



Features

- IEEE 802.3 Ethernet compatible
- Fully integrated for adapter, hub and motherboard applications
- Expanded temperature range: -40 to +125 °C
- AEC-Q200 Qualified, automotive grade
- RoHS compliant*

Applications

- Automotive
- LAN
- Ethernet

SM13072APEL - 10/100 Base-T Transformer

Electrical Specifications @ 25 °C

Inductance (100 kHz, 0.1 V, 8 mA DC)	350 μ H Min.
Leakage Inductance (100 kHz, 0.1 V)	
TD with TX Shorted	0.5 μ H Max.
RD with RX Shorted	0.5 μ H Max.
C _{sw} (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.
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



Asia-Pacific:

Tel: +886-2 2562-4117
Email: asiacus@bourns.com

Europe:

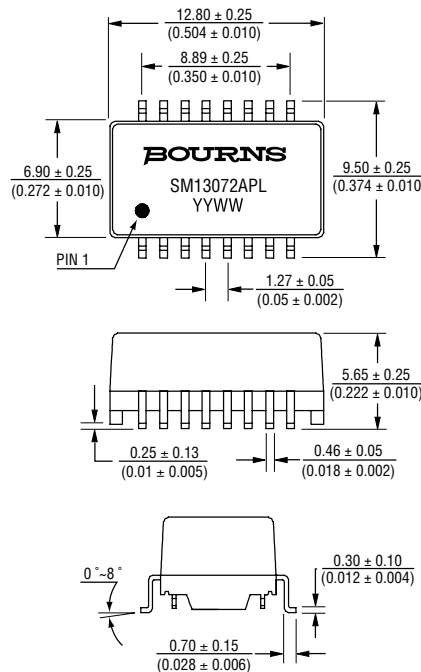
Tel: +36 88 520 390
Email: eurocus@bourns.com

The Americas:

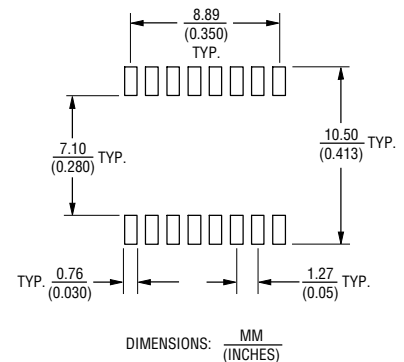
Tel: +1-951 781-5500
Email: americus@bourns.com

www.bourns.com

Product Dimensions



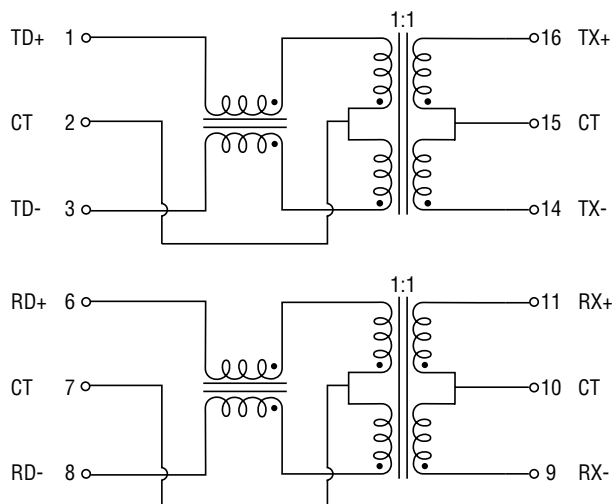
Recommended Layout



How To Order

Model	SM13072 A P E L
AEC-Q200 Qualified	
Automotive Grade	
Construction	P = Potted
Packaging	E = Tape and Reel (600 pcs./reel)
Termination	L = Cu/Ni/Sn (RoHS Compliant)

Electrical Schematic



*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.

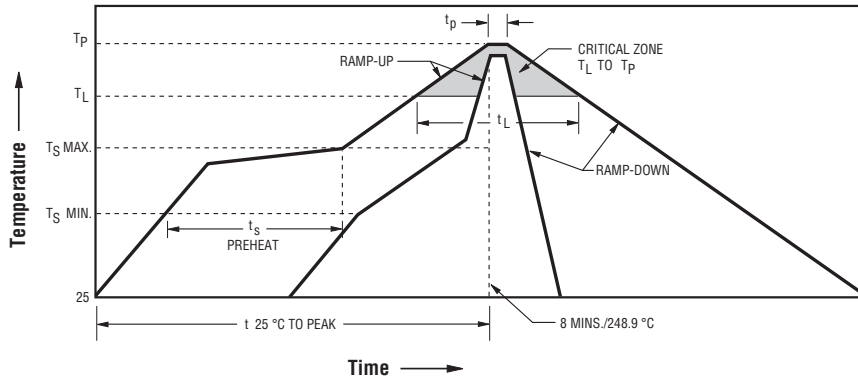
The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.

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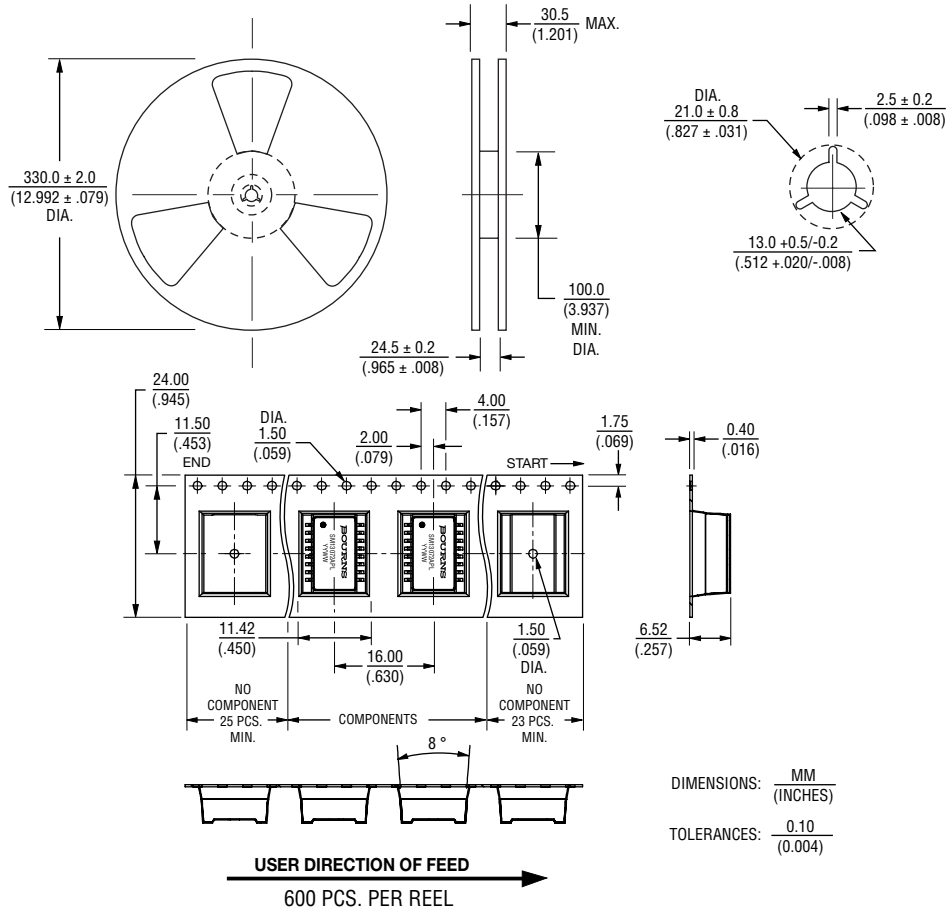
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Solder Profile



Ramp-up rate = 3 °C/sec. max.
 Ramp-down rate = 6 °C/sec. max.
 $T_L = 217 \text{ °C}$ $t_L = 60\text{-}150 \text{ sec.}$
 $T_P = 250 \text{ °C} \pm 3 \text{ °C}$
 Time within 5 °C of actual Peak Temp (t_p) = 20~40 sec.
 $T_S \text{ min} = 150 \text{ °C}$ $T_s \text{ max} = 200 \text{ °C}$
 $T_S \text{ min to } T_S \text{ max} = 60\text{-}180 \text{ sec.}$
 25 °C to Peak Temperature = 8 min. max.

Packaging Specifications



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$
 TOLERANCES: $\frac{0.10}{(0.004)}$