

### CST206-1A

#### Description:

Designed for switching power supply applications, Triad current sense transformers are used to detect the current passing through a conductor. These transformers are very reliable and operate over the frequency range of 20 kHz-200 kHz.

#### Electrical Specifications (@25C)

| ET V $\mu$ SEC<br>REF 20kHz | Turns<br>Count | Min.<br>Ind. mH | DCR Max. $\Omega$ | Pri. Amps |
|-----------------------------|----------------|-----------------|-------------------|-----------|
| 2000                        | 100            | 14.0            | .580              | 110.0 RMS |

#### Safety:

These current sense transformers are constructed of UL rated 130°C materials.

#### Dimensions:

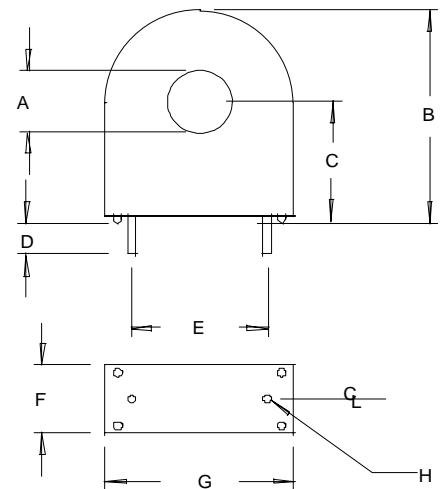
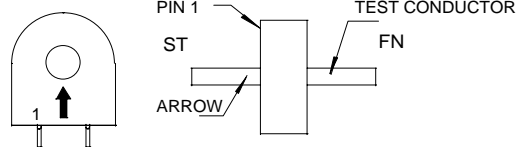
| A    | B     | C    | D    | E    | F    | G     | H         |
|------|-------|------|------|------|------|-------|-----------|
| Min  | Max   | Ref  | Ref  | Ref  | Max  | Max   | Dia. Pins |
| .360 | 1.225 | .700 | .127 | .500 | .400 | 1.075 | .045      |

Units: In inches

#### Technical Notes:

1. Derate ET product by 32% for 50 kHz, 52% for 100Hz and 50% for unidirectional operation.
2. Rated primary current renders approximately 40°C temp. rise.
3. Maximum recommended terminating resistance of 1 ohm per turn.
4. Primary is inserted through hole in casting.

1. START OF TEST CONDUCTOR TO HAVE THE SAME POLARITY AS PIN 1
2. DECAL ARROW ON CASE TO INDICATE POLARITY



**RoHS Compliance:** As of manufacturing date February 2005, all standard products meet the requirements of 2002/95/EC, known as the RoHS initiative.

# Current Sense Transformers

## High Frequency

### :: CST206/306 Description

Designed for switching power supply applications, Triad current sense transformers are used to detect the current passing through a conductor.

These transformers are very reliable and operate effectively over the frequency range of 20 kHz-200 kHz. They are constructed of UL rated 130°C materials. Both models are available with a center tap option.

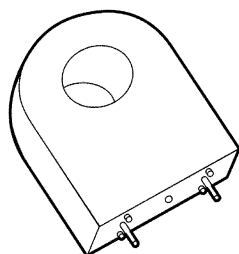


Figure A

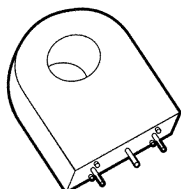


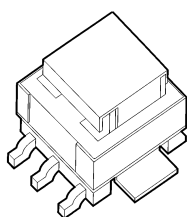
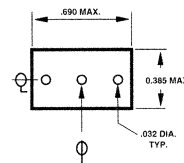
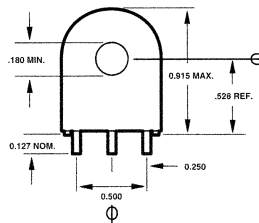
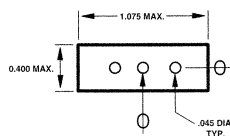
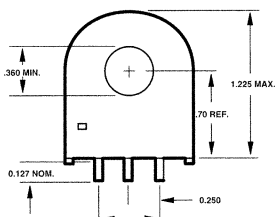
Figure B

| Section/<br>Figure | Type<br>No. | ET VpSEC<br>REF 20 kHz | Turns<br>Count | Min.<br>Ind. mH | DCR Max. Ohms | Pri. Amps |
|--------------------|-------------|------------------------|----------------|-----------------|---------------|-----------|
| A                  | CST206-1A   | 2000                   | 100            | 14.0            | .580          | 110.0 RMS |
| B                  | CST206-1T   | 2000                   | 100 CT         | 14.0            | .580          | 110.0 RMS |
| A                  | CST206-2A   | 4000                   | 200            | 56.0            | 3.500         | 80.0 RMS  |
| B                  | CST206-2T   | 4000                   | 200 CT         | 56.0            | 3.500         | 80.0 RMS  |
| A                  | CST206-3A   | 6000                   | 300            | 130.0           | 12.400        | 70.0 RMS  |
| B                  | CST206-3T   | 6000                   | 300 CT         | 130.0           | 12.400        | 70.0 RMS  |
| B                  | CST306-1A   | 500                    | 50             | 3.5             | .340          | 35.0 RMS  |
| A                  | CST306-1T   | 500                    | 50 CT          | 3.5             | .580          | 35.0 RMS  |
| B                  | CST306-2A   | 1000                   | 100            | 14.0            | 1.550         | 25.0 RMS  |
| A                  | CST306-2T   | 1000                   | 100 CT         | 14.0            | 1.550         | 25.0 RMS  |
| B                  | CST306-3A   | 2000                   | 200            | 55.0            | 3.750         | 25.0 RMS  |
| A                  | CST306-3T   | 2000                   | 200 CT         | 55.0            | 3.750         | 25.0 RMS  |

### :: Outline Dimensions

#### Technical Notes

1. Derate ET product by 32% for 50 kHz, 52% for 100 Hz and 50% for unidirectional operation.
2. Rated primary current renders approximately 40°C temperature rise.
3. CST206 models have maximum recommended terminating resistance of 1 ohm per turn.
4. Primary is inserted through hole in casing.
5. 3 pin or center tapped (CT) models are designed with a T suffix.



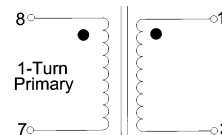
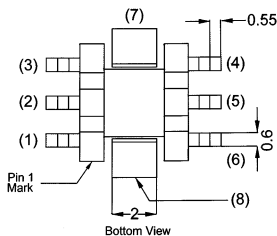
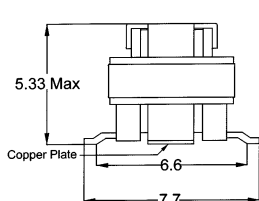
### :: CSE5 Description

Designed to monitor current at 250 kHz and above. These transformers have a primary current rating of 10 Amps.

| Part<br>No. | Turns<br>N1:N2<br>@ 10kHz | Secondary<br>Inductance<br>µH Min. | Secondary<br>DCR<br>mΩ Max |
|-------------|---------------------------|------------------------------------|----------------------------|
| CSE5-100201 | 1:20                      | 80                                 | 550                        |
| CSE5-100301 | 1:30                      | 180                                | 870                        |
| CSE5-100401 | 1:40                      | 320                                | 1140                       |
| CSE5-100501 | 1:50                      | 500                                | 1500                       |
| CSE5-100601 | 1:60                      | 720                                | 1750                       |
| CSE5-100701 | 1:70                      | 980                                | 4750                       |
| CSE5-101001 | 1:100                     | 2000                               | 5500                       |
| CSE5-101251 | 1:125                     | 3000                               | 8500                       |

### :: Outline Dimensions

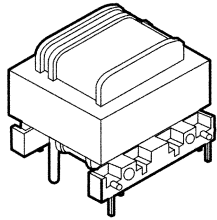
#### Technical Notes {mm}



# Current Sense Transformers

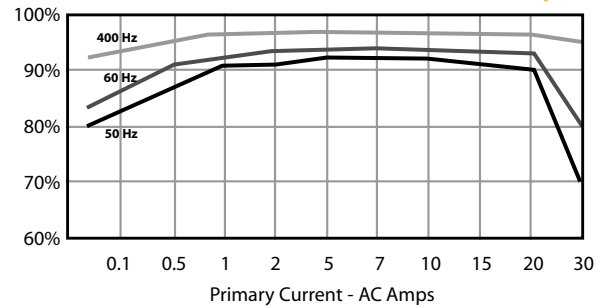
Class B  
UL File: E205349 

## Low Frequency



**:: CSE187L Description**  
Designed to monitor current in low frequency applications. This Triad part may be used to monitor current from .1 to 30 amperes at frequencies from 50 Hz to 400 Hz.

**CSE187L Performance Graph**



**:: Outline Dimensions**

0.710 Max.  
0.86 Max.  
>025 Sq. (4 Plcs)  
.080 Dia. Typical (2 Plcs)

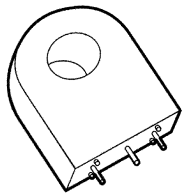
8, 1A, 1, 0.37, 0.86 Max., 5, 2A, 4, 0.11

Amps In, Volts Out

1A, 8, 0.37, 0.60, 0.12, 0.40, 5

**Technical Notes**

- Turns ratio: Primary to sense 1:500
- Suggested burden resistor: 60 ohms.
- Typical output: 110 mV/Amp.
- Primary DCR: 250  $\mu$ Ohms maximum.
- Sense DCR: 21 ohms maximum.
- Constructed with UL recognized materials (Class B, 130°C).
- Hi-pot: 2,500 volts wdg-wdg.
- Potted version available with a dielectric strength of 4,000 volts wdg-wdg.



**:: CST Series Description**  
Triad current sense transformers are used to detect the current passing through a conductor. These transformers are very reliable and operate effectively between 50-60 Hz. They are constructed of UL rated 130°C materials.

**:: Specifications**

| Part No. | Ip Amps | Turns Ratio | Terminating Resistor |        | DCR (Ohms) Nominal | Volts/Amp @ rated Ip for various loads |        |        |        | Net Weight (grams) REF | Case Dimensions – mm |       |       |       |       |       |
|----------|---------|-------------|----------------------|--------|--------------------|--|--------|--------|--------|------------------------|----------------------|-------|-------|-------|-------|-------|
|          |         |             | Ohms                 | Watt   |                    | 100                                    | 500    | 2K     | 5K     |                        | A                    | B     | C     | D     | E     | F     |
| CST-1005 | 5       | 1000:1      | 100                  | 0.0025 | 40.00              | 0.0958                                 | 0.4490 | 1.3694 | 1.8402 | 20.0                   | 23.50                | 24.80 | 12.00 | 15.00 | 7.50  | 8.50  |
| CST-1010 | 10      | 1000:1      | 100                  | 0.0100 | 40.00              | 0.0969                                 | 0.4565 | 0.9686 | 1.1912 | 20.0                   | 23.50                | 24.80 | 12.00 | 15.00 | 7.50  | 8.50  |
| CST-1015 | 15      | 1000:1      | 100                  | 0.0230 | 40.00              | 0.0971                                 | 0.4429 | 0.7508 | 0.9439 | 20.0                   | 23.50                | 24.80 | 12.00 | 15.00 | 7.50  | 8.50  |
| CST-1020 | 20      | 1000:1      | 100                  | 0.0400 | 40.00              | 0.0977                                 | 0.3943 | 0.6174 | 0.7662 | 20.0                   | 23.50                | 24.80 | 12.00 | 12.00 | 7.50  | 8.50  |
| CST-1025 | 25      | 1000:1      | 100                  | 0.0630 | 46.00              | 0.0976                                 | 0.4364 | 0.7496 | 0.9664 | 30.0                   | 30.20                | 30.20 | 14.30 | 20.32 | 10.16 | 11.40 |
| CST-1030 | 30      | 1000:1      | 100                  | 0.0900 | 46.00              | 0.0977                                 | 0.4160 | 0.6710 | 0.8750 | 30.0                   | 30.20                | 30.20 | 14.30 | 20.32 | 10.16 | 11.40 |

Ip: Primary Current

**:: Outline Dimensions**

**Technical Notes**

- Pin length: 5  $\pm$  1mm
- Pin diameter: 0.8  $\pm$  0.1mm
- Pin 3 normally for mechanical support only