

CTCSE Series

CHARACTERISTICS

Description: Metal Alloy Current Sensors

Features:

- LOW T.C.R.
- Wide Resistance range
- Short time over load for 5 seconds
- High Surge Power
- RoHS, PFOS, PFOA, Halogen Free and REACH Compliant
- Anti-sulfurated

Operating Temperature: -55°C to +150°C

Applications: Power Converter, Overload Protection, Linear Motor Control, Switching Converter, Power Amplifier, RF Total Power

Samples available. See website for ordering information.

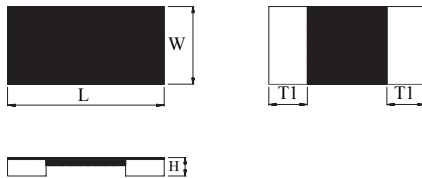


PRODUCT IDENTIFICATION

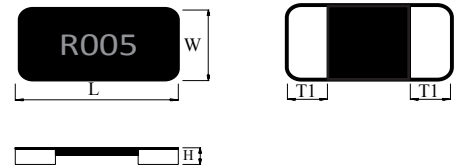
| CTCSE | 0603 | F | R005XX | F |
|-------------------------|------------------------|-------------|-----------------------|-----------|
| Product Series | Dimensions Code (Inch) | Rated Power | Resistance (6 Digits) | Tolerance |
| Metal Alloy | 0603 | F=0.33W | R005XX=5mΩ | D=±0.5% |
| Low Resistance Resistor | 0805 | C=0.5W | R010XX=10mΩ | F=±1% |
| | 1206 | E=0.75W | | G=±2% |
| | 0508 | 1=1.0W | | J=±5% |
| | 0612 | | | |

CONFIGURATION AND DIMENSIONS

CTCSE0603/0805

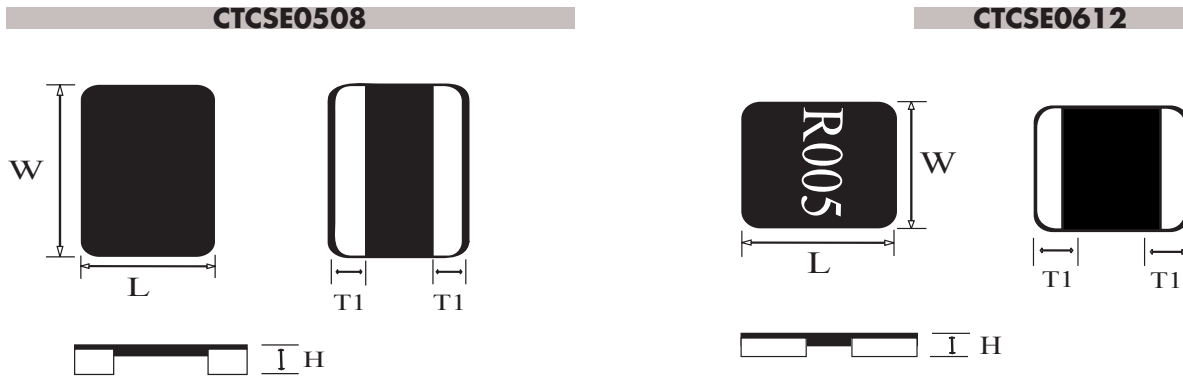


CTCSE1206



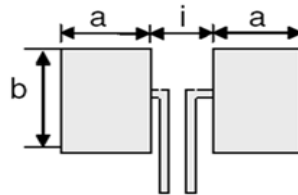
| Type | Maximum Power Rating (Watts) | Resistance Range (mΩ) | Dimensions - in Inches (millimeters) | | | |
|-----------|------------------------------|-----------------------|--------------------------------------|--------------------------|---|---------------------------|
| | | | L | W | H | T1 |
| CTCSE0603 | 0.33 | 5~75 | 0.063±0.008 (1.6±0.2) | 0.031±0.008 (0.8±0.2) | 0.012+0.002/-0.004 (0.3+0.05/-0.10) | 0.012±0.006 (0.3±0.15) |
| | 0.5 | 5~10 | | | | |
| CTCSE0805 | 0.5 & 0.75 | 2 | 0.08±0.008 (2.032±0.2) | 0.05±0.008 (1.27±0.2) | 0.014+0.002/-0.004 (0.35+0.05/-0.10) | 0.02±0.006 (0.5±0.15) |
| | 0.5 | 3~70 | 0.08±0.008 (2.032±0.2) | 0.05±0.008 (1.27±0.2) | 0.012+0.002/-0.004 (0.3+0.05/-0.10) | 0.014±0.008 (0.35±0.2) |
| | 0.75 | 3~10 | | | | |
| CTCSE1206 | 0.5 & 1 | 3 | 0.126±0.008 (3.2±0.2) | 0.063±0.008 (1.6±0.2) | 0.016±0.008 (0.4±0.2) | 0.024±0.008 (0.6±0.2) |
| | | 4~75 | | | | 0.014±0.008 (0.35±0.2) |

CONFIGURATION AND DIMENSIONS



| Type | Maximum Power Rating (Watts) | Resistance Range (mΩ) | Dimensions - in Inches (Millimeters) | | | |
|-----------|------------------------------|-----------------------|--------------------------------------|---------------------------|---------------------------------------|----------------------------|
| | | | L | W | H | T1 |
| CTCSE0508 | 1 | 2~14 | 0.05±0.008 (1.27±0.2) | 0.08±0.008 (2.032±0.2) | 0.012±0.004 (0.3±0.1) | 0.014±0.006 (0.35±0.15) |
| CTCSE0612 | 1 | 1~16 | 0.063±0.008 (1.6±0.2) | 0.126±0.008 (3.2±0.2) | 0.12±0.002/-0.004 (0.3±0.05/-0.10) | 0.012±0.006 (0.3±0.15) |

RECOMMEND LAND PATTERN



| Type | Maximum Power Rating (Watts) | Resistance Range (mΩ) | Dimensions in Millimeters | | |
|-----------|------------------------------|-----------------------|---------------------------|------|------|
| | | | a | b | i |
| CTCSE0603 | 0.33 & 0.5 | 5~75 | 1 | 1.27 | 0.5 |
| CTCSE0805 | 0.5 | 2~70 | 1.8 | 2.18 | 0.66 |
| | 0.75 | 2~10 | 1.8 | 2.18 | 0.66 |
| CTCSE1206 | 0.5 & 1 | 4~75 | 1.65 | 2.18 | 1 |
| CTCSE0508 | 1 | 2~14 | 1.45 | 2.2 | 0.5 |
| CTCSE0612 | 1 | 1~16 | 1.65 | 3.5 | 0.5 |

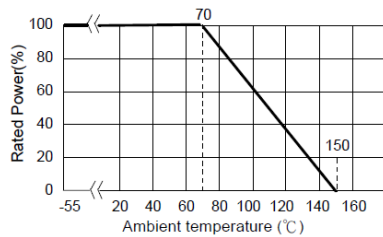
ELECTRICAL CHARACTERISTICS

| Type | Rating Power (W) Max. | Rating Current (A) Max. | Overload Current (A) Max. | T.C.R (ppm/°C) | Resistance Range (mΩ) | | Operating Temperature Range |
|-----------|-----------------------|-------------------------|---------------------------|----------------|-----------------------|-------------|-----------------------------|
| | | | | | Tolerance (±%) | | |
| | | | | | ±0.5% | ±1%,±2%,±5% | |
| CTCSE0603 | 0.33 | 8.1 | 16.2 | ≤±50 | - | 5≤R≤75 | -55~150°C |
| | 0.5 | 10.0 | 20.0 | ≤±50 | - | 5≤R≤10 | |
| CTCSE0805 | 0.5 | 15.8 | 31.6 | ≤±100 | - | 2≤R<3 | |
| | | | | ≤±75 | - | 3≤R<5 | |
| | | | | ≤±50 | 5≤R≤70 | 5≤R≤70 | |
| | 0.75 | 19.36 | 38.72 | ≤±100 | - | 2≤R<3 | |
| | | | | ≤±75 | - | 3≤R<5 | |
| | | | | ≤±50 | 5≤R≤70 | 5≤R≤10 | |
| CTCSE1206 | 0.5 | 11.2 | 22.4 | ≤±75 | - | 3≤R<4 | |
| | | | | ≤±50 | 10≤R≤75 | 4≤R≤75 | |
| | 1 | 15.8 | 31.6 | ≤±75 | - | 3≤R<4 | |
| | | | | ≤±50 | 10≤R≤75 | 4≤R≤75 | |
| CTCSE0508 | 1 | 22.3 | 44.6 | ≤±50 | - | 2≤R≤14 | |
| CTCSE0612 | 1 | 31.6 | 63.2 | ≤±125 | - | 1≤R<2 | |
| | | | | ≤±50 | 10≤R≤16 | 2≤R≤16 | |

Note: When ordering, please specify tolerance code. Tolerance: F=±1%, G=±2%, J=±5%, D=±0.5%

- Power Derating Curve: Operating Temperature Range: -55~+150 °C

For resistors operated in ambient temperatures 70°C, power rating shall be derated in accordance with the curve below:



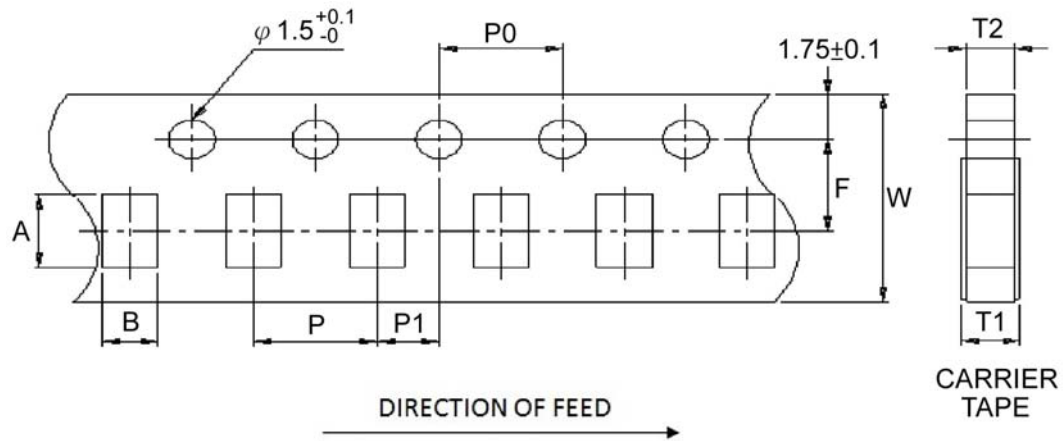
- Rating Current: The resistor shall have a DC continuous working current or a RMS (Root Mean Square) AC continuous working current at commercial-line frequency and wave form corresponding to the power rating, as determined from the following:

Remark: I: Rating Current.(A), P: Rating Power.(W), R: Resistance.(Ω)

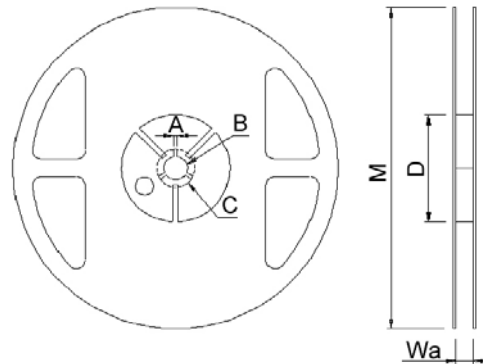
$$I = \sqrt{P/R}$$

PACKAGING SPECIFICATIONS

Tape Dimensions



Reel Dimensions



| Type | Tape Dimensions | | | | | | | | | Reel Dimensions | | | | | | Quantity |
|-----------|-----------------|------|---|-----|-----|-----|---|----|----|-----------------|----|---|------|------|----|------------|
| | A | B | W | F | T1 | T2 | P | P0 | P1 | M | Wa | A | B | C | D | PCS / REEL |
| CTCSE0603 | 1.8 | 1.00 | 8 | 3.5 | 0.4 | 0.4 | 4 | 4 | 2 | 178 | 12 | 2 | 13.2 | 17.7 | 60 | 5000 |
| CTCSE0805 | 2.3 | 1.55 | 8 | 3.5 | 0.4 | 0.4 | 4 | 4 | 2 | 178 | 12 | 2 | 13.2 | 17.7 | 60 | 5000 |
| CTCSE1206 | 3.5 | 1.90 | 8 | 3.5 | 0.6 | 0.6 | 4 | 4 | 2 | 178 | 12 | 2 | 13.2 | 17.7 | 60 | 5000 |
| CTCSE0508 | 2.3 | 1.55 | 8 | 3.5 | 0.4 | 0.4 | 4 | 4 | 2 | 178 | 12 | 2 | 13.2 | 17.7 | 60 | 5000 |
| CTCSE0612 | 3.5 | 1.90 | 8 | 3.5 | 0.6 | 0.6 | 4 | 4 | 2 | 178 | 12 | 2 | 13.2 | 17.7 | 60 | 5000 |