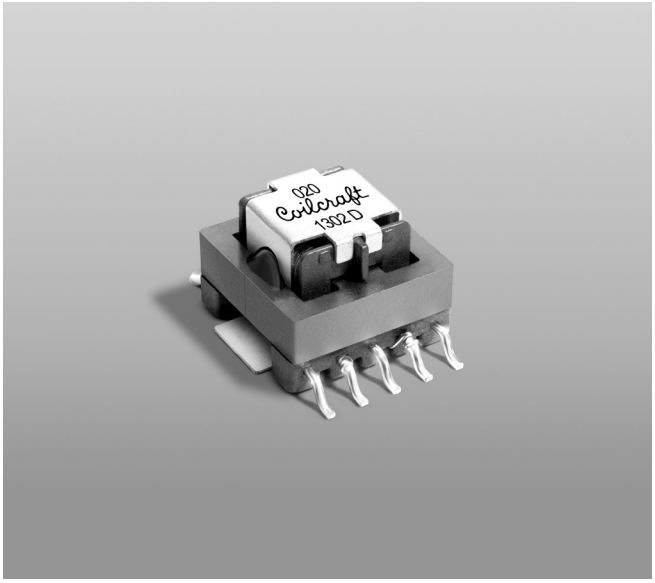
Current Sense Transformers CST2010



- AEC-Q200 Grade 1 qualified (–40°C to +125°C ambient)
- Sensed current up to 40 A; Frequency range up to 1 MHz
- Very low primary DC resistance
- 500 Vrms, one minute isolation (hipot) between windings.

Core material Ferrite
Terminations RoHS compliant tin-silver over tin over nickel over phos bronze
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 +125°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 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.

Part number[1]	Turns (N) pri:sec	Inductance[2] min (mH)	DCR max (Ohms) pri	DCR max (Ohms) sec	Frequency range (kHz)	Volt-time product[3] (Vµsec)	Sensed current I_{in}[4] max (A)	Terminating resistance R_T[5] (Ohms)
CST2010-020L_	1:20	0.34	0.00036	0.180	10 – 1000	50.8	40	0.5
CST2010-030L_	1:30	0.76	0.00036	0.265	7 – 1000	76.2	40	0.8
CST2010-040L_	1:40	1.36	0.00036	0.560	5 – 1000	101.6	40	1.0
CST2010-050L_	1:50	2.12	0.00036	0.705	4 – 1000	127.0	40	1.3
CST2010-060L_	1:60	3.06	0.00036	0.850	3 – 1000	152.4	40	1.5
CST2010-070L_	1:70	4.16	0.00036	1.00	3 – 1000	177.8	40	1.8
CST2010-080L_	1:80	5.44	0.00036	1.15	2 – 1000	203.2	40	2.0
CST2010-100L_	1:100	8.50	0.00036	1.45	2 – 1000	254.0	40	2.5
CST2010-125L_	1:125	13.3	0.00036	1.85	2 – 1000	317.5	40	3.1
CST2010-150L_	1:150	19.2	0.00036	2.25	1 – 1000	381.0	40	3.8
CST2010-200L_	1:200	34.0	0.00036	4.06	1 – 1000	508.0	40	5.0

1. When ordering, please specify **packaging** code:

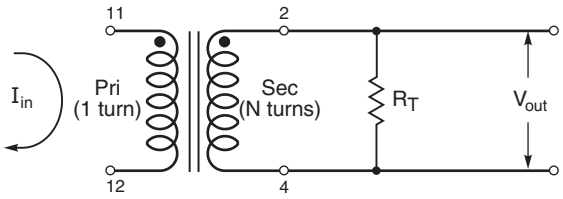
CST2010-200LD

Packaging: **D** = 13″ machine-ready reel. EIA-481 embossed plastic tape (300 parts per full reel).
B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added ($25 charge), use code letter D instead.

2. Inductance measured between secondary pins at 1 kHz, 0.1 Vrms, 0 Adc.
3. Maximum volt-time product is for the secondary, based on 2000 Gauss.
4. Primary current of 40 A causes less than 25°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 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 Electrical specifications at 25°C.

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

Typical Circuit



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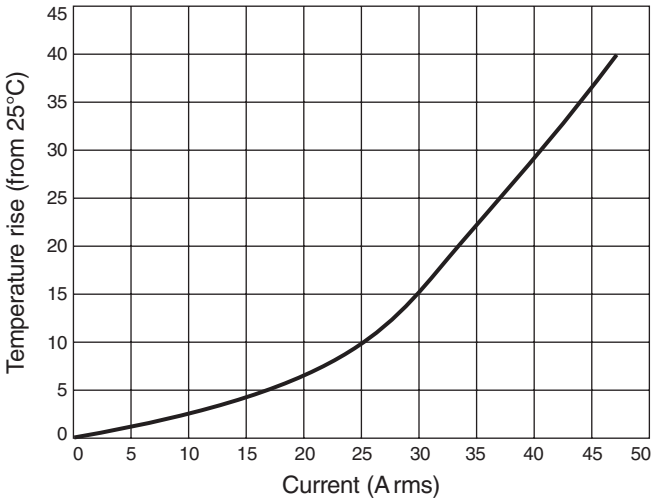
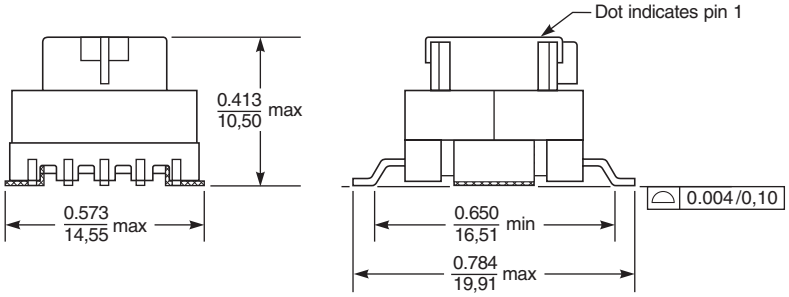
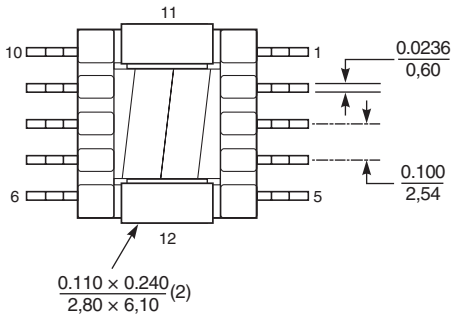
CST2010 SMT Current Sense Transformers

Temperature Rise vs Current

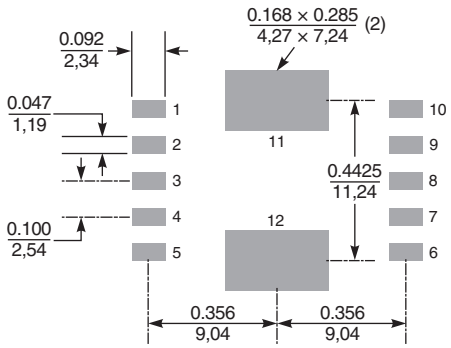


Dimensions





Recommended Land Pattern



Dimensions are in inches / mm

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