**Features**

- Designed to meet IEEE 802.3u (100 Base-T)
- Expanded temperature range: -40 to +125 °C
- RoHS compliant* and halogen free**
- AEC-Q200 compliant

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**SM91074AL - 10/100 Base-T Transformer**

### Electrical Specifications @ 25 °C

- **OCL (100 kHz, 0.1 V, 8 mA DC Bias):** 350 μH Min.
- **Leakage Inductance (100 kHz, 0.1 V):**
  - TD with TX Shorted: 0.5 μH Max.
  - RD with RX Shorted: 0.5 μH Max.
- **Turns Ratio:**
  - TD : TX: 1 : 1 (±2 %)
  - RD : RX: 1 : 1 (±2 %)
- **DCR:**
  - TD & RD: 1.0 ohm Max.
  - TX & RX: 1.4 ohm Max.
- **Insertion Loss (TD to TX & RD to RX):**
  - 1-100 MHz: -1.1 dB Max.
- **Return Loss (TD to TX & RD to RX with 100 ohm load):**
  - 1-40 MHz: -16 dB Min.
  - 40-100 MHz: -10+20*log (f/80 MHz) dB Min.
- **Cross Talk (Between Each Channel):**
  - 1-60 MHz: -35 dB Min.
- **Common Mode Rejection (TD to TX & RD to RX):**
  - 1-60 MHz: -37 dB Min.
  - 60-100 MHz: -30 dB Min.
- **Differential to Common Mode Rejection Ratio (TD to TX & RD to RX):**
  - 30 MHz: -35 dB Min.
  - 60 MHz: -35 dB Min.
- **Hi-Pot (TD to TX & RD to RX):**
  - @ 1 mA, 60 sec: 1500 Vrms & 2250 Vdc
- **Storage Temperature:** -40 to +125 °C
- **Operating Temperature:** -40 to +125 °C
- **Moisture Sensitivity Level:** 1
- **ESD Classification (HBM):** N/A

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### Packaging Specifications

- **Tape & Reel:** 600 pcs./reel

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### How To Order

- **Model:** SM91074 A L - E
- **AEC-Q200 Compliant**
- **Termination:**
  - L = Cu/Ni/Sn (RoHS Compliant)
  - E = Tape and Reel (600 pcs. per reel)

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### Recommended Layout

**DIMENSIONS:** MM (INCHES)

**COPLANARITY: 0.10 (0.004) MAX.**

**YYWW**

**Pin 1**

**TTTT**

**Recommended Layout**

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### SM91074AL Electrical Schematic

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**WARNING Cancer and Reproductive Harm**

www.P65Warnings.ca.gov

** Bourns considers a product to be “halogen free” if (a) the Bromine (Br) content is 900 ppm or less; (b) the Chlorine (Cl) content is 900 ppm or less; and (c) the total Bromine (Br) and Chlorine (Cl) content is 1500 ppm or less.

Specifications are subject to change without notice.

Users should verify actual device performance in their specific applications.

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## Solder Profile

### Profile Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>Pb Free Assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Ramp-up Rate</td>
<td>3 °C/second max.</td>
</tr>
<tr>
<td>Preheat</td>
<td></td>
</tr>
<tr>
<td>Temperature min. (Ts min)</td>
<td>150 °C</td>
</tr>
<tr>
<td>Temperature max. (Ts max)</td>
<td>200 °C</td>
</tr>
<tr>
<td>Time (ts min. to ts max.)</td>
<td>60 ~ 180 s</td>
</tr>
<tr>
<td>Liquidus Temperature: TL</td>
<td>217 °C</td>
</tr>
<tr>
<td>Time above Liquidus Temperature: tL</td>
<td>60 ~ 150 s</td>
</tr>
<tr>
<td>Peak Temperature: TP</td>
<td>245-250 °C</td>
</tr>
<tr>
<td>Time within 5 °C of Actual Peak Temperature: tP</td>
<td>20 ~ 40 s</td>
</tr>
<tr>
<td>Ramp-down Rate from Peak Temperature</td>
<td>6 °C/s max.</td>
</tr>
<tr>
<td>Time 25 °C to Peak: t_{25 TO PEAK}</td>
<td>8 minutes max.</td>
</tr>
</tbody>
</table>

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Packaging Specifications

Specifications and tolerances comply with EIA-481 requirements.

DIMENSIONS: MM (INCHES)

DIA. 330.0 ± 2.0 (12.992 ± .079)
MIN.
DIA. 100.0 ± 2.0 (3.937 ± .079)
MAX.
DIA. 24.4 ± .0
(.961 ± .008)
MIN.
DIA. 13.2 ± 0.2
(.520 ± .008)
MIN.

MIN. DIA. 20.2 (.795)
MIN.

END 16.00 (.630)

START 4.00 (.157)

TRAILER NO COMPONENT 160
(6.299)
MIN.

COMPONENTS

LEADER NO COMPONENT 400
(15.748)
MIN.

USER DIRECTION OF FEED

600 PCS. PER REEL

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