD25120S: 100 pcs/reel, 2 reels/carton, 200 pcs.



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