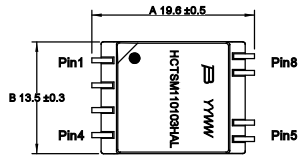
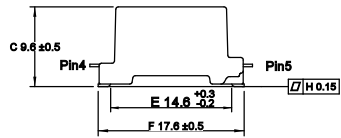


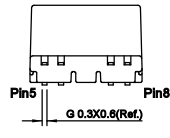
## MECHANICAL SPECIFICATIONS:



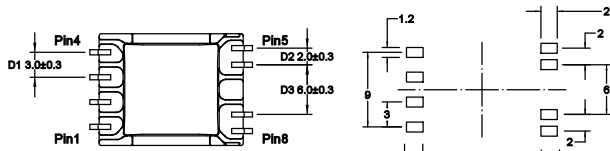
Top view



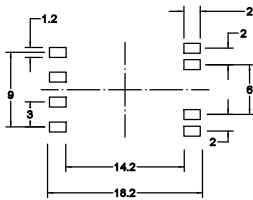
Main view



Side view

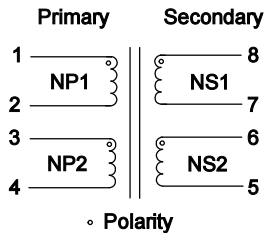


Bottom view



Recommended PCB layout  
(Top View)

## SCHEMATIC :



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Asia-Pacific: Tel: +886-2 2562-4117 Fax: +886-2 2562-4116

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## ELECTRICAL SPECIFICATION @25°C:

1. Primary Inductance(1V at 100kHz):  $L(1-4)=80\mu\text{H}$  Min. , with Pin 2 and 3 tied
2. Leakage Inductance (1V at 100kHz):  $L(1-4,\text{tie Pin } 2,3;\text{short Pin } 5,6,7,8)=6.0\mu\text{H}$  Max.
3. DC Resistance:
  - (1-2): 0.18  $\Omega$  Max.
  - (3-4): 0.18  $\Omega$  Max.
  - (6-5): 0.8  $\Omega$  Max.
  - (8-7): 0.8  $\Omega$  Max.
4. Turns Ratio:
  - (8-5):(1-4)= $3.0\pm 3\%$ , with Pin2,3 tied and Pin6,7 tied.
5. Hi-Pot (P-S): 5kV AC,1mA ,60S

## GENERAL INFORMATION:

1. AEC-Q200 compliant.
2. To test the AEC-Q200 at least every 2 years.
3. RoHS and REACH compliant
4. Compliant to J-STD-020: level 1, no moisture sensitive.(Tp:250°C Max.)
5. Operating temperature range:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  including temperature rise.
6. Storage temperature:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  (Component).
7. Clearance and creepage distance between primary and secondary: 11 mm Min.
8. The CTI  $\geq 600$  for material case and material sealed glue.
9. Partial discharge test base on IEC60664-1: 2000 V.
10. The dimension of terminal don't include the solder icicles.
11. Product scrap disposal based on the local laws and regulations.

## PACKAGING SPECIFICATION AND HOW TO ORDER:

HCTSM110103HAL-E — Bourns part No. with Tape & reel packaging ,  
200pcs/reel, 600pcs/standard box.

### HCTSM110103HAL-E

Bourns part number

AEC-Q200 compliant

RoHS compliant

Tape & reel packaging

**TITLE**  
High Clearance and Creepage Transformer

Customer Approval:

Customer Part No:

Bourns Part No:

HCTSM110103HAL

NO:	DESCRIPTION	DATE	BY	CHK	APPD
X5	Add the CTI $\geq 600$ and change AEC-Q200 pending to AEC-Q200 compliant.	2023/03/08	Joy	Howar	Haven
X4	Add coplanarity H	2021/10/27	Howar	Howar	Haven
X3	Add Insulation Specification	2021/10/13	Howar	Howar	Haven
X1	Initial release	2021/7/5	Howar	Howar	Haven

REVISIONS

UNITS:

M/M

DWG. NO.:

DSS-HCTSM110103HAL

DATE:

2023/03/08

SHEET 1/4

**BOURNS**®

**Insulation Specification:**

**Pre-Conditioning**

1. Storage at low temperature: 96h at -40°C
2. Storage at high temperature: 1000h at 125°C
3. Temperature shock: 50 cycles (1 cycle = 60min), 30min at -40°C / 30min at + 125°C, temperature change speed ≤30sec
4. Humid heat with 100Vdc: 96h at +40°C / 93%, apply 100Vdc throughout the complete test duration between the insulation (primary vs. secondary transformer side)
5. Humid heat: 48h at +40°C / 93%

**Insulation Tests**

6. Insulation resistance at 500V shall exceed 100MΩ
7. High withstand voltage: all transformer must sustain 1910Vac (50Hz) for 60s, trise and tfall of the generator must remain below 3sec
8. Partial discharge test: provide partial discharge less than 5pC at 2000V
9. Surge impulse test: sustain 5x +7.2kV and 5x -7.2kV without any damage. Generator impedance shall be less than 500Ω.


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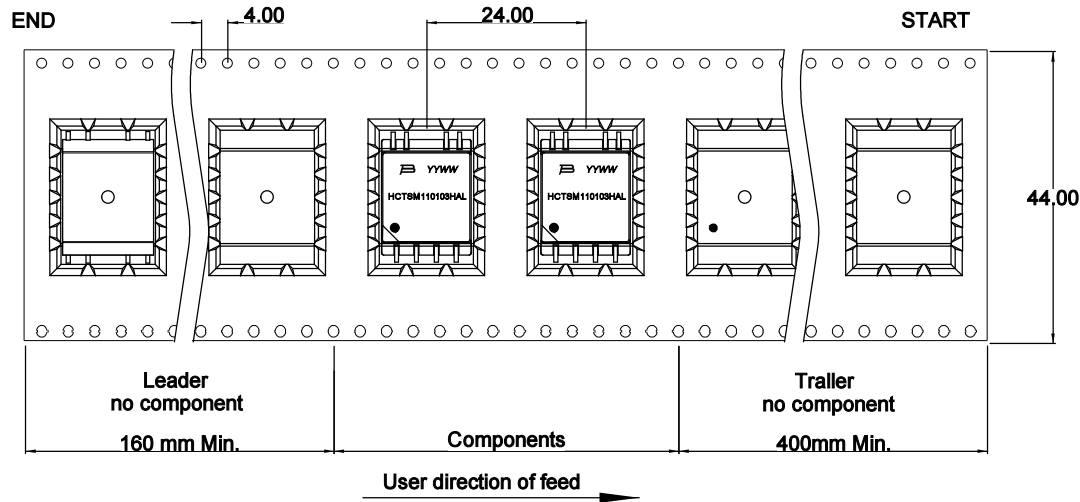
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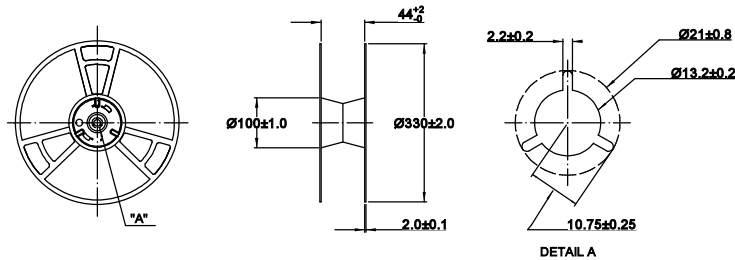
	<b>TITLE</b> High Clearance and Creepage Transformer	<b>Customer Approval:</b>		X5	Add the CT12600 and change AEC-Q200 pending to AEC-Q200 compliant.	2023/03/08	Joy	Howar	Haven	UNITS:	M/M
				X4	Add coplanarity H	2021/10/27	Howar	Howar	Haven	DWG. NO.:	DSS-HCTSM110103HAL
		<b>Customer Part No:</b>		X3	Add Insulation Specification	2021/10/13	Howar	Howar	Haven	DATE:	2023/03/08
		<b>Bourns Part No:</b>	<b>HCTSM110103HAL</b>	X1	Initial release	2021/7/5	Howar	Howar	Haven		
				NO:	DESCRIPTION	DATE	BY	CHK	APPD		<b>SHEET 2/4</b>
<b>REVISIONS</b>											

# PACKING INFORMATION:

## 1.Configuration:



## 2.Reel mechanical dimension:



Package outlines and tolerances comply with EIA-481 requirement.

## Bourns Worldwide Contacts:

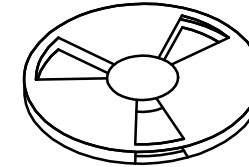
Asia-Pacific: Tel: +886-2 2562-4117 Fax: +886-2 2562-4116

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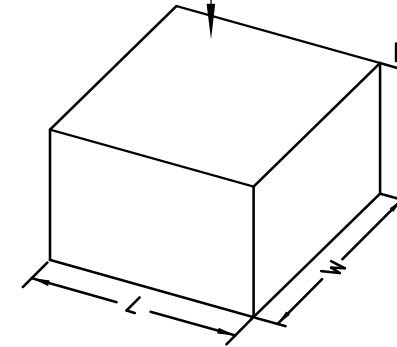
The Americas: Tel: +1-951 781 5500 Fax: +1-951 781-5700

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## 3.Packing Method



Packing : Tape & reel  
1 reel : 200pcs



Box size for type E Packaging:  
355(L)X350(W)X175(H) mm  
3 reels/standard box : 600pcs

Each reel should be labeled with the BXL standard label.

**TITLE**  
High Clearance and Creepage Transformer

**Customer Approval:**

**BOURNS**®

**Customer Part No:**

**Bourns Part No:**

**HCTSM110103HAL**

NO:	DESCRIPTION	DATE	BY	CHK	APPD
X5	Add the CT12600 and change AEC-Q200 pending to AEC-Q200 compliant.	2023/03/08	Joy	Howar	Haven
X4	Add coplanarity H	2021/10/27	Howar	Howar	Haven
X3	Add Insulation Specification	2021/10/13	Howar	Howar	Haven
X1	Initial release	2021/7/5	Howar	Howar	Haven

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UNITS:	M/M
DWG. NO.:	DSS-HCTSM110103HAL
DATE:	2023/03/08
SHEET 3/4	

Automotive

### Prototype Product / Sample Disclaimer and Limitation of Liability

Bourns® part number: HCTSM110103HAL

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<b>BOURNS</b> ® TITLE High Clearance and Creepage Transformer	Customer Approval:		X5	Add the CT12600 and change AEC-Q200 pending to AEC-Q200 compliant.	2023/03/08	Joy	Howar	Haven	UNITS:	M/M
			X4	Add coplanarity H	2021/10/27	Howar	Howar	Haven	DWG. NO.:	DSS-HCTSM110103HAL
	Customer Part No:		X3	Add Insulation Specification	2021/10/13	Howar	Howar	Haven	DATE:	2023/03/08
	Bourns Part No:	HCTSM110103HAL	X1	Initial release	2021/7/5	Howar	Howar	Haven		
			NO:	DESCRIPTION	DATE	BY	CHK	APPD		SHEET 4/4
<b>REVISIONS</b>										