Current Sense Transformers CST2010

- AEC-Q200 Grade 1 (−40°C to +125°C)
- Sensed current up to 47 A; Designed for frequency range up to 1 MHz and above.
- Very low primary DC resistance
- 1500 Vrms, one minute isolation (hipot) between windings

Core material Ferrite
Terminations RoHS compliant tin-silver over tin over nickel over phos bronze (pins 1-10); RoHS compliant matte tin over nickel over copper (pins 11-12)
Weight 4.13 g
Ambient temperature −40°C to +125°C
Maximum part temperature +165°C (ambient + temp rise)
Storage temperature Component: −40°C to +165°C.
Tape and reel Packaging: −40°C to +80°C
Resistance to soldering heat Max three 40 second reflows at +260°C; parts cooled to room temperature between cycles
Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)
Packaging 300/13″ reel; Plastic tape: 32 mm wide, 0.5 mm thick, 20 mm pocket spacing, 10.6 mm pocket depth
PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

### Specifications

<table>
<thead>
<tr>
<th>Part number1</th>
<th>Turns (N)</th>
<th>Inductance2 ±30% (mH)</th>
<th>DCR max (Ohms)</th>
<th>Frequency range3 (kHz)</th>
<th>Volt-time product4 (Vusec)</th>
<th>Sensed current5 Iout (A)</th>
<th>Terminating resistance Rterm (Ohms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST2010-020L</td>
<td>1:20</td>
<td>0.34</td>
<td>0.00036</td>
<td>0.180</td>
<td>10 – &gt;1000</td>
<td>50.8</td>
<td>47</td>
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<td>CST2010-030L</td>
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<td>0.76</td>
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<td>0.265</td>
<td>7 – &gt;1000</td>
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<td>47</td>
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<tr>
<td>CST2010-040L</td>
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<td>1.36</td>
<td>0.00036</td>
<td>0.560</td>
<td>5 – &gt;1000</td>
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<tr>
<td>CST2010-050L</td>
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<td>2.12</td>
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<td>0.705</td>
<td>4 – &gt;1000</td>
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<tr>
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<td>3.06</td>
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<td>0.850</td>
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<td>1.00</td>
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<tr>
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<td>13.3</td>
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<td>2 – &gt;1000</td>
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<td>19.2</td>
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<td>1 – &gt;1000</td>
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</table>

1. When ordering, please specify packaging code:

   CST2010-200LD

   Packaging: D = 13″ machine-ready reel. EIA-481 embossed plastic tape (300 parts per full reel).
   B = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from B to D.

2. Inductance measured between secondary pins at 1 kHz, 0.1 Vrms, 0 Adc.
3. For specific questions regarding frequency range, please contact us at cst@coilcraft.com.
4. Volt-time product is for the secondary, between pin 2 and 4.
5. Terminating resistance (R_t) value is based on 1 Volt output with 40 Amps flowing through the primary. Varying terminating resistance increases or decreases output Voltage/Ampere according to the following equation:

   \[ R_t = V_{out} \times N_{sec}/I_{in} \]

6. Primary current of 47 A causes approximately 40°C temperature rise from 25°C ambient. Higher current causes a greater temperature rise (see Temperature Rise vs Current curve).

7. Electrical specifications at 25°C.

   Refer to Doc 362 “Soldering Surface Mount Components” before soldering.
CST2010 SMT Current Sense Transformers

Temperature Rise vs Current

![Graph showing temperature rise vs current](image)

**Dimensions**

![Diagram showing dimensions](image)

Dimensions are in inches (mm):
- Width: 0.110 x 0.240 (2.80 x 6.10)
- Height: 0.0236 (0.60)
- Depth: 0.100 (2.54)

**Recommended Land Pattern**

![Diagram showing recommended land pattern](image)

- Dimensions: 0.168 x 0.285 (4.27 x 7.24)
- Pins: 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1

- Dot indicates pin 1

Note: This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check website for latest information.