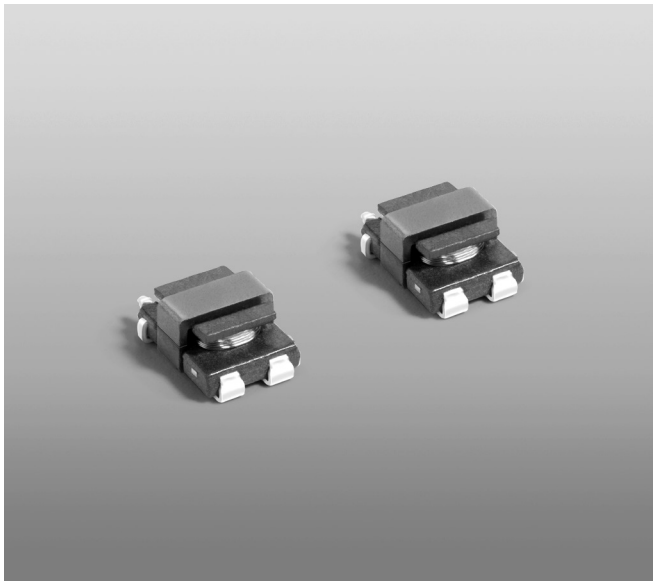
NEW!

# Current Sense Transformers CST7030



- AEC-Q200 Grade 1 qualified (–40°C to +125°C ambient)
- Small surface mount current sensors
- Sensed current up to 20 A; Frequency range up to 1 MHz
- 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 (kHz) | Volt-time product[3] (Vµsec) | Sensed current $I_{in}$[4] max (A) | Terminating resistance $R_T$[5] (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 |

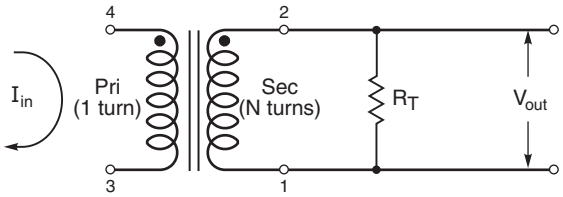
1. When ordering, please specify **packaging** code:

   **CST7030-150LC**

   **Packaging:** **C** = 7″ machine-ready reel. EIA-481 embossed plastic tape (600 parts per full reel).
   **B** = Less than full reel. In tape, but not machine ready. To have a leader and trailer added ($25 charge), use code letter C instead.
   **D** = 13″ machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (2500 parts per full reel).
2. Inductance measured between secondary pins at 100 kHz, 0.1 Vrms, 0 Adc.
3. Maximum volt-time product is for the secondary, based on 2000 Gauss.
4. Primary current of 20 A causes less than 25°C temperature rise from 25°C ambient. Higher current causes a greater temperature rise (see Temperature Rise vs Current curve).
5. Terminating resistance ($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: $R_T = V_{out} \times N_{sec}/I_{in}$.
6 Electrical specifications at 25°C.

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

## Typical Circuit




**Core material** Ferrite
**Terminations** RoHS compliant tin-silver over tin over nickel over phos bronze
**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)
**Failures in Time (FIT) / Mean Time Between Failures (MTBF)** 38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332
**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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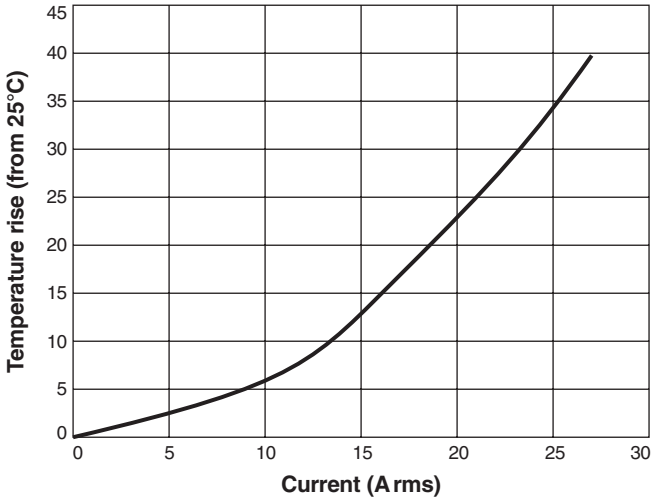
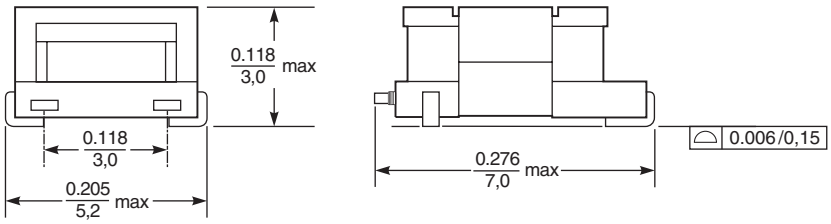
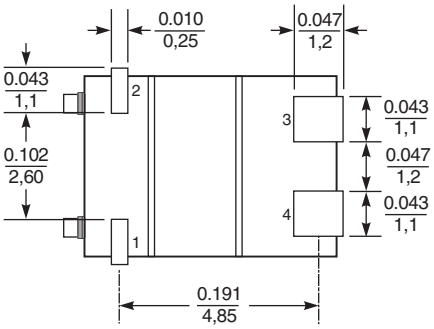
# CST7030 SMT Current Sense Transformers

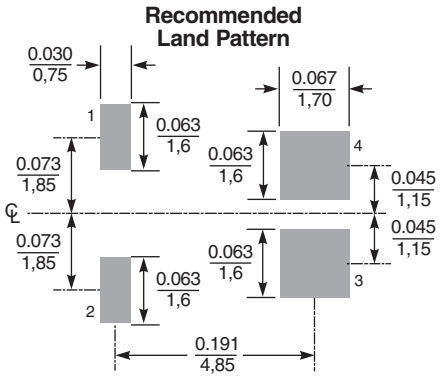
## Temperature Rise vs Current




## Dimensions




Dimensions are in inches / mm

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