

## Features

- Toroid core for high coupling and low radiation
- Complies with IEC 60950-1, IEC 62368-1 and IEC 60664-1
- cULus UL 62368-1 recognized, File No. [E515965](#) (six models)
- Reinforced insulation for working voltage of 800 Vrms, 1000 Vpeak

- Designed for isolation power supplies using TI SN6501 and SN6505B
- AEC-Q200 compliant
- RoHS compliant\*

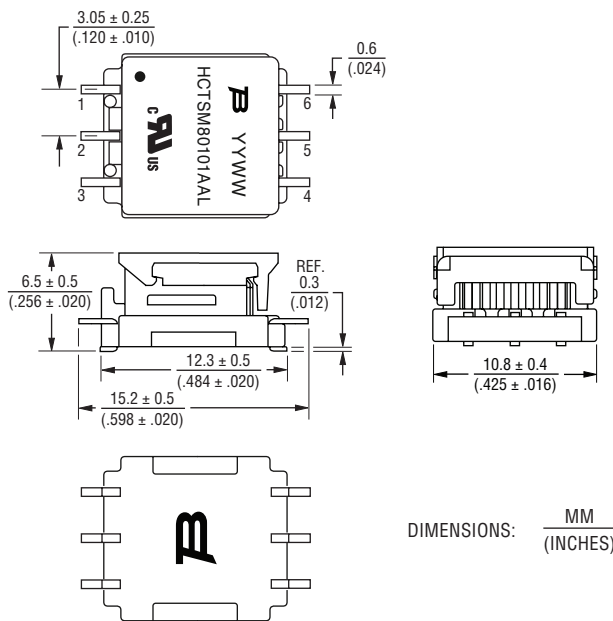
## HCTSM8 Series - High Clearance and Creepage Distance Transformers

### Electrical Specifications @ 25 °C

Bourns Part Number**	Primary Inductance @ 100 kHz	Leakage Inductance @ 100 kHz / 0.1 V (All Sec. Pins Shorted)	Turns Ratio P(1-3) : S(6-4)	Pri. (1-3) DCR (Ω) Max.	Sec. (6-4) DCR (Ω) Max.	UL Recognition
	L 1-3 (μH) Min.	Lk 1-3 (μH) Max.				
HCTSM80101AAL	250	0.8	1 : 1	0.30	0.20	✓
HCTSM80102AAL	250	0.6	1 : 2	0.30	0.35	✓
HCTSM80201AAL	250	1.2	2 : 1	0.30	0.15	✓
HCTSM80304BAL	300	0.6	3 : 4	0.30	0.30	
HCTSM80305BAL	300	0.6	3 : 5	0.30	0.30	
HCTSM80308BAL	300	0.7	3 : 8	0.50	0.85	
HCTSM80403AAL	250	0.8	4 : 3	0.30	0.20	✓
HCTSM80803AAL	250	1.8	8 : 3	0.30	0.15	✓
HCTSM80809AAL	250	0.6	8 : 9	0.30	0.25	✓
HCTSM80910BAL	300	0.9	9 : 10	0.30	0.25	
HCTSM81017CAL	350	0.9	10 : 17	0.42	0.48	

\*\*Add E or E1 part number suffix - See How to Order.

### Product Dimensions



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



**WARNING** Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

\*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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### Additional Information

Click these links for more information:



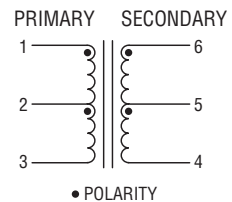
### General Specifications

Primary (1-3) E\*T Constant..11 V-μS min.  
 Rated Current.....350 mA AC  
 Hi-Pot: Primary/Secondary  
 .....5K Vdc, 60 seconds  
 Operating Temperature  
 .....-40 °C to +125 °C  
 (Temperature rise included)  
 Storage Temperature (Component)  
 .....-40 °C to +125 °C  
 Clearance/Creepage Distance  
 of Primary to Secondary ..... 8 mm min.  
 Level of Insulation..... Reinforced for a  
 working voltage of 800 Vrms,  
 1000 Vpeak, Material Group 1,  
 Overvoltage Category II, Pollution  
 degree 2, Altitude 2000 m  
 Moisture Sensivity Level..... 1  
 ESD Classification (HBM)..... N/A

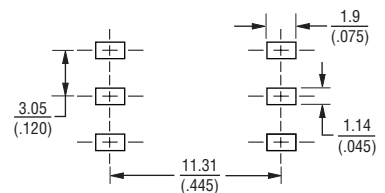
### Materials

Core.....Ferrite  
 Wire ... Enameled/triple-insulated copper  
 Terminal Finish .....Sn  
 Packaging..... 500 pcs. per 13-inch reel

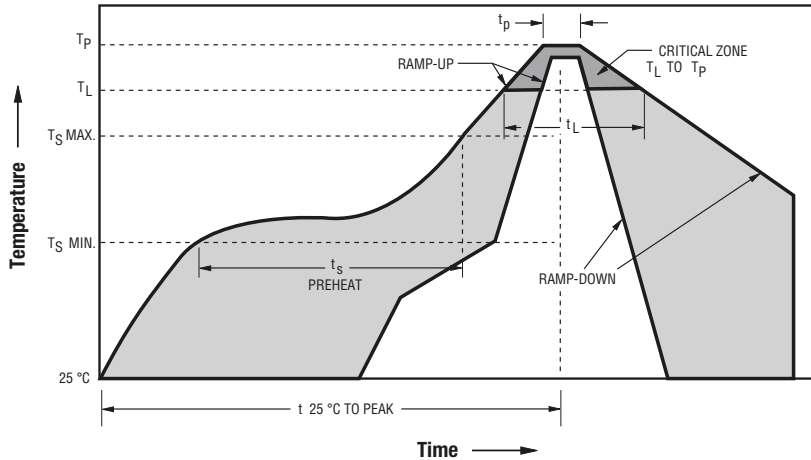
### Electrical Schematic



### Recommended Layout

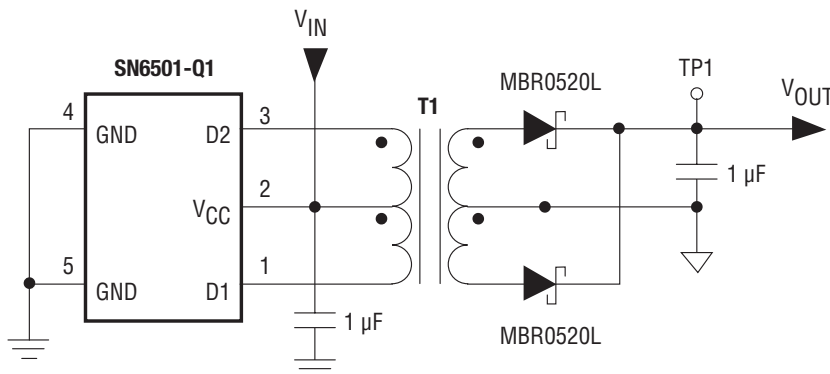


## Reflow Solder Profile



Profile Feature	Pb-Free Assembly
Average Ramp-Up Rate ( $T_{S_{max}}$ to $T_p$ )	3 °C / second max.
PREHEAT: Temperature Min. ( $T_{S_{min}}$ ) Temperature Max. ( $T_{S_{max}}$ ) Time ( $T_{S_{min}}$ to $T_{S_{max}}$ ) ( $t_s$ )	150 °C 200 °C 60~180 seconds
TIME MAINTAINED ABOVE: Temperature ( $T_L$ ) Time ( $t_L$ )	217 °C 60~150 seconds
Peak Temperature ( $T_p$ )	245-250 °C
Time within 5 °C of Actual Peak Temperature ( $t_p$ )	20~40 seconds
Ramp-Down Rate	6 °C / second max.
Time 25 °C to Peak Temperature	8 minutes max.

## Typical Application



## How to Order

**HCTSM80101A A L - \***

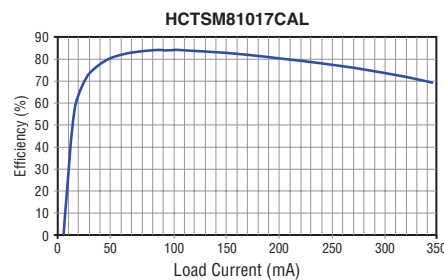
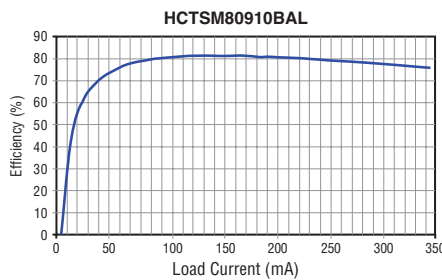
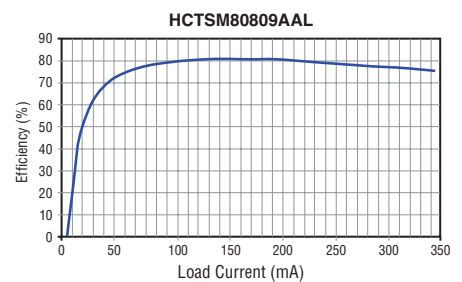
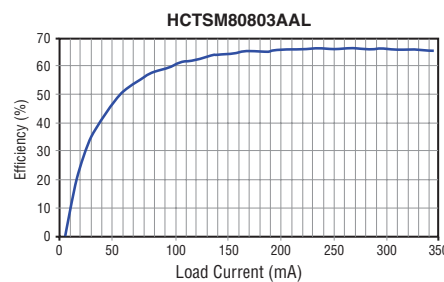
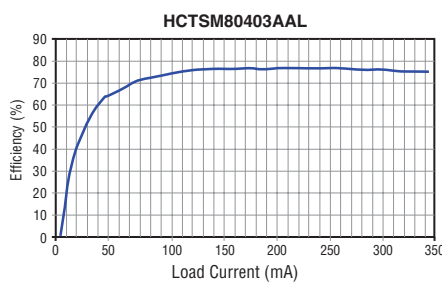
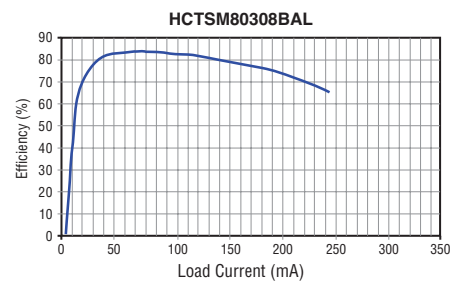
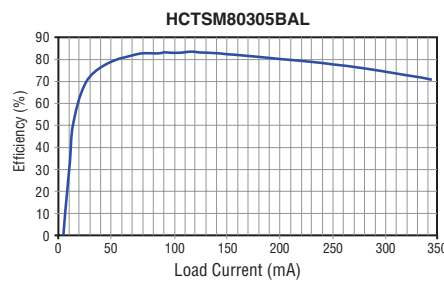
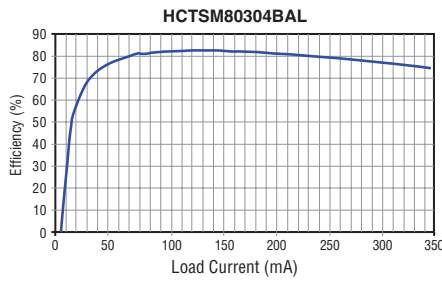
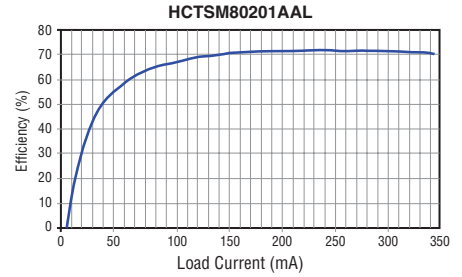
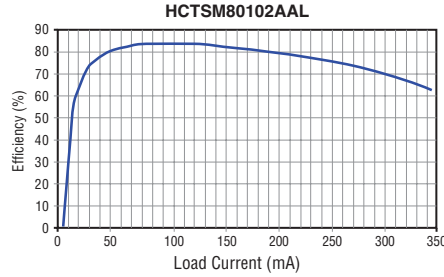
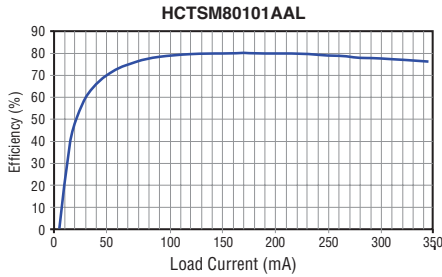
Model \_\_\_\_\_  
 AEC-Q200 Compliancy Designator \_\_\_\_\_  
 RoHS Compliancy Designator \_\_\_\_\_  
 Tape & Reel Packaging  
 E = 500 pcs. per 13-inch Reel,  
 5 Reels per Box,  
 MOQ/Mult: 2500 pcs./2500 pcs.  
 E1 = 500 pcs. per 13-inch Reel,  
 1 Reel per Box,  
 MOQ/Mult: 500 pcs./500 pcs.

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## Efficiency vs. Load Curves\*



\*Measured with circuit in Typical Application, 5 VDC input, 0-350 mA DC load,  $T_a = 20\text{ }^\circ\text{C}$

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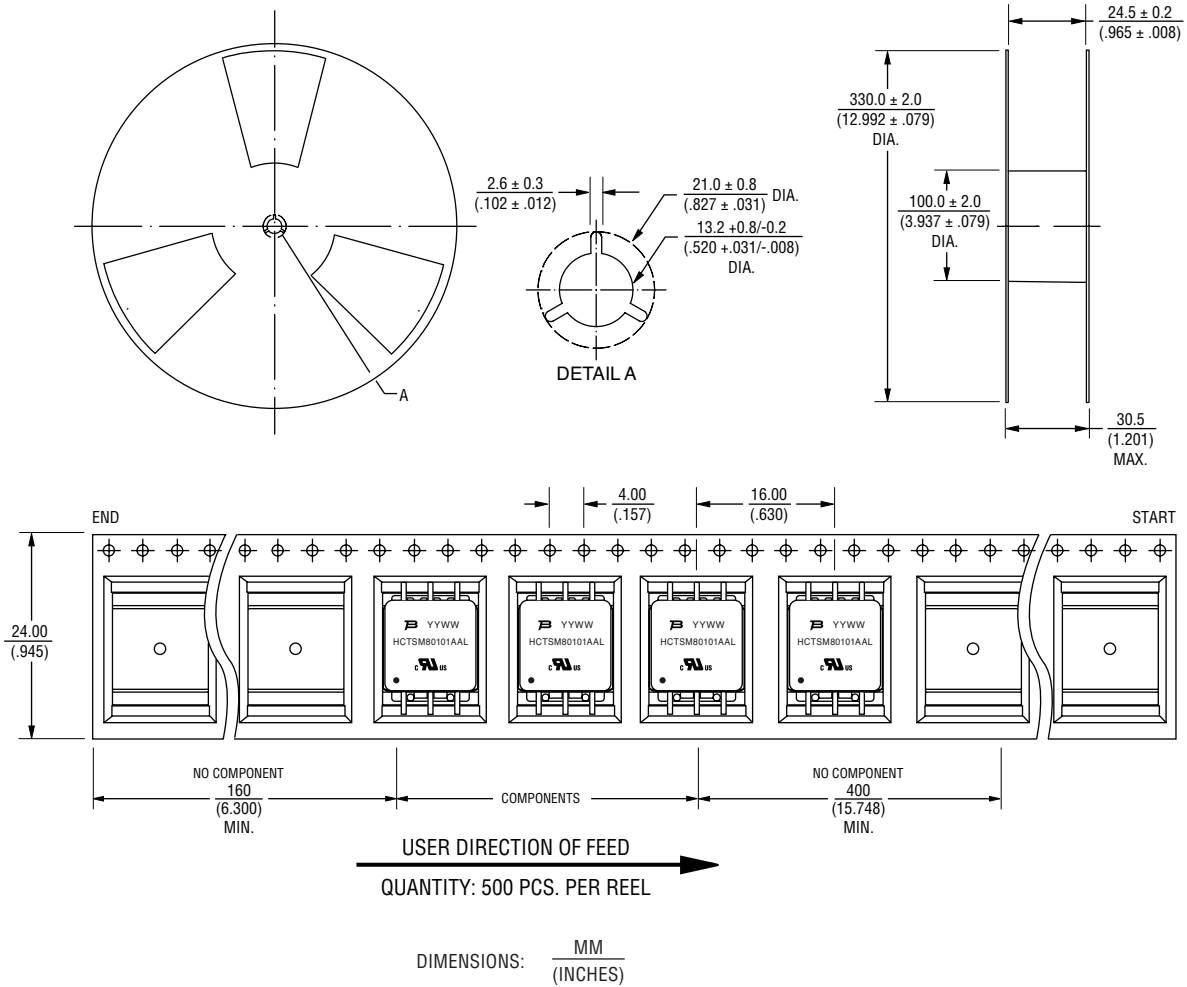
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# HCTSM8 Series - High Clearance and Creepage Distance Transformers

**BOURNS®**

## Packaging Specifications



REV. 05/22

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