

HCTSM110304HAL

High Clearance and Creepage Transformer



***RoHS
AEC-Q200 COMPLIANT**

Features

- Working voltage up to 1200 VDC
- Hi-Pot: 5000 VAC, 1 mA, 60 s
- Reinforced insulation
- Clearance/creepage distance >11 mm
- Overvoltage Category II, Pollution Degree 2, up to 4 km above sea level
- IEC 60664-1, IEC/UL 62368-1
- AEC-Q200 compliant
- RoHS compliant*

Applications

- Battery Management Systems (BMS)
- Energy Storage Systems (ESS)
- High voltage/high current DC meters
- CAN interface digital input modules
- RS-485 and RS-232 isolation
- Designed for isolation power supplies using TI SN6501 & SN6505B

Sustainability

- Small size reduces material use
- ISO 14001, low-impact energy
- Responsibly sourced and produced
- Meets EU 94/62/EC standards

Product Overview

The Bourns® Model HCTSM110304HAL push-pull isolation transformer provides reinforced insulation with a working voltage up to 1200 V, a creepage/clearance distance of 11 mm+, 5000 VAC Hi-Pot, up to 250 mA in parallel output and a partial discharge

test level at $U_t = 1600$ V. This model is AEC-Q200 compliant and automotive grade for exceptional reliability and is designed for isolation power supplies using Texas Instruments SN6501 & SN6505B.

Electrical Specifications

Specification	Value
Primary Inductance (1-4) (100 kHz/1 V) with Pin 2, 3 Shorted	80 μ H min.
Leakage Inductance (1-4) (100 kHz/1 V) with Pin 2, 3 Shorted and Pin 5, 6, 7, 8 Shorted	5.0 μ H max.
DCR 1-2, 3-4 6-5, 8-7	0.18 Ω max. 0.25 Ω max.
Turns Ratio (8-5):(1-4) with Pin 2, 3 Shorted and Pin 6, 7 Shorted	1.33 $\pm$ 3 %
Hi-pot (PRI.-SEC.) (1 mA, 60 s)	5000 VAC
Working Voltage	Up to 1200 VDC
Operating Temperature	-40 °C to +125 °C
Storage Temperature	-25 °C to +85 °C
Clearance/Creepage Distance of Primary to Secondary	11 mm min.
Moisture Sensitivity Level	1
ESD Classification (HBM)	N/A

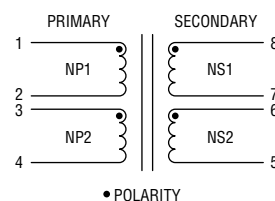
How to Order

Model **HCTSM110304H A L - E**
 AEC-Q200 Compliancy Designator _____
 RoHS Compliancy Designator _____
 Packaging _____
 E = 200 pcs. per 13-inch Reel

Packaging Specifications

Packaging	Pieces per 13-inch Reel
Tape & Reel	200

Electrical Schematic



Contact Information

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* RoHS Directive 2015/863, Mar 31, 2015 and Annex.
 Specifications are subject to change without notice.
 Users should verify actual device performance in their specific applications.

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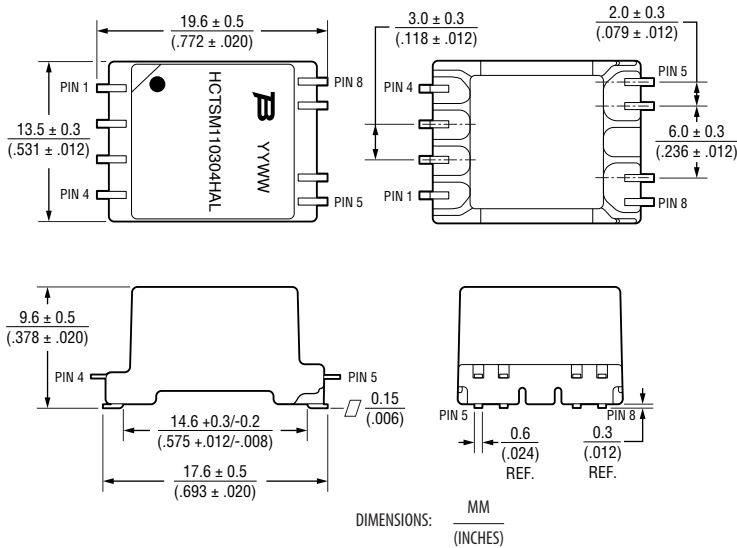
HCTSM110304HAL

High Clearance and Creepage
Transformer

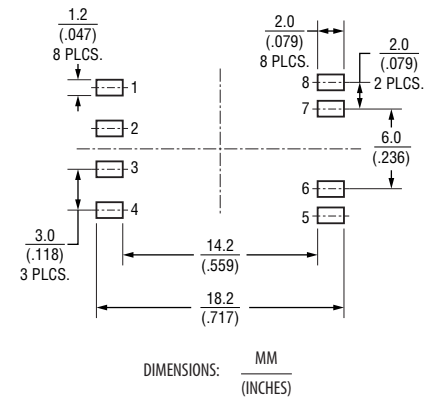


*RoHS
AEC-Q200 COMPLIANT

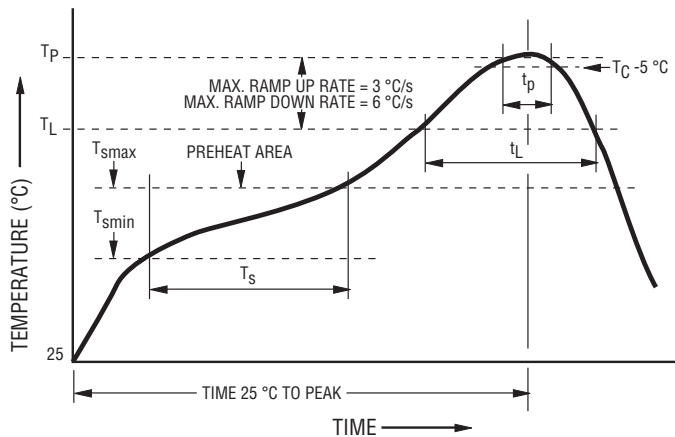
Product Dimensions



Recommended Layout



Solder Profile



Profile Feature	Pb-Free Assembly
Preheat / Soak:	
Temperature Min. (T_{smin})	150 °C
Temperature Max. (T_{smax})	200 °C
Time (t_s) from (T_{smin} to T_{smax})	60~120 seconds
Ramp Up Rate (T_L to T_p)	3 °C / second max.
Liquidous Temperature (T_L)	217 °C
Time (t_L) maintained above T_L	60~150 seconds
Peak Package Body Temperature (T_p)	$T_p \leq T_C$ (see table below)
Time (t_p)* within 5 °C of the specified classification temperature (T_C)	< 30 seconds
Ramp Down Rate (T_p to T_L)	6 °C / second max.
Time 25 °C to Peak Temperature	8 minutes max.

Pb-Free Process Classification Temperatures (T_C)

Package Thickness	Volume mm ³ < 350	Volume mm ³ 350 - 2000	Volume mm ³ > 2000
< 1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
> 2.5 mm	250 °C	245 °C	245 °C

NOTE:

The product has been tested under this reflow condition. Deviations from this, especially higher temperatures for longer duration, could impact performance.

Refer to IPC/JEDEC J-STD-020

HCTSM110304HAL

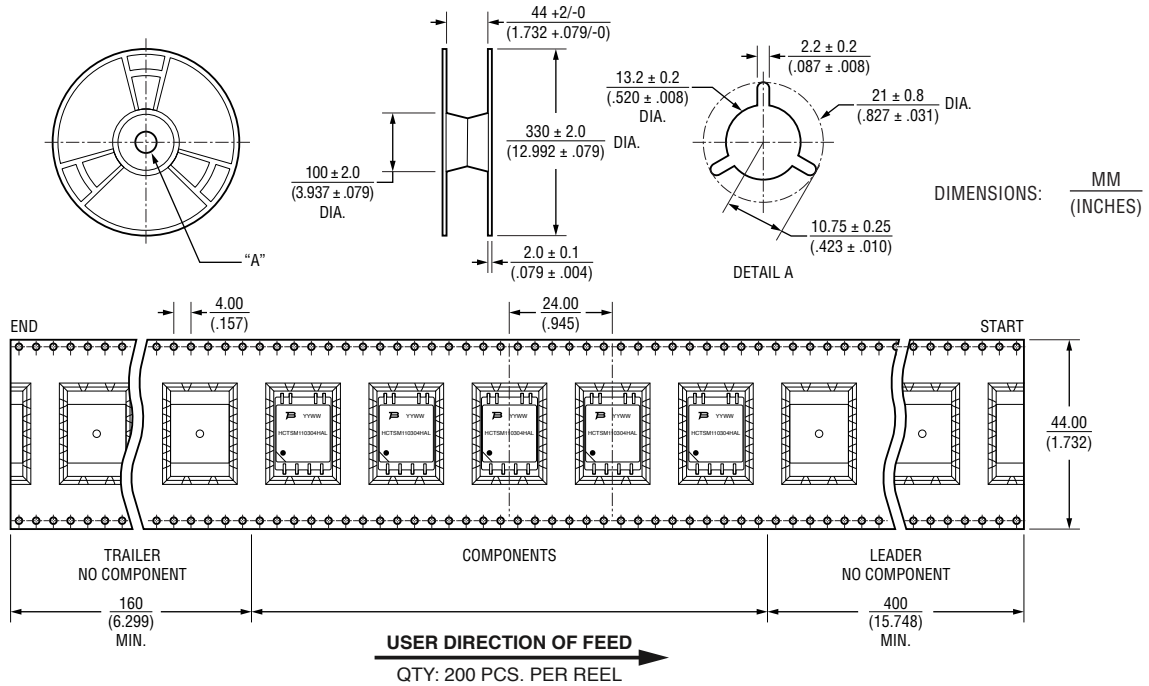
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Packaging Specifications

Specifications and tolerances comply with EIA-481 requirements.



REV. 01/26

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