Current Sense Transformers  **CST1, CST2**

- For use up to 1 MHz
- AEC-Q200 Grade 1 (−40°C to +125°C)
- Two pinouts to meet the requirements of different applications.
- Low primary DC resistance
- 500 Vrms, one minute isolation (hitop) between windings.

**Designer’s Kit C389** contains 2 each of each part

**Core material** Ferrite

**Terminations** See Note 1.

**Weight** 0.4 g

**Ambient temperature** −40°C to +125°C

**Maximum part temperature** 165°C (ambient + temp rise)

**Storage temperature** Component: −40°C to +165°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)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)** 10.06 per billion hours / 9.940E+07 hours, calculated per Telcordia SR-332

**Packaging** 250 “7″ reel; 1000 “13″ reel; Plastic tape: 16 mm wide, 0.35 mm thick, 12 mm pocket spacing, 5.6 mm pocket depth

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf

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### Specifications

<table>
<thead>
<tr>
<th>Part number</th>
<th>Turns (N)</th>
<th>Inductance (µH)</th>
<th>DCR (Ohms)</th>
<th>Frequency range (kHz)</th>
<th>Volt-time product (V-µsec)</th>
<th>Sensed current I sec max (A)</th>
<th>Terminating resistance R Ts (Ohms)</th>
<th>Color dot</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST1</td>
<td>CST2</td>
<td>Pri:sec</td>
<td>Pri ref</td>
<td>Sec max</td>
<td>46 – 1000</td>
<td>10.8</td>
<td>1.0</td>
<td>Red</td>
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<tr>
<td>CST1-020L_</td>
<td>CST2-020L_</td>
<td>1:20</td>
<td>81</td>
<td>0.0007</td>
<td>0.400</td>
<td>31 – 1000</td>
<td>16.2</td>
<td>2.0</td>
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<tr>
<td>CST1-030L_</td>
<td>CST2-030L_</td>
<td>1:30</td>
<td>180</td>
<td>0.0007</td>
<td>0.870</td>
<td>23 – 1000</td>
<td>21.6</td>
<td>2.5</td>
</tr>
<tr>
<td>CST1-040L_</td>
<td>CST2-040L_</td>
<td>1:40</td>
<td>320</td>
<td>0.0007</td>
<td>1.14</td>
<td>19 – 1000</td>
<td>27.0</td>
<td>2.0</td>
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<tr>
<td>CST1-050L_</td>
<td>CST2-050L_</td>
<td>1:50</td>
<td>500</td>
<td>0.0007</td>
<td>1.50</td>
<td>15 – 1000</td>
<td>32.4</td>
<td>3.0</td>
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<tr>
<td>CST1-060L_</td>
<td>CST2-060L_</td>
<td>1:60</td>
<td>730</td>
<td>0.0007</td>
<td>1.98</td>
<td>13 – 1000</td>
<td>37.8</td>
<td>3.5</td>
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<tr>
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<td>CST2-070L_</td>
<td>1:70</td>
<td>980</td>
<td>0.0007</td>
<td>4.75</td>
<td>9 – 1000</td>
<td>54.0</td>
<td>5.0</td>
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<tr>
<td>CST1-090L_</td>
<td>CST2-090L_</td>
<td>1:90</td>
<td>1900</td>
<td>0.0007</td>
<td>6.50</td>
<td>7 – 1000</td>
<td>67.5</td>
<td>6.3</td>
</tr>
</tbody>
</table>

1. When ordering, please specify termination and packaging codes:

   CSTX-125LC

**Termination**: L = RoHS compliant tin-silver over tin over nickel over phosphorous bronze (pins 1 – 6); RoHS compliant matte tin over nickel over copper (pins 7 – 8).

**Special order**: S = non-RoHS tin-lead (63/37) over tin over nickel over copper (pins 1 – 6); non-RoHS tin-lead over gold over nickel over phos bronze (pins 7 – 8).

**Packaging**: C = 7″ machine-ready. EIA-481 embossed plastic tape (250 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).

**Packaging**: D = 13″ machine-ready. EIA-481 embossed plastic tape. Factory order only, not stocked (1000 parts per full reel).

**Packaging**: 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 C.

2. Inductance measured between secondary pins at 100 kHz, 0.1 Vrms.

3. Volt-time product is for the secondary, between pin 6 and 4 for CST1 and between pin 1 and 3 for CST2.

4. Primary current of 20 A causes approximately 40°C temperature rise from 25°C ambient. Higher current causes a greater temperature rise (see Temperature Rise vs Current curve).

5. Terminating resistance (R Ts) value is based on 1 Volt output with 20 Amps flowing through the primary. Varying terminating resistance increases or decreases output Voltage/Ampere according to the following equation: R Ts (Ohms) = V out x N sec / I in.

6. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

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The product may not be used in medical or high risk applications without prior Coilcraft approval.

Specification subject to change without notice.

Please check web site for latest information.
CST Series Current Sense Transformers

Temperature Rise vs Current

Pinouts

Dimensions

Temperature rise (from 25°C)

Current (Arms)

0  2  4  6  8  10  12  14  16  18  20

0  5  10  15  20  25  30  35  40

Dimensions are in inches / mm

Recommended Land Pattern

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