Features
- Toroid core for high coupling and low radiation
- Complies with IEC 60950-1, IEC 62368-1 and IEC 60664-1
- Reinforced insulation for working voltage of 800 V
- Designed for isolation power supplies using TI SN6501 and SN6505B
- AEC-Q200 compliant
- RoHS compliant*

HCT Series - High Clearance and Creepage Distance Transformers

Electrical Specifications @ 25 °C

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

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

General Specifications
- Primary (1-3) E*T Constant..11 V-µS min.
- Rated Current...................350 mA AC
- Hi-Pot: Primary/Secondary ..........4.2k VAC for 1 minute
- 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 Vac,
  Material Group 1, Pollution degree 2,
  Altitude 2000 m
- Moisture Sensitivity Level...............1
- ESD Classification (HBM)...............N/A

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

Electrical Schematic

Recommended Layout

Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.
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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.

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**Typical Application**

**How to Order**

<table>
<thead>
<tr>
<th>HCTSM80101A A L - *</th>
</tr>
</thead>
</table>

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.
Efficiency vs. Load Curves*

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