SM13072APEL - 10/100 Base-T Transformer

**Features**
- IEEE 802.3 Ethernet compatible
- Fully integrated for adapter, hub and motherboard applications
- Expanded temperature range: -40 to +125 °C
- RoHS compliant*

**Electrical Specifications @ 25 °C**
- Inductance (100 kHz, 0.1 V, 8 mA DC) 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.
- Cw (TD to TX & RD to RX @ 100 kHz, 0.1 V) 35 pF Max.
- Turns Ratio
  - TD: TX 1:1 (±2 %)
  - RD: RX 1:1 (±2 %)
- DCR
  - TD & RD 1.4 ohm Max.
  - TX & RX 1.0 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 -40 dB Min.
  - 60-100 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

**Packaging Specifications**
- Tape & Reel 600 pcs./reel

**How To Order**
- Model SM13072APEL
- Construction Potted
- Packaging E = Tape and Reel (600 pcs./reel)
- Termination L = Cu/Ni/Sn (RoHS Compliant)

**Recommended Layout**

**Electrical Schematic**

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*RoHS Directive 2002/95/EC Jan. 27, 2003 including annex and RoHS Recast 2011/65/EU June 8, 2011. Specifications are subject to change without notice. Users should verify actual device performance in their specific applications. The products described herein and this document are subject to specific legal disclaimers as set forth on the last page of this document, and at www.bourns.com/docs/legal/disclaimer.pdf.
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Solder Profile

Ramp-up rate = 3 °C/sec. max.
Ramp-down rate = 6 °C/sec. max.
T1 = 217 °C  t1 = 60-150 sec.
T2 = 250 °C ±3 °C
Time within 5 °C of actual Peak Temp (tP) = 20-40 sec.
T3 min = 150 °C  Ts max = 200 °C
T4 min to T4 max = 60-180 sec.
25 °C to Peak Temperature = 8 min. max.

Packaging Specifications

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