

# Current Sense Transformer CU8965-AL



- Developed for Analog Devices ADP1051 Eighth Brick Power Module
- Sensed current up to 20 A; Frequency range: 16 kHz – 1 MHz
- Very low primary DC resistance
- 1500 Vdc, one second isolation between windings.

**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](#).

| Part number <sup>1</sup> | Turns (N)<br>pri:sec | Inductance <sup>2</sup><br>min (mH) | DCR max<br>(Ohms) |       | Frequency<br>range<br>(kHz) | Volt-time<br>product <sup>3</sup><br>(Vμsec) | Sensed<br>current $I_{in}$ <sup>4</sup><br>max (A) | Terminating<br>resistance $R_T$ <sup>5</sup><br>(Ohms) |
|--------------------------|----------------------|-------------------------------------|-------------------|-------|-----------------------------|----------------------------------------------|----------------------------------------------------|--------------------------------------------------------|
|                          |                      |                                     | pri               | sec   |                             |                                              |                                                    |                                                        |
| CU8965-AL_               | 1:100                | 1.33                                | 0.0015            | 10.68 | 16 – 1000                   | 32                                           | 20                                                 | 5.0                                                    |

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

## CU8965-ALC

**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).

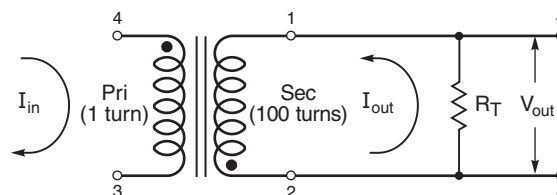
5. Terminating resistance ( $R_T$ ) value is based on 1 Volt output with 20 Amps flowing through the primary. Varying terminating resistance increases or decreases output Voltage/Ampere according to the following equation:  

$$R_T = V_{out} \times N_{sec} / I_{in}$$

6. Electrical specifications at 25°C.

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

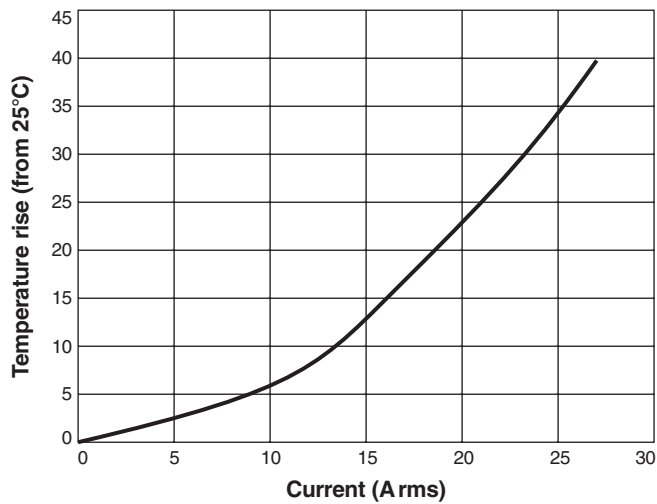
## Typical Circuit



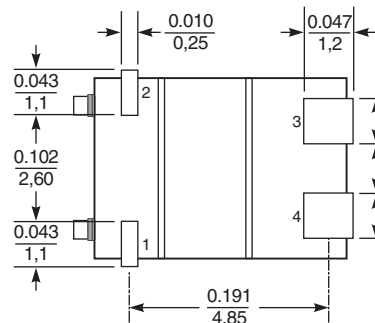
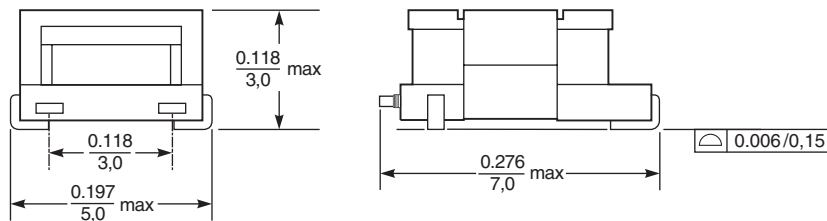


# CU8965-AL Current Sense Transformer

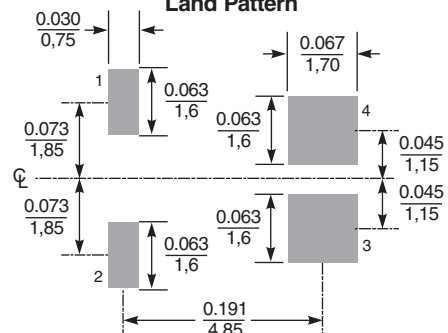
## Temperature Rise vs Current



## Dimensions



## Recommended Land Pattern



Dimensions are in  $\frac{\text{inches}}{\text{mm}}$



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