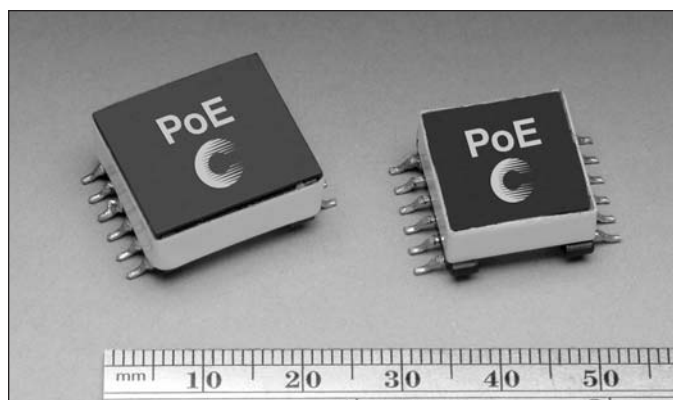


# Power-over-Ethernet (PoE)/PD Configurable Transformer

RoHS  
2002/95/EC



## Description

- Versatile design allows multiple output variations
- Flyback topology, 250kHz switching frequency
- Input range from 29.5-60V
- 1500Vac isolation between primary and secondary
- Three power levels: 4, 7 and 13watts
- Low leakage inductance
- 11.0 Volt @ 0.10 amp feedback winding
- Ferrite core material

## Applications

- For IEEE 802.3af-compliant Power-over-Ethernet applications
- UPS, VoIP Phone, wireless LAN access point, Bluetooth access point, network camera, building access systems
- Retail point-of-information systems
- Vending/gaming machines

## Environmental Data

- Storage temperature range: -40°C to +125°C
- Operating ambient temperature range: -40°C to +85°C (range is application specific)
- Solder reflow temperature: +260°C max. for 10 seconds max.

## Packaging

- Packaging Information: 4 and 7 Watts - 200 parts per 13" reel, 13 Watts - 140 parts per 13" diameter reel

| Part Number   | Watts | Inductance (μH) | Output                                             | DCR/ PRI (Ω) | DCR/ SEC (Ω)             | Leakage Inductance (μH) typ. | Pri Current Pk (Adc) | Turn Ratio<br>Schematic 1: Pins pri(1-3):fb(5-6):v1(12-7):v2(11-8):v3(10-9)<br>Schematic 2: Pins pri(1-3):fb(5-6):v1(12-10):v2(11-9) | Schematic | Dimensions |
|---------------|-------|-----------------|----------------------------------------------------|--------------|--------------------------|------------------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----------|------------|
| PoE4W3x3.3-R  | 4     | 200             | (3)x3.3V@0.45A                                     | 0.500        | 0.07                     | 2.75                         | 0.65                 | 1 : 0.52 : 0.16 : 0.16 : 0.16 ±1%                                                                                                    | 1         | Size 1     |
| PoE4W3x5.0-R  | 4     | 200             | (3)x5.0V@0.30A                                     | 0.500        | 0.27                     | 2.50                         | 0.65                 | 1 : 0.52 : 0.26 : 0.26 : 0.26 ±1%                                                                                                    | 1         | Size 1     |
| PoE4W2x12-R   | 4     | 200             | (2)x12.0V@0.20A                                    | 0.500        | 0.740                    | 1.40                         | 0.65                 | 1 : 0.52 : 0.60 : 0.60 ±1%                                                                                                           | 2         | Size 1     |
| PoE7W3x3.3-R  | 7     | 100             | (3)x3.3V@0.75A                                     | 0.275        | 0.03                     | 1.00                         | 1.00                 | 1 : 0.529 : 0.176 : 0.176 : 0.176 ±1%                                                                                                | 1         | Size 1     |
| PoE7W3x5.0-R  | 7     | 100             | (3)x5.0V@0.50A                                     | 0.275        | 0.095                    | 1.00                         | 1.00                 | 1 : 0.529 : 0.265 : 0.265 : 0.265 ±1%                                                                                                | 1         | Size 1     |
| PoE7W2x12-R   | 7     | 100             | (2)x12.0V@0.30A                                    | 0.275        | 0.250                    | 1.00                         | 1.00                 | 1 : 0.529 : 0.588 : 0.588 ±1%                                                                                                        | 2         | Size 1     |
| PoE13W3x3.3-R | 13    | 100             | (3)x3.3V@1.35A                                     | 0.250        | 0.032                    | 1.50                         | 1.60                 | 1 : 0.529 : 0.176 : 0.176 : 0.176 ±3%                                                                                                | 1         | Size 2     |
| PoE13W3x5.0-R | 13    | 100             | (3)x5.0V@0.90A                                     | 0.250        | 0.075                    | 1.20                         | 1.60                 | 1 : 0.529 : 0.265 : 0.265 : 0.265 ±3%                                                                                                | 1         | Size 2     |
| PoE13W2x12-R  | 13    | 100             | (2)x12.0V@0.60A                                    | 0.250        | 0.280                    | 1.00                         | 1.70                 | 1 : 0.529 : 0.647 : 0.647 ±3%                                                                                                        | 2         | Size 2     |
| Part Number   | Watts | Inductance (μH) | Output                                             | DCR/ PRI (Ω) | DCR/ SEC (Ω)<br>V1/V2/V3 | Leakage Inductance (μH) typ. | Pri Current Pk (Adc) | Turn Ratio<br>Schematic 2: Pins pri(1-3):fb(5-6):v1(12-10):v2(11-9)<br>Schematic 3: Pins pri(1-3):fb(5-6):v1(12-11):v2(10-9):v3(8-7) | Schematic | Dimensions |
| PoE13W3VERS-R | 13    | 100             | V1:7.0V@1.1A,<br>V2:(1)x3.3V@1.1A,<br>V3:1.8V@1.1A | 0.250        | 0.085<br>0.042<br>0.025  | 1.00                         | 1.70                 | 1 : 0.529 : 0.350 : 0.176 : 0.088 ±3%                                                                                                | 3         | Size 2     |
| PoE13W2VERS-R | 13    | 100             | V1:5.0V@1.6A,<br>V2:3.3V@1.6A                      | 0.250        | 0.038/<br>0.027/na       | 1.20                         | 1.70                 | 1 : 0.529 : 0.265 : 0.176 ±3%                                                                                                        | 2         | Size 2     |

1) Test Parameters: 100kHz, 0.100 V<sub>rms</sub>, 0.0Adc

2) DCR limits maximum @ 20°C

3) Leakage Inductance 200kHz, 0.01V<sub>rms</sub>, 0.0Adc

4) Feedback DCR 1.0Ω maximum @20°C

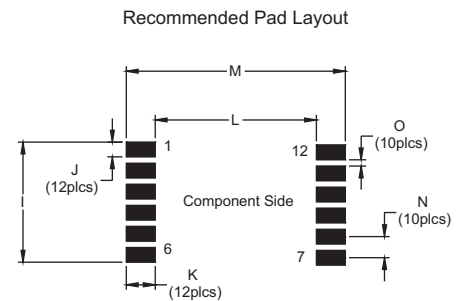
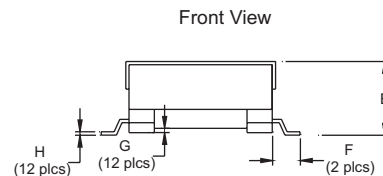
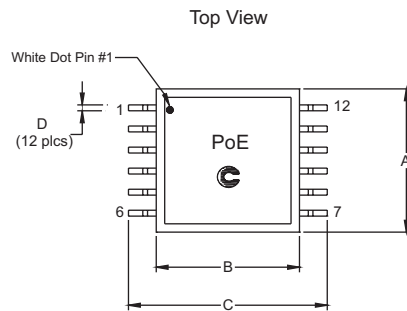
## Dimensions (mm)

|               | A<br>max. | B<br>ref. | C<br>max. | D<br>ref. | E<br>max. | F<br>ref. | G<br>ref. | H<br>ref. | I<br>ref. | J<br>mm | K<br>mm | L<br>ref. | M<br>max. | N    | O    |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|---------|-----------|-----------|------|------|
| <b>Size 1</b> | 17.1      | 16.0      | 22.3      | 0.7       | 8.4       | 3.0       | 0.1       | 0.4       | 14.49     | 1.79    | 3.43    | 16.88     | 23.74     | 2.54 | 0.75 |
| <b>Size 2</b> | 18.0      | 18.0      | 24.6      | 0.7       | 10.0      | 3.3       | 0.1       | 0.4       | 14.25     | 1.75    | 3.43    | 19.14     | 26.0      | 2.5  | 0.75 |

1) Tolerances A - H are  $\pm 0.25\text{mm}$  unless specified otherwise.

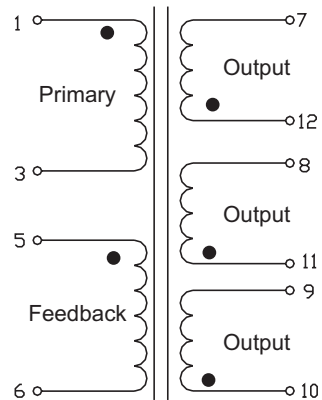
2) Tolerances I - O are  $\pm 0.10\text{mm}$  unless specified otherwise.

3) All soldering surfaces are coplanar to within  $\pm 0.102\text{mm}$ .

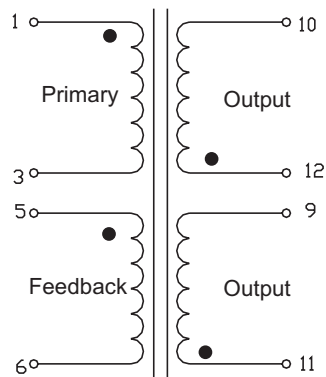


## Schematics

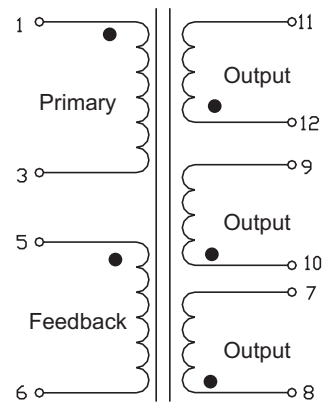
Schematic 1



Schematic 2

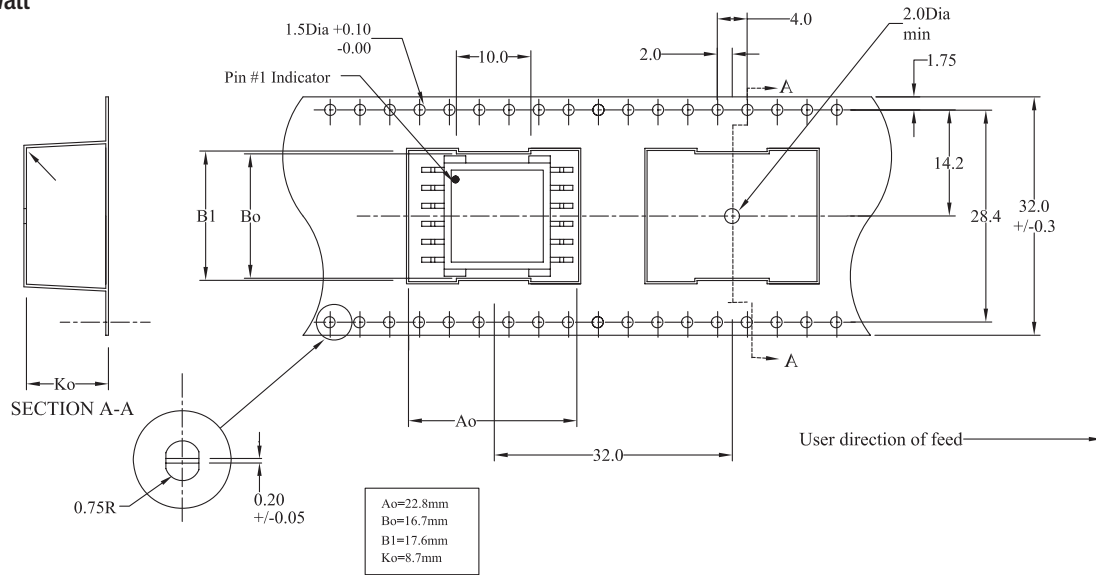


Schematic 3

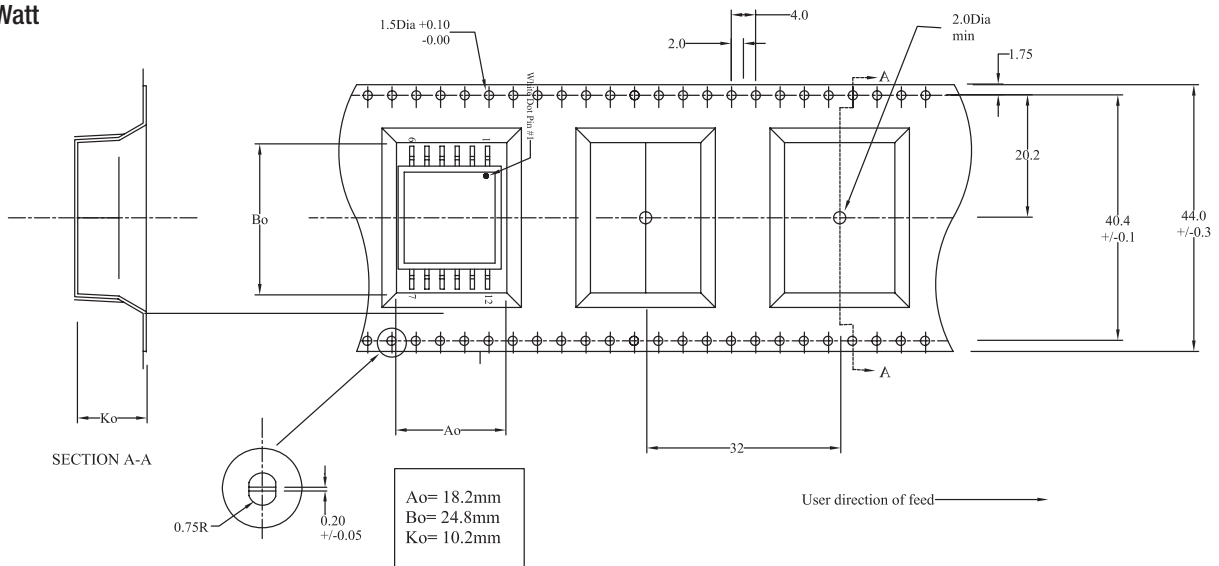


## Packaging Information

### PoE 4 and 7 Watt



### PoE 13 Watt



#### North America

Cooper Bussmann  
1225 Broken Sound Parkway NW  
Suite F  
Boca Raton, FL 33487-3533  
Tel: 1-561-998-4100  
Fax: 1-561-241-6640  
Toll Free: 1-888-414-2645

Cooper Bussmann  
P.O. Box 14460  
St. Louis, MO 63178-4460  
Tel: 1-636-394-2877  
Fax: 1-636-527-1607

#### Europe

Cooper Bussmann  
Cooper (UK) Limited  
Burton-on-the-Wolds  
Leicestershire • LE12 5TH UK  
Tel: +44 (0) 1509 882 737  
Fax: +44 (0) 1509 882 786

Cooper Bussmann  
Avda. Santa Eulalia, 290  
08223  
Terrassa, (Barcelona), Spain  
Tel: +34 937 362 812  
+34 937 362 813  
Fax: +34 937 362 719

#### Asia Pacific

Cooper Bussmann  
1 Jalan Kilang Timor  
#06-01 Pacific Tech Centre  
Singapore 159303  
Tel: +65 278 6151  
Fax: +65 270 4160

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Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)

[www.lifeelectronics.ru](http://www.lifeelectronics.ru)