# Current Sense Transformers CST1211

- Designed for use up to 1 MHz and above
- AEC-Q200 Grade 1 (−40°C to +125°C)
- Insulation distances in compliance with IEC 60664 (basic insulation, working voltage Vrms = 800 V)
- UL Class 180 (H) insulating materials, UL 1446 Class F³
- Bobbin plastic UL 94-V0, CTI PLC3
- Pri/Sec: 9 mm creepage and 8 mm clearance⁹

### Core material
- Ferrite

### Environmental
- RoHS compliant

### Terminations
- Tin-silver-copper over tin over nickel over copper

### Weight
- 2.6 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

### Moisture Sensitivity Level (MSL)
- 1 (unlimited floor life at <30°C / 85% relative humidity)

### Packaging
- 350/13″ machine-ready reel.
- EIA-481 embossed plastic tape (350 parts per full reel).
- Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).

### Inductance measured between secondary pins at 100 kHz, 0.1 Vrms, 0.1 A dc.

### For specific questions regarding frequency range, please contact us at cst@coilcraft.com.

### 3000 Vrms, one minute isolation (hipot) between windings.

### Volt-time product is for the secondary, between pin 4 and 5.

### Primary current of 28 A causes less than 40°C temperature rise from 25°C ambient. Higher current causes a greater temperature rise (see Temperature Rise vs Current curve).

### Terminating resistance (R\(_T\)) value is based on 1 Volt output with 28 Amps flowing through the primary. Varying terminating resistance increases or decreases output Voltage/Ampere according to the following equation:

\[
R_T = \frac{V_{out} \times N_{sec}}{I_{in}}
\]

### UL 1446 Class F (155°C) Insulation System (UL File E83628 CC-5D marking).

### Creepage distance: Pri/Sec: 9 mm; Pri/Core: 5 mm

### Clearance distance: Pri/Sec: 8 mm; Pri/Core: 4 mm.

### Electrical specifications at 25°C.

### Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

### Specifications

<table>
<thead>
<tr>
<th>Part number¹</th>
<th>Turns (N)</th>
<th>DCR max (Ohms)</th>
<th>Frequency range² (kHz)</th>
<th>Isolation³ (Vrms)</th>
<th>Volt-time product⁴ (Vµsec)</th>
<th>Sensed current I₅₆ (A)</th>
<th>Terminating resistance R₇² (Ohms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST1211-050LD</td>
<td>1:50</td>
<td>1.7</td>
<td>0.00153</td>
<td>33 – 1000</td>
<td>106.0</td>
<td>28</td>
<td>1.8</td>
</tr>
<tr>
<td>CST1211-070LD</td>
<td>1:70</td>
<td>3.0</td>
<td>0.00153</td>
<td>17 – 1000</td>
<td>212.0</td>
<td>28</td>
<td>2.5</td>
</tr>
<tr>
<td>CST1211-100LD</td>
<td>1:100</td>
<td>7.0</td>
<td>0.00153</td>
<td>13 – 1000</td>
<td>265.0</td>
<td>28</td>
<td>3.6</td>
</tr>
<tr>
<td>CST1211-125LD</td>
<td>1:125</td>
<td>11.0</td>
<td>0.00153</td>
<td>11 – 1000</td>
<td>424.0</td>
<td>28</td>
<td>4.5</td>
</tr>
<tr>
<td>CST1211-200LD</td>
<td>1:200</td>
<td>32.0</td>
<td>0.00153</td>
<td>28 – 1000</td>
<td>928.0</td>
<td>28</td>
<td>7.1</td>
</tr>
</tbody>
</table>

1. Packaging: D = 13″ machine-ready reel. EIA-481 embossed plastic tape (350 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).

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

3. For specific questions regarding frequency range, please contact us at cst@coilcraft.com.

4. 3000 Vrms, one minute isolation (hipot) between windings.

5. Volt-time product is for the secondary, between pin 4 and 5.

6. Primary current of 28 A causes less than 40°C temperature rise from 25°C ambient. Higher current causes a greater temperature rise (see Temperature Rise vs Current curve).

7. Terminating resistance (R\(_T\)) value is based on 1 Volt output with 28 Amps flowing through the primary. Varying terminating resistance increases or decreases output Voltage/Ampere according to the following equation: R\(_T\) = V\(_{out}\) x N\(_{sec}\)/I\(_{in}\).

8. UL 1446 Class F (155°C) Insulation System (UL File E83628 CC-5D marking).

9. Creepage distance: Pri/Sec: 9 mm; Pri/Core: 5 mm

10. Clearance distance: Pri/Sec: 8 mm; Pri/Core: 4 mm.

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CST1211 Series SMT Current Sense Transformers

Temperature Rise vs Current

Temperature rise vs Current (in °C)

Current (Ams)

0 5 10 15 20 25 30 35 40

0 5 10 15 20 25 30 35 40

Dimensions are in inches (mm)

Recommended Land Pattern

AEC Q200 125°C