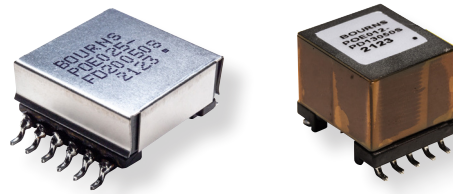




# NEW PRODUCT RELEASE

## TRANSFORMERS



## Bourns Releases Industrial Grade Power over Ethernet (PoE) Transformers

### Model POE Series

Riverside, California – October 24, 2022 – Bourns Custom Magnetics Product Line is introducing its new Power over Ethernet (PoE) Transformer Series. The [POE-EP](#), [POE-PD](#) and [POE-FD](#) Series flyback transformers are rated from 12 to 72 watts and offer an easy and reliable solution for powering remote devices.

Bourns® POE Series transformers are designed to work with many flyback controllers, and are optimized for voltage and circuit isolation in a wide variety of applications such as VoIP phones, WLAN APs, security IP cameras, routers and gateways. In addition, Bourns® POE transformers are designed and tested to provide the regulated output voltage with the most specified power level making these series ideal transformer solutions for PoE, datacomm, and industrial applications.

### Model POE-EP and POE-PD Series Specifications:

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 $\mu$ H $\pm 7$ %	(1-2) w/ (3,4,6,7,10) shorted @ 250 kHz / 0.1V	1.3 $\mu$ H max.	(1-2) (3-4) (6-7) (7-10)	340 m $\Omega$ max. 250 m $\Omega$ max. 150 m $\Omega$ max. 8 m $\Omega$ max,	(1-2 : 3-4) (1-2 : 7-10) (1-2 : 6-7)	2.77 $\pm 3$ % : 1 9.0 $\pm 3$ % : 1 4.5 $\pm 3$ % : 1	36 V - 57 V 200 kHz	3.3 V 3.3 A
POE025-EP13050S	(1-2) @ 100 kHz / 0.1 V	100 $\mu$ H $\pm 10$ %	(1-2) w/ (4,5,6,7,9,10) shorted @ 100 kHz / 0.1 V	0.55 $\mu$ H max.	(1-2) (4-5) (6,7-9,10)	114 m $\Omega$ max. 163 m $\Omega$ max. 6 m $\Omega$ max.	(1-2:4-5) (1-2:6,7-9,10)	1.82 $\pm 3$ % : 1 4 $\pm 3$ % : 1	33 V - 57 V 250 kHz	5 V 5 A
POE012-PD13050S	(1-2) @ 1 kHz / 0.5 V	150 $\mu$ H $\pm 7$ %	(1-2) w/ (3,4,6,7,8,9,10) shorted @ 250 kHz / 0.5 V	1 $\mu$ H max.	(1-2) (3-4) (6-7) (7,8-9,10)	166 $\pm 20$ % m $\Omega$ 166 $\pm 20$ % m $\Omega$ 68.5 $\pm 20$ % m $\Omega$ 6.3 $\pm 20$ % m $\Omega$	(1-2:7,8-9,10) (1-2:3-4) (1-2:6-7)	6 $\pm 3$ % : 1 2.66 $\pm 3$ % : 1 6 $\pm 3$ % : 1	36 V - 57 V 200 kHz	5 V 2.4 A

(continued)

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**Model POE-EP and POE-PD Series Specifications (Continued):**

Bourns Part Number	Primary Inductance		Leakage Inductance		DCR		Turns ratio		Input Voltage Switching Frequency	Main Output
POE012-PD13120S*	(3-4) @ 100 kHz / 0.1 V	127 $\mu$ H $\pm$ 10 %	(3-4) w/ (1,2,7,8,9,10) shorted @ 250 kHz / 0.1 V	0.65 $\mu$ H max.	(3-4) (2-1) (7-9) (8-10)	170 m $\Omega$ max. 100 m $\Omega$ max. 65 m $\Omega$ max. 65 m $\Omega$ max.	(3-4:2-1) (3-4:7-9) (3-4:8-10)	2 $\pm$ 3 % : 1 2 $\pm$ 3 % : 1 2 $\pm$ 3 % : 1	36 V - 72 V 250 kHz	12 V 1.08 A
POE025-PD13050S	(1-2) @ 1 kHz / 0.5 V	65 $\mu$ H $\pm$ 7 %	(1-2) w/ (3,4,6,7,8,9,10) shorted @ 250 kHz / 0.5 V	0.85 $\mu$ H max.	(1-2) (3-4) (6-7) (7,8-9,10)	120 m $\Omega$ max. 80 m $\Omega$ max. 65 m $\Omega$ max. 5.5 m $\Omega$ max.	(1-2:7,8-9,10) (1-2:3-4) (1-2:6-7)	6 $\pm$ 3 % : 1 2.57 $\pm$ 3 % : 1 6 $\pm$ 3 % : 1	36 V - 57 V 200 kHz	5 V 5 A
POE025-PD13120S	(1-3) @ 100 kHz / 0.1 V	80 $\mu$ H $\pm$ 7 %	(1-3) @ 100 kHz / 0.1 V w/ (4,5,6,7,9,10) shorted	1 $\mu$ H max.	(1-3) (4-5) (7,6-10,9) w/ (6,7,9,10) shorted	140 m $\Omega$ max. 195 m $\Omega$ max. 22 m $\Omega$ max.	(1-3:4-5) (1-3:7,6-10,9) w/ (6,7,9,10) shorted	2.375 $\pm$ 3 % : 1 3.166 $\pm$ 3 % : 1	36 V - 57 V 220 kHz	12 V 2.1 A
POE030-PD13050S	(1-3) @ 100 kHz / 0.1 V	70 $\mu$ H $\pm$ 10 %	(1-3) w/ (6,7,9,10) shorted @ 100 kHz / 0.1 V	1.4 $\mu$ H max.	(1-3) (4-5) (6,7-9,10) w/ (6,7,9,10) shorted	93 m $\Omega$ max. 166 m $\Omega$ max. 4.45 m $\Omega$ max.	(1-3:4-5) (1-3:6,7-9,10) w/ (6,7,9,10) shorted	3.14 $\pm$ 3 % : 1 7.33 $\pm$ 3 % : 1	33 V - 57 V 200 kHz	5 V 6 A
POE070-PD13050S	(1-3) @ 100 kHz / 0.1 V	100 $\mu$ H $\pm$ 15 %	(1-3) w/ (4,5,6,7,9,10) shorted @ 100 kHz / 0.1 V	0.22 $\mu$ H max.	(1-3) (1-2) (4-5) (6-9) (7-10)	33 m $\Omega$ max. 221 m $\Omega$ max. 135 m $\Omega$ max. 6.6 m $\Omega$ max. 6.6 m $\Omega$ max.	(1-3:1-2) (1-3:4-5) (1-3:6-9) (1-3:7-10)	1 $\pm$ 3 % : 1 1.43 $\pm$ 3 % : 1 3.33 $\pm$ 3 % : 1 3.33 $\pm$ 3 % : 1	41 V - 57 V 200 kHz	5 V 14 A
POE072-PD13120S	(1-3) @ 100 kHz / 0.1 V	100 $\mu$ H $\pm$ 12 %	(1-3) w/ (4,5,6,7,9,10) shorted @ 100 kHz / 0.1 V	0.24 $\mu$ H max.	(1-3) (1-2) (4-5) (6-9) (7-10)	49 m $\Omega$ max. 240 m $\Omega$ max. 302 m $\Omega$ max. 36 m $\Omega$ max. 34 m $\Omega$ max.	(1-3:1-2) (1-3:4-5) (1-3:6-9) (1-3:7-10)	1 $\pm$ 3 % : 1 1.33 $\pm$ 3 % : 1 1.5 $\pm$ 3 % : 1 1.5 $\pm$ 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

**Model POE-FD Series Specifications:**

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		

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**Model POE-FD Series Specifications (Continued):**

Bourns Part Number	Primary Inductance		Leakage Inductance		DCR		Turns ratio		Input Voltage Switching Frequency	Main Output
POE028-FD20050S	(1-2) @ 250 kHz / 0.1 V	75 $\mu$ H $\pm$ 10 %	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 %	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 %	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)	2.5 $\pm$ 3 % : 1		
					(7,8,9-10,11,12) w/ (10,11,12 & 7,8,9 shorted)	20 m $\Omega$ max.	(1-2 : 6-7) w/ (10,11,12 & 7,8,9 shorted)	4.5 $\pm$ 3 % : 1		

\*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)

The POE-EP, POE-PD and POE-FD Series are all standard products. However, custom designs are also available upon inquiry. The operating temperature range for these devices is -40 °C up to +165 °C and all devices are RoHS compliant\*.

Samples and production quantities are now available upon request.

For additional details on Bourns® transformers, visit the Bourns website at [www.bourns.com/products/magnetic-products/transformers-power](http://www.bourns.com/products/magnetic-products/transformers-power).

If you have questions or need additional information, please feel free to contact [Bourns Customer Service / Inside Sales](#).

**Model POE-EP & POE-PD 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 data sheet for specific ranges)
- RoHS compliant\*

**Model POE-FD 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\*

**Applications**

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

\*RoHS Directive 2015/863, Mar 31, 2015 and Annex.