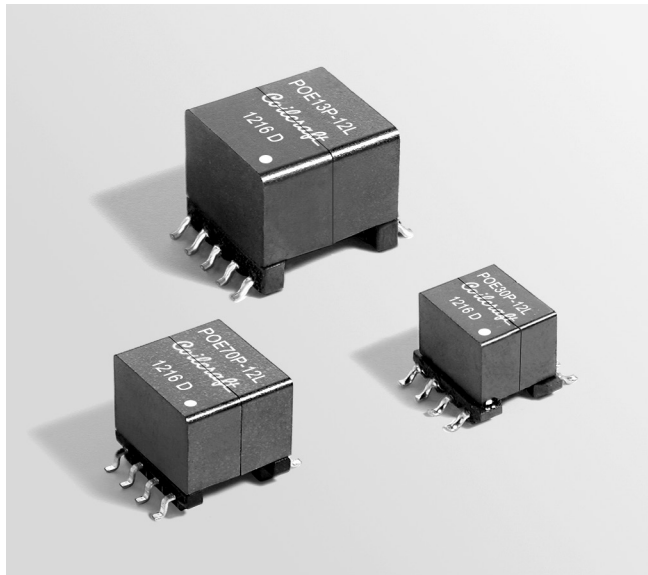




# Flyback Transformers

For 3 Watt, 7 Watt and 13 Watt  
PoE Applications



- Flyback transformers for PoE applications
- Designed to operate in continuous mode at 250 kHz with an input of 36–72 Vdc
- 1500 Vrms, one minute isolation from primary and bias to secondary; 500 Vrms, 1 minute isolation between all other windings

**Designer's Kit** C395 contains two of each part shown in bold

**Core material** Ferrite

**Terminations** RoHS tin-silver over tin over nickel over phos bronze. Other terminations available at additional cost.

**Weight** POE13P: 6.15 g; POE70P: 3.85 g; POE30P: 2.05 g

**Ambient temperature** –40°C to +85°C

**Storage temperature** Component: –40°C to +85°C.

Tape and reel packaging: –40°C to +80°C

**Resistance to soldering heat** Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCB\\_Washing.pdf](#).

| Part number <sup>1</sup> | Power (W) | Inductance at 0 A <sup>2</sup> ±10% (μH) | Inductance at I <sub>pk</sub> <sup>3</sup> min (μH) | DCR max (Ohms) <sup>4</sup> |       |       | Leakage inductance max (μH) <sup>5</sup> | Turns ratio <sup>6</sup> |            | I <sub>pk</sub> <sup>3</sup> (A) | Output <sup>7</sup> |
|--------------------------|-----------|------------------------------------------|-----------------------------------------------------|-----------------------------|-------|-------|------------------------------------------|--------------------------|------------|----------------------------------|---------------------|
|                          |           |                                          |                                                     | pri                         | bias  | sec   |                                          | pri : sec                | pri : bias |                                  |                     |
| <b>POE30P-33L</b>        | 3         | 310                                      | 279.0                                               | 1.02                        | 2.01  | 0.066 | 4.75                                     | 1 : 0.19                 | 1 : 0.70   | 0.3                              | 3.3 V, 0.91 A       |
| <b>POE30P-50L</b>        | 3         | 310                                      | 279.0                                               | 1.02                        | 2.01  | 0.118 | 4.50                                     | 1 : 0.28                 | 1 : 0.70   | 0.3                              | 5.0 V, 0.6 A        |
| <b>POE30P-12L</b>        | 3         | 310                                      | 279.0                                               | 1.04                        | 2.01  | 0.700 | 4.25                                     | 1 : 0.70                 | 1 : 0.70   | 0.3                              | 12 V, 0.25 A        |
| <b>POE70P-33L</b>        | 7         | 155                                      | 139.5                                               | 0.414                       | 0.822 | 0.036 | 4.00                                     | 1 : 0.19                 | 1 : 0.667  | 0.65                             | 3.3 V, 2.12 A       |
| <b>POE70P-50L</b>        | 7         | 155                                      | 139.5                                               | 0.414                       | 0.822 | 0.060 | 3.60                                     | 1 : 0.262                | 1 : 0.667  | 0.65                             | 5.0 V, 1.4 A        |
| <b>POE70P-12L</b>        | 7         | 155                                      | 139.5                                               | 0.414                       | 0.822 | 0.343 | 3.25                                     | 1 : 0.667                | 1 : 0.667  | 0.65                             | 12 V, 0.6 A         |
| <b>POE13P-33L</b>        | 13        | 127                                      | 114.3                                               | 0.255                       | 0.310 | 0.024 | 1.25                                     | 1 : 0.166                | 1 : 0.50   | 1.0                              | 3.3 V, 4.0 A        |
| <b>POE13P-50L</b>        | 13        | 127                                      | 114.3                                               | 0.222                       | 0.348 | 0.039 | 0.950                                    | 1 : 0.25                 | 1 : 0.50   | 1.0                              | 5.0 V, 2.6 A        |
| <b>POE13P-12L</b>        | 13        | 127                                      | 114.3                                               | 0.199                       | 0.308 | 0.065 | 0.650                                    | 1 : 0.50                 | 1 : 0.50   | 1.0                              | 12 V, 1.08 A        |
| <b>POE13P-19L</b>        | 13        | 127                                      | 114.3                                               | 0.290                       | 0.355 | 0.066 | 0.800                                    | 1 : 0.567                | 1 : 0.50   | 1.0                              | 19.5 V, 0.67 A      |
| <b>POE13P-24L</b>        | 13        | 127                                      | 114.3                                               | 0.255                       | 0.315 | 0.067 | 0.600                                    | 1 : 0.667                | 1 : 0.50   | 1.0                              | 24 V, 0.54 A        |

1. When ordering, please specify **packaging** code:

**POE30P-12LD**

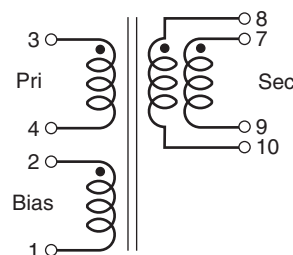
**Packaging:** D = 13" machine-ready reel. EIA-481 embossed plastic tape.

B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter D instead.

- Inductance is for the primary, measured at 250 kHz, 0.1 Vrms, 0 Adc.
  - I<sub>pk</sub> is peak primary current drawn at minimum input voltage.
  - DCR for the secondary is per winding.
  - Leakage inductance measured between pins 3 and 4 with all other pins shorted.
  - Turns ratio is with the secondary windings connected in parallel.
  - Output of the secondary is with the windings connected in parallel. Bias winding output is 12 V, 20 mA.
  - Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

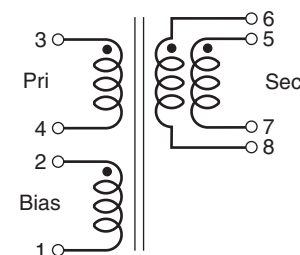
## Schematics

### POE13P



Secondary windings to be connected in parallel on PC board

### POE70P, POE30P

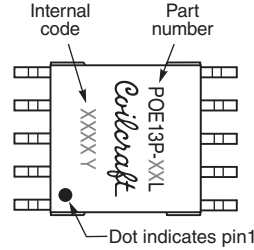
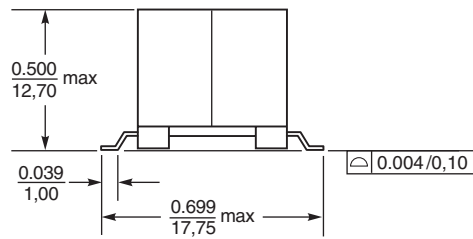


Secondary windings to be connected in parallel on PC board



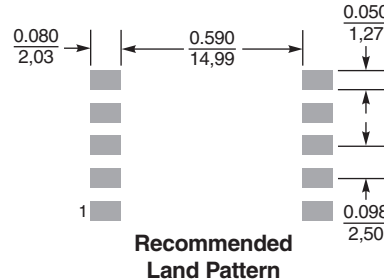
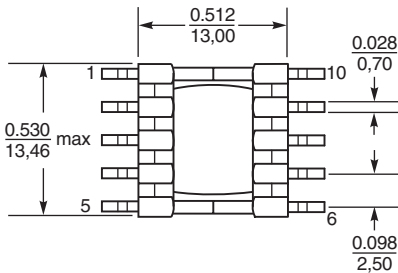
# Flyback Transformers for PoE

## POE13P

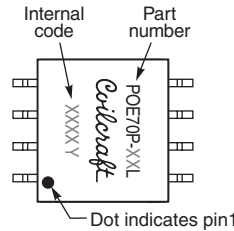
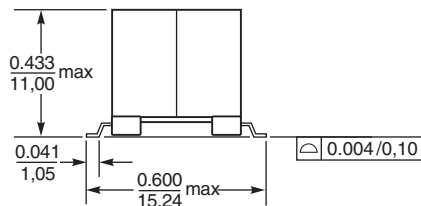


**Packaging** 175 per 13" reel  
Plastic tape: 32 mm wide, 0.5 mm thick,  
28 mm pocket spacing, 12.93 mm pocket depth

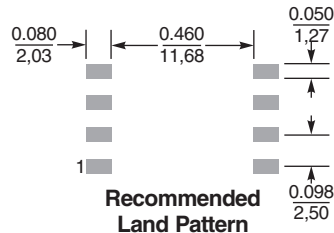
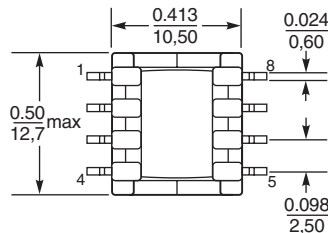
Parts manufactured prior to  
April, 2012 may be marked  
differently.



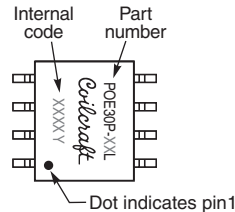
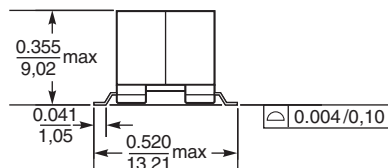
## POE70P



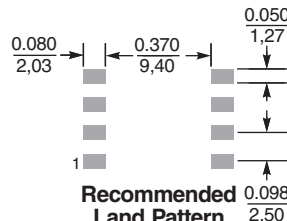
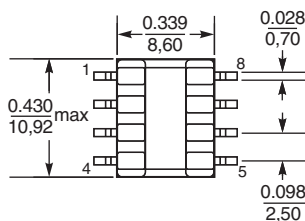
**Packaging** 200 per 13" reel  
Plastic tape: 32 mm wide, 0.5 mm thick,  
24 mm pocket spacing, 11.2 mm pocket depth



## POE30P



**Packaging** 350 per 13" reel  
Plastic tape: 32 mm wide, 0.45 mm thick, 20 mm  
pocket spacing, 9.35 mm pocket depth



Dimensions are in  $\frac{\text{inches}}{\text{mm}}$



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