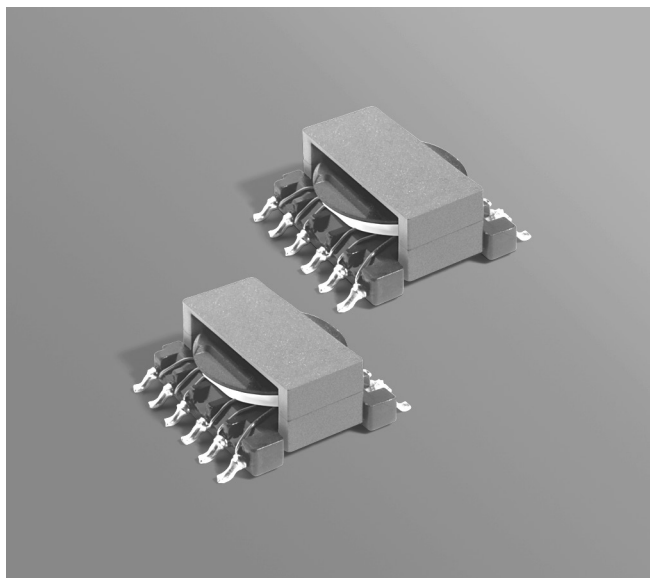




# Miniature Flyback Transformers for PoE



- Space efficient size: 16.5 mm square less than 7.5 mm tall
- Operates at 250 kHz with 36–72 Volts input
- 1500 Vrms, one minute isolation between primary and secondary

**Designer's Kit C382** contains two samples of each part.

**Core material** Ferrite

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

**Weight** 2.6 – 2.9 g

**Ambient temperature** –40°C to +125°C

**Storage temperature** Component: –40°C to +125°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

**Packaging** 400 per 13" reel Plastic tape: 32 mm wide, 0.4 mm thick, 20 mm pocket spacing, 7.69 mm pocket depth

**PCB washing** Tested with pure water or alcohol only. For other solvents, see Doc787\_PCB\_Washing.pdf.

| Part number <sup>1</sup>     | Power (W) | Inductance at 0A <sup>2</sup> ±10%(μH) | Inductance at Ipk <sup>3</sup> min (μH) | DCR max (Ohms) <sup>4</sup> |       |       | Leakage inductance <sup>5</sup> max (μH) | Turns ratio <sup>6</sup> |          | Ipk <sup>3</sup> (A) | Output <sup>7</sup> |
|------------------------------|-----------|----------------------------------------|-----------------------------------------|-----------------------------|-------|-------|------------------------------------------|--------------------------|----------|----------------------|---------------------|
|                              |           |                                        |                                         | pri                         | sec   | bias  |                                          | pri/sec                  | pri/bias |                      |                     |
| Continuous mode <sup>8</sup> |           |                                        |                                         |                             |       |       |                                          |                          |          |                      |                     |
| POE60C-18L_                  | 6         | 167.0                                  | 150.3                                   | 0.303                       | 0.017 | 0.570 | 7.8                                      | 1:0.063                  | 1:0.344  | 0.62                 | 1.8 V, 3.3 A        |
| POE60C-25L_                  | 6         | 177.0                                  | 159.3                                   | 0.353                       | 0.027 | 0.660 | 7.0                                      | 1:0.083                  | 1:0.333  | 0.60                 | 2.5 V, 2.4 A        |
| POE60C-33L_                  | 6         | 184.0                                  | 165.6                                   | 0.286                       | 0.026 | 0.515 | 4.0                                      | 1:0.100                  | 1:0.333  | 0.57                 | 3.3 V, 1.8 A        |
| POE60C-50L_                  | 6         | 193.0                                  | 173.7                                   | 0.344                       | 0.043 | 0.660 | 8.0                                      | 1:0.143                  | 1:0.343  | 0.55                 | 5.0 V, 1.2 A        |
| POE60C-12L_                  | 6         | 204.0                                  | 183.6                                   | 0.293                       | 0.083 | 0.545 | 5.8                                      | 1:0.333                  | 1:0.333  | 0.52                 | 12.0 V, 0.5 A       |
| Discontinuous mode           |           |                                        |                                         |                             |       |       |                                          |                          |          |                      |                     |
| POE60D-18L_                  | 6         | 75.0                                   | 67.5                                    | 0.311                       | 0.018 | 0.575 | 6.7                                      | 1:0.063                  | 1:0.344  | 1.0                  | 1.8 V, 3.3 A        |
| POE60D-25L_                  | 6         | 80.0                                   | 72.0                                    | 0.219                       | 0.018 | 0.388 | 5.0                                      | 1:0.083                  | 1:0.333  | 0.95                 | 2.5 V, 2.4 A        |
| POE60D-33L_                  | 6         | 85.0                                   | 76.5                                    | 0.285                       | 0.026 | 0.530 | 4.0                                      | 1:0.100                  | 1:0.333  | 0.90                 | 3.3 V, 1.8 A        |
| POE60D-50L_                  | 6         | 90.0                                   | 81.0                                    | 0.271                       | 0.033 | 0.529 | 3.1                                      | 1:0.143                  | 1:0.357  | 0.85                 | 5.0 V, 1.2 A        |
| POE60D-12L                   | 6         | 95.0                                   | 85.5                                    | 0.265                       | 0.074 | 0.484 | 2.4                                      | 1:0.333                  | 1:0.333  | 0.80                 | 12.0 V, 0.5 A       |

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

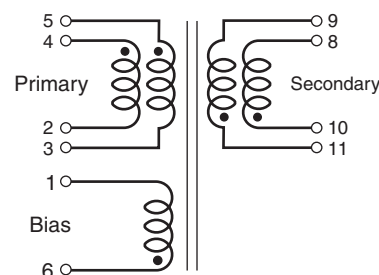
**POE60D-12LD**

**Packaging:** D = 13" machine-ready reel. EIA-481 embossed plastic tape (400 parts per full reel).

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, 0.5 Vrms.
- Peak primary current drawn at minimum input voltage.
- DCR for the primary and for the secondary are with the windings connected in parallel.
- Leakage inductance is for the primary winding with the secondary winding shorted.
- Turns ratios are with the primary and secondary windings connected in parallel.
- Output of the secondary is with the windings connected in parallel. Bias winding output is 12 V, 20 mA.
- Designed to remain in continuous mode operation at power levels of 3 Watts and above.
- Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



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



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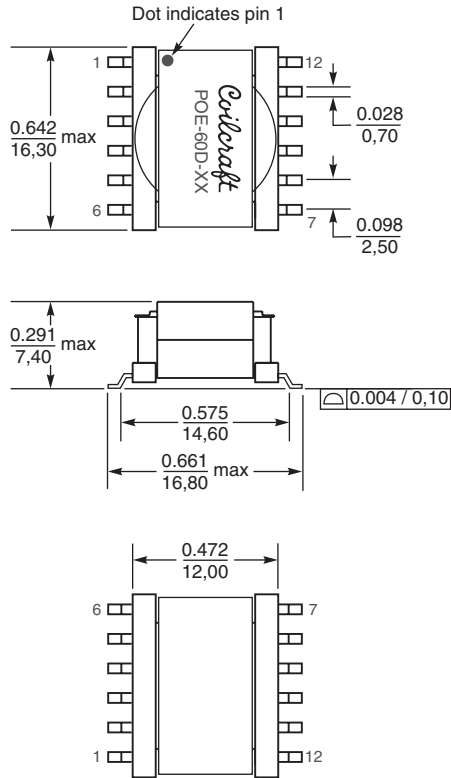
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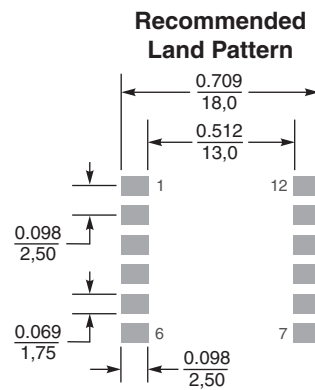
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# Miniature Flyback Transformers for PoE



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



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