Current Sense Transformers CST2020

- AEC-Q200 Grade 1 (−40°C to +125°C)
- Sensed current up to 40 A
- Frequency range 400 Hz – to 1 MHz and above
- Very low primary DC resistance
- Meets Reinforced Insulation per UL 60950-1
- 4000 Vrms, one minute isolation (hipot) between windings

Core material Ferrite
Terminations Tin-silver-copper over tin over copper over steel
(pins 1 – 3); Tin-silver-copper over tin over nickel over copper (pins 4 – 5)
Weight 7 – 8.5 g
Ambient temperature −40°C to +125°C
Maximum part temperature +165°C (ambient + temp rise)
Storage temperature Component: −40°C to +165°C.
Tray packaging: −40°C to +80°C
Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)
Packaging 100 per tray
PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

<table>
<thead>
<tr>
<th>Part number</th>
<th>Turns (N)</th>
<th>Inductance1 (mH)</th>
<th>DCR max (Ohms)</th>
<th>Frequency range2 (kHz)</th>
<th>Volt-time product3 (Vµsec)</th>
<th>Sensed current Iop 4 max (A)</th>
<th>Terminating resistance RT 5 (Ohms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CST2020-070L</td>
<td>1:70</td>
<td>3.46</td>
<td>0.000845</td>
<td>0.83</td>
<td>1.8 – &gt;1000</td>
<td>277</td>
<td>40</td>
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<tr>
<td>CST2020-100L</td>
<td>1:100</td>
<td>7.07</td>
<td>0.000844</td>
<td>1.23</td>
<td>1.3 – &gt;1000</td>
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<td>40</td>
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<tr>
<td>CST2020-200L</td>
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<td>28.28</td>
<td>0.000846</td>
<td>3.95</td>
<td>0.60 – &gt;1000</td>
<td>791</td>
<td>40</td>
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<tr>
<td>CST2020-300L</td>
<td>1:300</td>
<td>63.63</td>
<td>0.000874</td>
<td>7.84</td>
<td>0.40 – &gt;1000</td>
<td>1186</td>
<td>40</td>
</tr>
</tbody>
</table>

1. Inductance measured between secondary pins at 10 kHz, 0.1 Vrms, 0 Adc.
2. For specific questions regarding frequency range, please contact us at cst@coilcraft.com.
3. Volt-time product is for the secondary, between pin 3 and 1.
4. Primary current of 40 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).
5. Terminating resistance (RT) 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: RT = Vout × Nsec/Iin.
6. Electrical specifications at 25°C.

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

Typical Circuit

I_in (1 turn)  
[Diagram of the typical circuit with labeled terminals and components]
CST2020 Current Sense Transformers

Temperature Rise vs Current

Temperature rise (from 25°C) vs Current (Arms)

Diagram of CST2020 Transformer with specifications:
- Dot indicates pin 1
- Dash number
- Internal code

Dimensions are in:
- **inches**
- **mm**

Recommended PC Board Layout

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Specification subject to change without notice
Please check website for latest information