PoE Transformer
For National Semiconductor
LM5070 PoE Interface

- Developed for the NSC LM5070 PD Interface in 13W applications.
- Operates at frequencies up to 1 MHz.
- Input: 36–72 V; Output: 3.3V, 4.5A, with secondary windings connected in parallel.
- Isolation: 1500 Vrms from the primary and auxiliary windings to the secondary.

Core material: Ferrite
Terminations: RoHS tin-silver (96.5/3.5) over tin over nickel over phosphor bronze. Other terminations available at additional cost.

Weight: 12.4 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)

Packaging: 175 per 13” reel. Plastic tape: 44 mm wide, 0.4 mm thick, 32 mm pocket spacing, 11.9 mm pocket depth.


1. When ordering, please specify a packaging code:
   - D = 13” machine ready reel, EIA-481 embossed plastic tape (175 per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).
   - B = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from B to D.

- Inductance is for the primary, measured at 10 kHz, 0.1 Vrms, 0 Adc.
- Ipk is the peak current drawn at minimum input voltage.
- DCR for the secondary is per winding.
- Leakage inductance is for the primary winding with all other pins shorted.
- Turns ratio is with the secondary windings connected in parallel.
- Capacitance measured between pins 3 and 4 with other pins shorted.
- Isolation is measured from the primary and auxiliary to the secondary.
- Electrical specifications at 25°C.
- Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

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**Part L at 0 A² L at Ipk² DCR max (Ohms)³ Leakage L (µH)⁴ Turns ratio¹⁶ Capacitance⁷ Ipk³ Isolation¹⁸**

<table>
<thead>
<tr>
<th>Part number¹</th>
<th>L at 0 A²</th>
<th>L at Ipk²</th>
<th>DCR max (Ohms)³</th>
<th>Leakage L (µH)⁴</th>
<th>Turns ratio¹⁶</th>
<th>Capacitance⁷</th>
<th>Ipk³</th>
<th>Isolation¹⁸</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1023-AL</td>
<td>±10% (µH)</td>
<td>±10% (µH)</td>
<td>pri aux sec</td>
<td>pri : sec</td>
<td>pri : aux</td>
<td>(pF)</td>
<td>(A)</td>
<td>(Vrms)</td>
</tr>
<tr>
<td>C1023-ALD</td>
<td>110</td>
<td>99.0</td>
<td>0.139 0.656 0.016</td>
<td>1.40 0.19 0.69</td>
<td>70 1.5 1500</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Inductance is for the primary, measured at 10 kHz, 0.1 Vrms, 0 Adc.
3. Ipk is the peak current drawn at minimum input voltage.
4. DCR for the secondary is per winding.
5. Leakage inductance is for the primary winding with all other pins shorted.
6. Turns ratio is with the secondary windings connected in parallel.
7. Capacitance measured between pins 3 and 4 with other pins shorted.
8. Isolation is measured from the primary and auxiliary to the secondary.
9. Electrical specifications at 25°C.

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Secondary windings to be connected in parallel on PC board.

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Dimensions are in inches mm

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Parts manufactured prior to December 2011 may be marked differently.

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Recommended Land Pattern

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Dot indicates pin 1

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