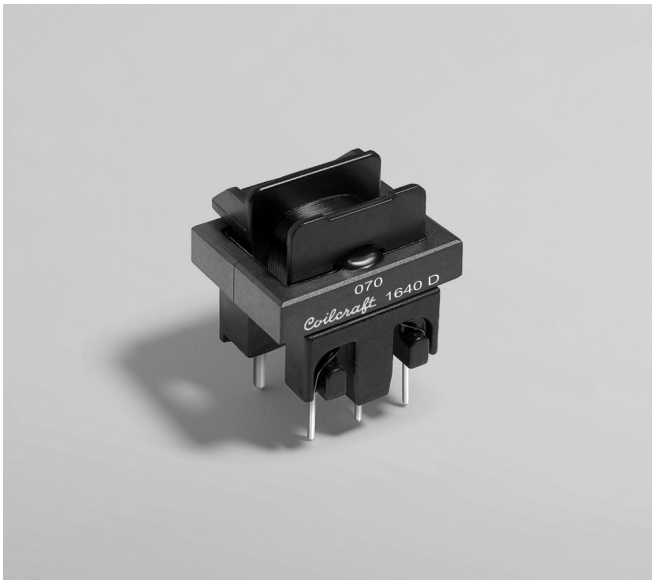
# Current Sense Transformers CST2020




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

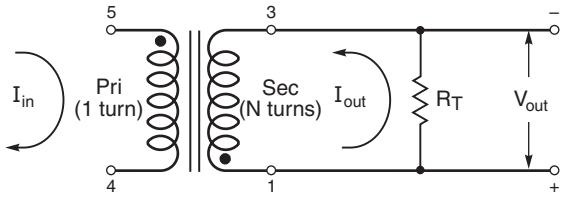
**Core material** Ferrite
**Terminations** Tin-silver-copper over tin over copper over steel (pins 1 – 3); Tin-silver-copper over tin over nickel over copper (pins 4 – 5)
**Weight** 7 – 8.5 g
**Ambient temperature** –40°C to +125°C
**Maximum part temperature** +165°C (ambient + temp rise)
**Storage temperature** 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)
**Failures in Time (FIT) / Mean Time Between Failures (MTBF)** 10.06 per billion hours / 9.940E+07 hours, calculated per Telcordia SR-332
**Packaging** 100 per tray
**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

| Part number | Turns (N) pri:sec | Inductance[1] min (mH) | DCR max (Ohms) pri | DCR max (Ohms) sec | Frequency min (kHz) | Volt-time product[2] (Vµsec) | Sensed current $I_{in}$[3] max (A) | Terminating resistance $R_T$[4] (Ohms) |
|---|---|---|---|---|---|---|---|---|
| CST2020-070L | 1:70 | 3.46 | 0.00084 | 0.83 | 1.8 | 277 | 40 | 1.75 |
| CST2020-100L | 1:100 | 7.07 | 0.00084 | 1.23 | 1.3 | 395 | 40 | 2.5 |
| CST2020-200L | 1:200 | 28.28 | 0.00084 | 3.95 | 0.60 | 791 | 40 | 5.0 |
| CST2020-300L | 1:300 | 63.63 | 0.00084 | 7.84 | 0.40 | 1186 | 40 | 7.5 |

1. Inductance measured between secondary pins at 10 kHz, 0.1 Vrms, 0 Adc.
2. Volt-time product is for the secondary, between pin 3 and 1.
3. 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).
4. 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: $R_T = V_{out} \times N_{sec}/I_{in}$.
5. Electrical specifications at 25°C.

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

## Typical Circuit




Coilcraft
www.coilcraft.com

**US** +1-847-639-6400 sales@coilcraft.com
**UK** +44-1236-730595 sales@coilcraft-europe.com
**Taiwan** +886-2-2264 3646 sales@coilcraft.com.tw
**China** +86-21-6218 8074 sales@coilcraft.com.cn
**Singapore** + 65-6484 8412 sales@coilcraft.com.sg

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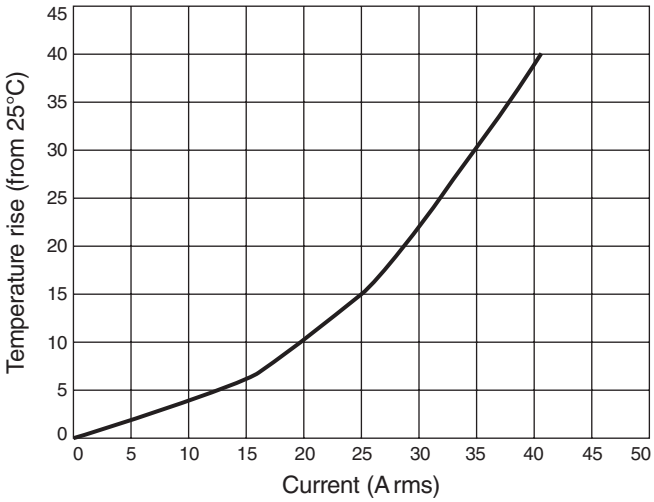
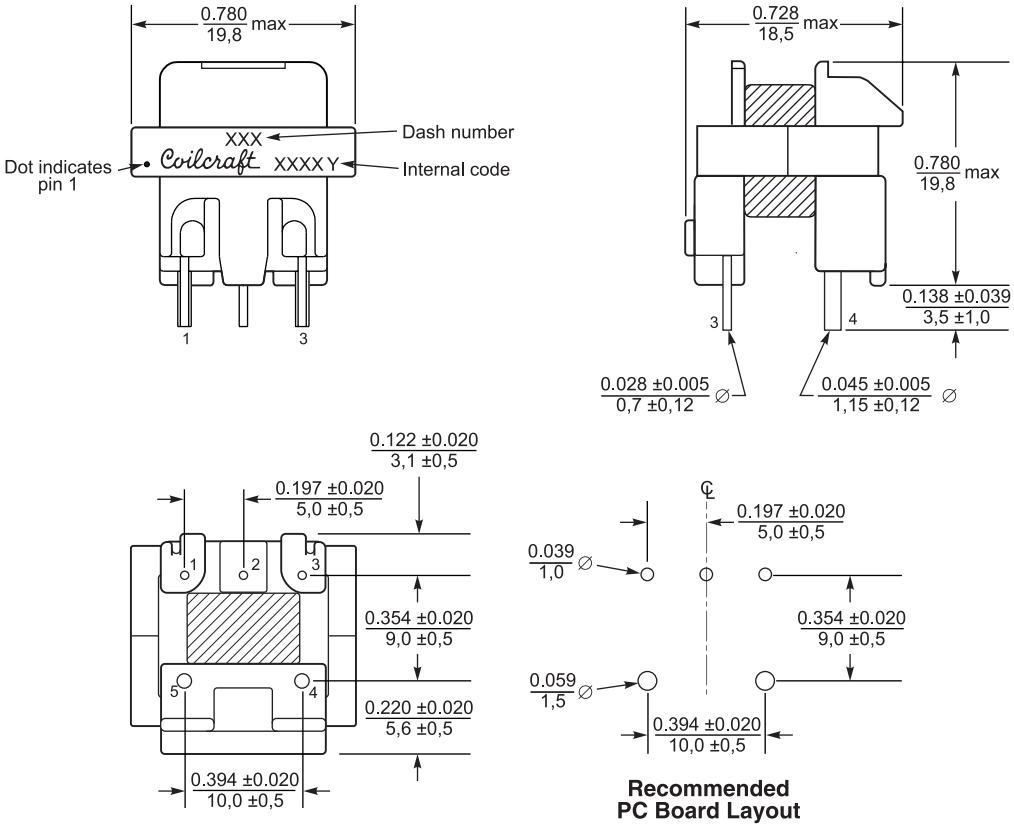
## Temperature Rise vs Current




Dimensions are in inches / mm

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**China** +86-21-6218 8074 sales@coilcraft.com.cn
**Singapore** + 65-6484 8412 sales@coilcraft.com.sg

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