**LAN ISOLATION TRANSFORMER CATALOG**

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**ISOLATION TRANSFORMERS**

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ISOLATION TRANSFORMERS FOR 10BASE-T
For Adapter Cards, MAUs, Hubs, and Motherboard Applications

- Meets IEEE 802.3 specification
- Available with common mode chokes for EMI suppression
- Through hole, auto-insertable, 16-pin DIP package

Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Turns Ratio ((\pm 5%))</th>
<th>Primary Pins</th>
<th>Common Mode Choke</th>
<th>Sine Wave Inductance OCL ((\mu)H MIN)</th>
<th>Interwinding Capacitance Cww1 (pF MAX)</th>
<th>Leakage Inductance (L_{1}) ((\mu)H MAX)</th>
<th>DCR ((\Omega) MAX)</th>
<th>Hipot (Vrms)</th>
<th>Schem.</th>
<th>Mech</th>
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<tbody>
<tr>
<td>SRFACE MOUNT</td>
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THROUGH HOLE

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Turns Ratio ((\pm 5%))</th>
<th>Primary Pins</th>
<th>Common Mode Choke</th>
<th>Sine Wave Inductance OCL ((\mu)H MIN)</th>
<th>Interwinding Capacitance Cww1 (pF MAX)</th>
<th>Leakage Inductance (L_{1}) ((\mu)H MAX)</th>
<th>DCR ((\Omega) MAX)</th>
<th>Hipot (Vrms)</th>
<th>Schem.</th>
<th>Mech</th>
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</table>

1. OCL, Cww and \(L_{1}\) are measured at 20 mVrms, 100 kHz.
2. For Tape & Reel packaging, add the suffix “T” to the end of the part number when ordering, e.g. E2023T.
3. Part numbers denoted “EX” are extended temperature parts -40°C to 85°C, electrical specifications @ 25°C.
4. E2023NL is the RoHS compliant version of E2023.
ISOLATION TRANSFORMERS FOR ETHERNET

AUI Transformers

- Low leakage inductance and coupling capacitance for faster rise times
- Small form factor, 50 mil lead spacing
- Through hole, auto-insertable, 16-pin DIP package

Electrical Specifications @ 25°C — Operating Temperature 0°C to 70°C

<table>
<thead>
<tr>
<th>Part Number 3</th>
<th>Turns Ratio (±5%)</th>
<th>Primary Pins</th>
<th>Primary Sine Wave OCL (μH ±20%)</th>
<th>Primary ET-Constant (V4µs MIN)</th>
<th>Rise Time 2 (ns MAX)</th>
<th>Interwinding Capacitance Cww 1 (pF MAX)</th>
<th>Leakage Inductance Ll 1 (μH MAX)</th>
<th>DCR (Ω MAX)</th>
<th>Schem.</th>
<th>Mech.</th>
<th>Hipot (Vrms)</th>
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<td>3.0</td>
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<td>THROUGH HOLE</td>
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<td>TH2</td>
<td>2000</td>
</tr>
</tbody>
</table>

1. OCL, Cww and Ll are measured at 20 mVrms, 100 kHz.
2. Rise time is measured in 75 Ω systems.
3. For Tape & Reel packaging, add a suffix “T” to the end of the part number when ordering. e.g. PE-65723T.
Typical Application Circuit

NOTES:
1. Connections at pins 12 and 13 apply to PE-68023 only. These are test points. Do not ground.
2. For specific information, see pages 2 and 3 in this catalog.
3. For specific connection, refer to National's Application Notes.
ISOLATION TRANSFORMERS

Schematics (continued)

T5

T6

T7

T10

PINS 4, 12 AND 13 NOT CONNECTED.
Surface Mount Mechanicals

SMT2

Dimensions: Inches

Unless otherwise specified, all tolerances are ± 0.010

Weight: 0.22 grams
Tube: 60/tube
Tape & Reel: 1500/reel

SMT4

Dimensions: Inches

Unless otherwise specified, all tolerances are ± 0.010

Weight: 0.82 grams
Tube: 40/tube
Tape & Reel: 900/reel
ISOLATION TRANSFORMERS

Through Hole Mechanicals - (continued)

SUGGESTED PAD LAYOUT

Dimensions: Inches
mm

Unless otherwise specified, all tolerances are ± .005
0.13

Weight ................. 0.85 grams
Tube .................... 50/tube
Tape & Reel ............ 750/reel

Through Hole Mechanicals

TH1

TH2

Dimensions: Inches
mm

Unless otherwise specified, all tolerances are ± .010
0.25
Through Hole Mechanicals - continued

<table>
<thead>
<tr>
<th>TH3</th>
<th>TH4</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="TH3 Diagram" /></td>
<td><img src="image2" alt="TH4 Diagram" /></td>
</tr>
</tbody>
</table>

**Weight** ............ 1.7 grams  
**Tube** .............. 28/tube  

**Dimensions:**  
- Inches  
- mm  
- Unless otherwise specified, all tolerances are ± 0.005  
- Unless otherwise specified, all tolerances are ± 0.010

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