



# Flyback Transformers

For National Semiconductor  
LM5070 PoE Interface – 7 Watt



- Flyback transformers for 7 W PoE applications
- Designed to operate in continuous mode at 250 kHz with an input of 36 – 72 Vdc
- 1500 Vrms isolation from primary and bias to secondary

**Core material** Ferrite

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

**Weight** 3.85 g

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

**Storage temperature** Component: –40°C to +85°C.  
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** 200 per 13" reel Plastic tape: 32 mm wide, 0.5 mm thick, 24 mm pocket spacing, 11.2 mm pocket depth

**PCB washing** Only pure water or alcohol recommended

Part number <sup>1</sup>	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		
C1587-AL	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
C1588-AL	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
C1589-AL	155	139.5	0.414	0.822	0.343	3.25	1 : 0.667	1 : 0.667	0.65	12 V, 0.6 A

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

**C1589-AL D**

**Packaging:** D = 13" machine-ready reel. EIA-481 embossed plastic tape (200 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.

2. Inductance is for the primary, measured at 10 kHz, 0.1 Vrms, 0 Adc.

3. I<sub>pk</sub> is peak primary current drawn at minimum input voltage.

4. DCR for the secondary is per winding.

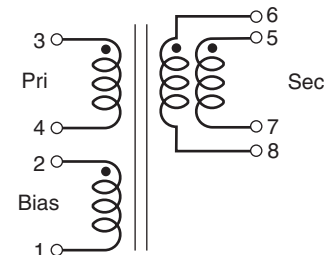
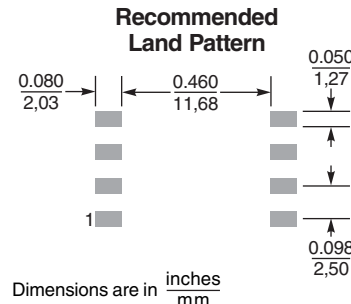
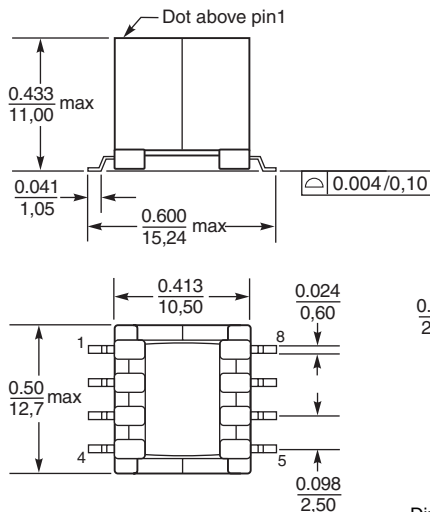
5. Leakage inductance measured between pins 3 and 4 with all other pins shorted.

6. Turns ratio is with the secondary windings connected in parallel.

7. Output of the secondary is with the windings connected in parallel. Bias winding output is 12 V, 20 mA.

8. Electrical specifications at 25°C.

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



Secondary windings to be connected in parallel on the PCB board



Specifications subject to change without notice.  
Please check our website for latest information.

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