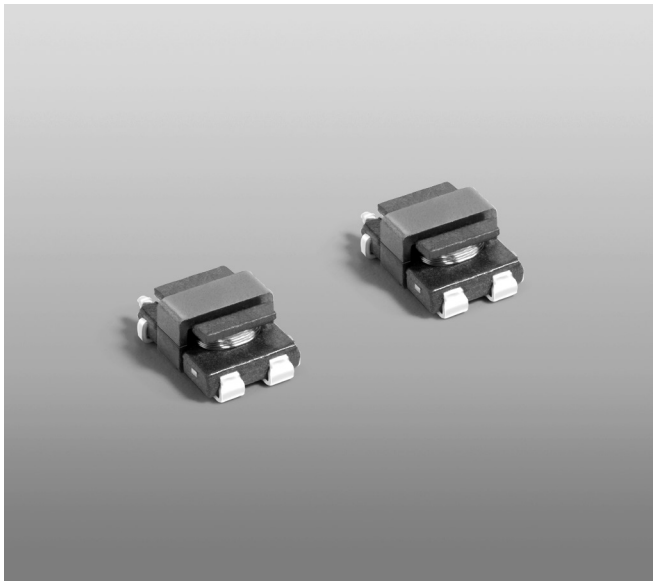
Current Sense Transformers CST7030



- AEC-Q200 Grade 1 (–40°C to +125°C)
- Small surface mount current sensors
- Sensed current up to 20 A; Designed for frequency range up to 1 MHz and above
- Very low primary DC resistance
- 500 Vrms, one minute isolation (hipot) between windings
- Designed for:
  Continuous AC current monitoring in switched-mode power supply; Overload and short-circuit protection; Current measurement in traction motor and battery management systems in conventional and xEV (EV, HEV, FCEV) vehicles.
- Can also be used in 48 V vehicle electrical systems

Part number[1]	Turns (N) pri:sec	Inductance[2] min (mH)	DCR max (Ohms) pri	DCR max (Ohms) sec	Frequency range[3] (kHz)	Volt-time product[4] (Vµsec)	Sensed current I_{in}[5] max (A)	Terminating resistance R_T[6] (Ohms)
CST7030-020L_	1:20	0.053	0.0015	0.420	78–>1000	6.4	20	1.0
CST7030-050L_	1:50	0.333	0.0015	2.76	31–>1000	16.0	20	2.5
CST7030-070L_	1:70	0.652	0.0015	5.04	22–>1000	22.4	20	3.5
CST7030-100L_	1:100	1.330	0.0015	10.68	16–>1000	32.0	20	5.0
CST7030-150L_	1:150	2.993	0.0015	22.30	10–>1000	48.0	20	7.5

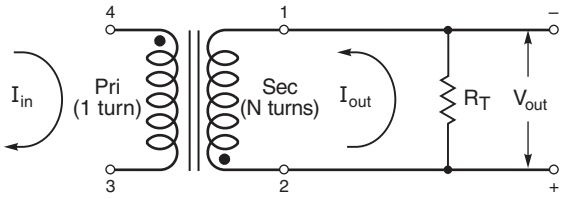
1. When ordering, please specify **packaging** code:

   CST7030-150LC

   Packaging: **C** = 7″ machine-ready reel. EIA-481 embossed plastic tape (600 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer ($25 charge).
   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.
   D = 13″ machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (2500 parts per full reel).
2. Inductance measured between secondary pins at 100 kHz, 0.1 Vrms, 0 Adc.
3. For specific questions regarding frequency range, please contact us at cst@coilcraft.com.
4. Volt-time product is for the secondary, between pin 1 and 2.
5. Primary current of 20 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).
6. 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: $R_T = V_{out} \times N_{sec}/I_{in}$.
7. Electrical specifications at 25°C.

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

Typical Circuit



Core material Ferrite
Terminations RoHS compliant tin-silver-copper over tin over nickel over copper
Weight 0.16 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)
Packaging 600/7″ reel; 2500/13″ reel Plastic tape: 16 mm wide, 0.35 mm thick, 8 mm pocket spacing, 3.0 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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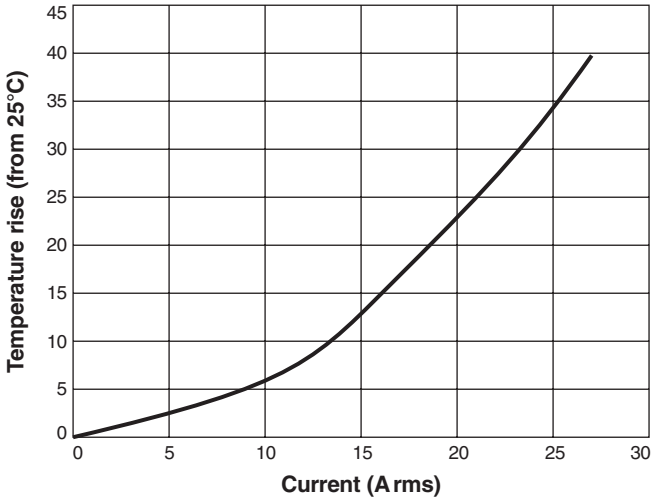
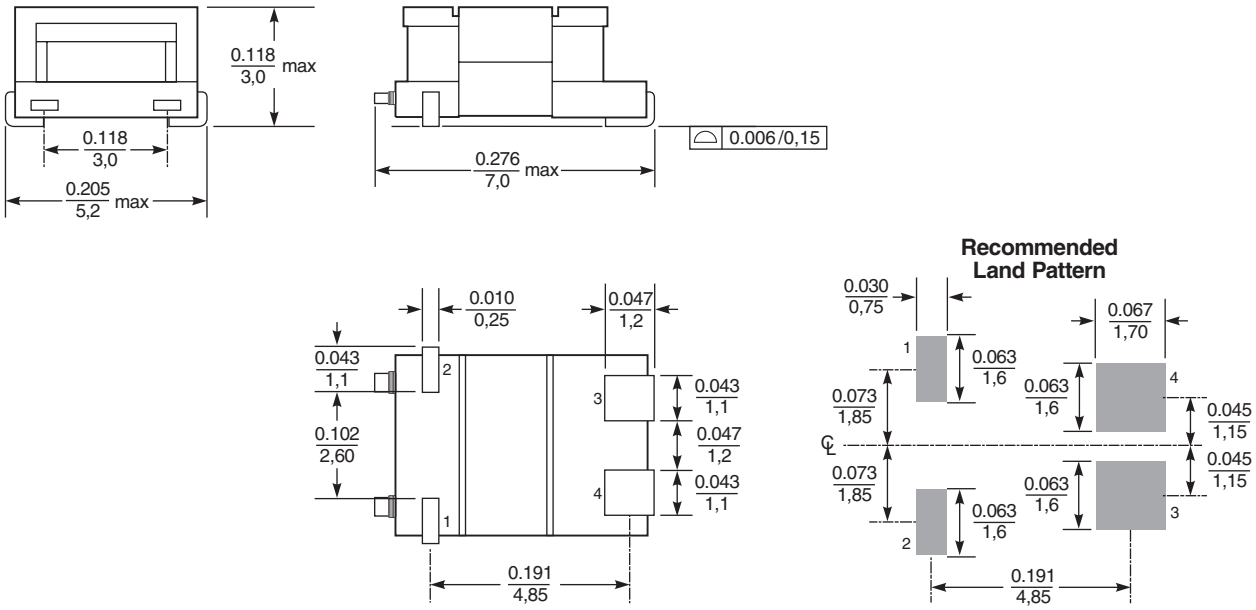
CST7030 SMT Current Sense Transformers

Temperature Rise vs Current



Dimensions



Dimensions are in inches / mm

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