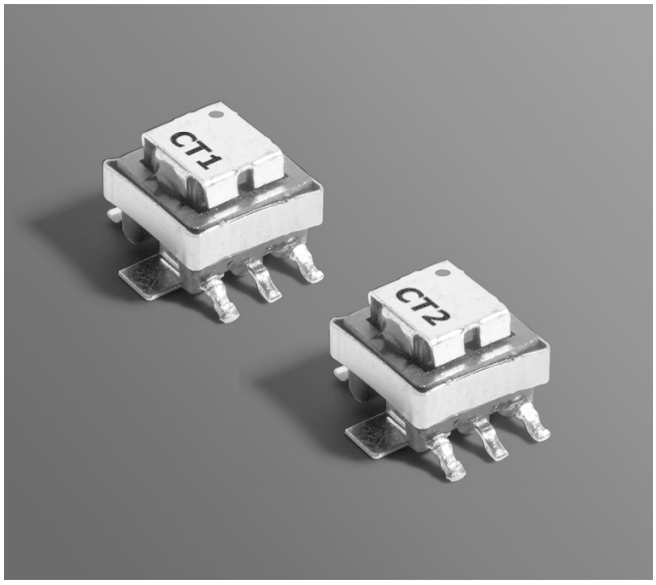
Current Sense Transformers CST1, CST2



- For use up to 1 MHz
- AEC-Q200 Grade 1 qualified (–40°C to +125°C ambient)
- Two pinouts to meet the requirements of different applications.
- Low primary DC resistance
- 500 Vrms, one minute isolation (hipot) 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.
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)
Failures in Time (FIT) / Mean Time Between Failures (MTBF) 38 per billion hours / 26,315,789 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.

Part number[1]		Turns (N)	Inductance[2]	DCR (Ohms)		Frequency range	Volt-time product[3]	Sensed current I_{in}[4]	Terminating resistance R_T[5]	Color
CST1	CST2	pri:sec	min (µH)	Pri ref	Sec max	(kHz)	(V-µsec)	max (A)	(Ohms)	dot
CST1-020L_	CST2-020L_	1:20	81	0.0007	0.400	46 – 1000	10.8	20	1.0	Red
CST1-030L_	CST2-030L_	1:30	180	0.0007	0.870	31 – 1000	16.2	20	1.5	Orange
CST1-040L_	CST2-040L_	1:40	320	0.0007	1.14	23 – 1000	21.6	20	2.0	Yellow
CST1-050L_	CST2-050L_	1:50	500	0.0007	1.50	19 – 1000	27.0	20	2.5	Green
CST1-060L_	CST2-060L_	1:60	730	0.0007	1.98	15 – 1000	32.4	20	3.0	Blue
CST1-070L_	CST2-070L_	1:70	980	0.0007	4.75	13 – 1000	37.8	20	3.5	Violet
CST1-100L_	CST2-100L_	1:100	2000	0.0007	5.50	9 – 1000	54.0	20	5.0	Gray
CST1-125L_	CST2-125L_	1:125	3000	0.0007	6.50	7 – 1000	67.5	20	6.3	Black

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

CSTX-125LC

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

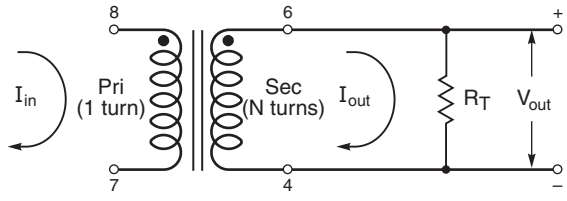
Packaging: **C** = 7″ machine-ready reel. EIA-481 embossed plastic tape (250 parts per full reel).
B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added ($25 charge), use code letter C instead.
D = 13″ machine-ready reel. EIA-481 embossed plastic tape (1000 parts per full reel).

2. Inductance measured between secondary pins at 100 kHz, 0.1 Vrms.
3. Maximum volt-time product for the secondary, based on 2000 gauss.
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_T) 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_T (Ohms) = $V_{out} \times N_{sec}/I_{in}$.
6. Electrical specifications at 25°C.

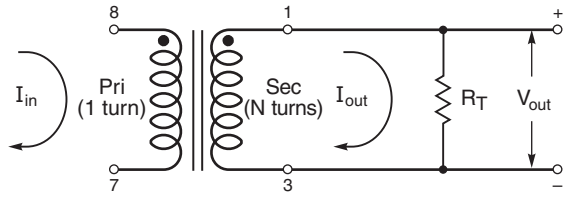
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

Typical Circuits

CST1



CST2



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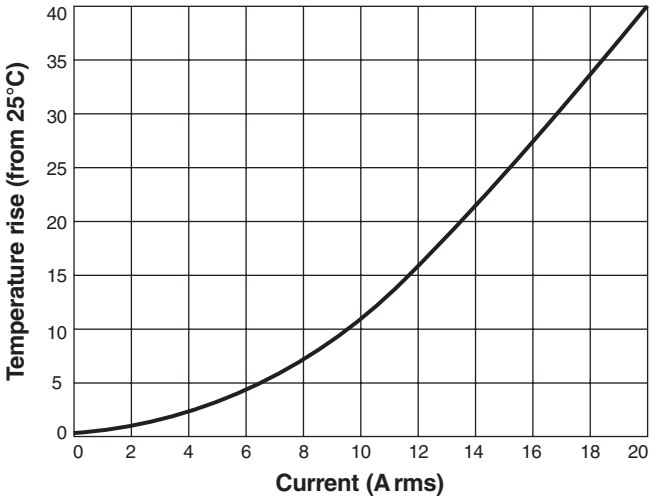
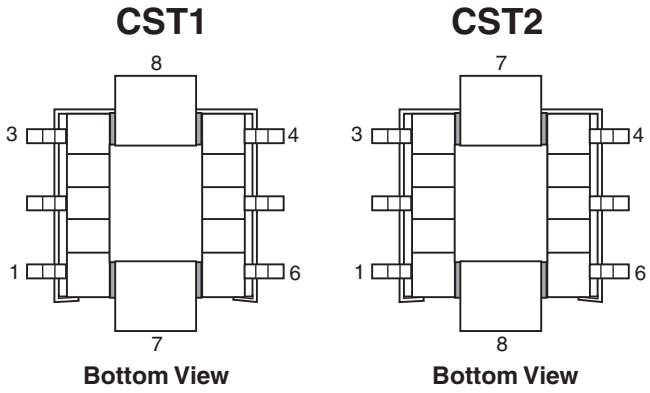
Document 385-1 Revised 09/04/19

CST Series Current Sense Transformers

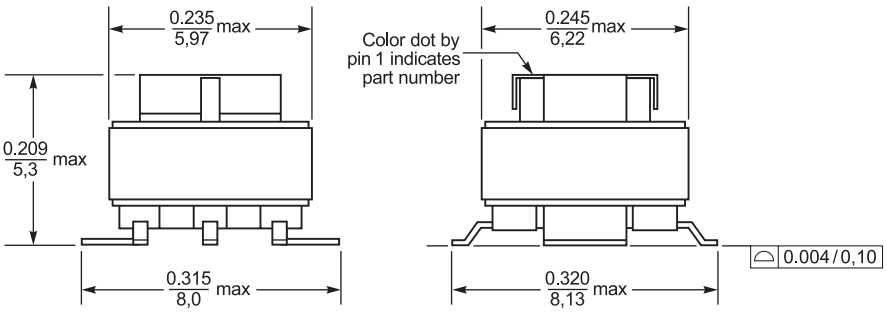
Temperature Rise vs Current

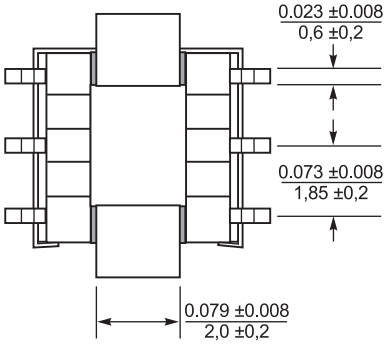


Pinouts

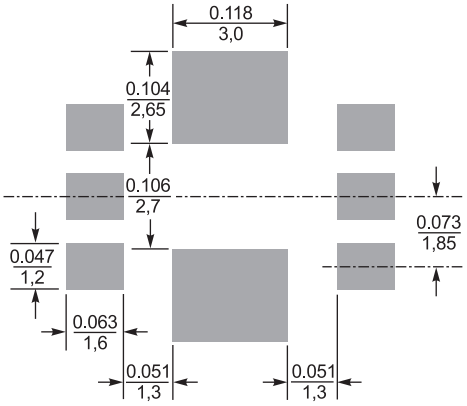


Dimensions





Recommended Land Pattern



Dimensions are in inches / mm

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Document 385-2 Revised 09/04/19