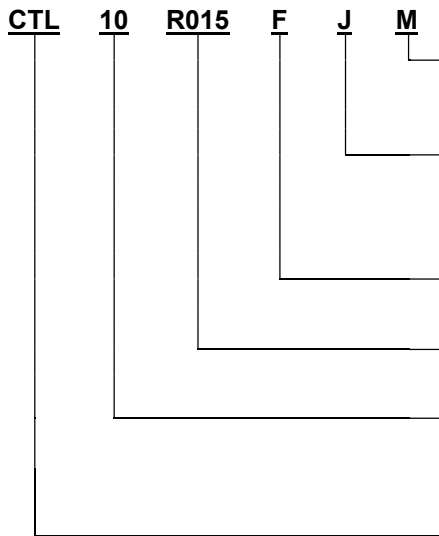


HOW TO ORDER



Packaging

M = 7" Reel (10" Reel for 2512)
V = 13" Reel

TCR (ppm/°C)

R = ±15 X = ±25 Y = ±50
J = ±75 K = ±100 L = ±200
N = ±350 O = ±400 P = ±500

Tolerance (%)

F = ±1.0 G = ±2.0 J = ±5.0

EIA Resistance Code

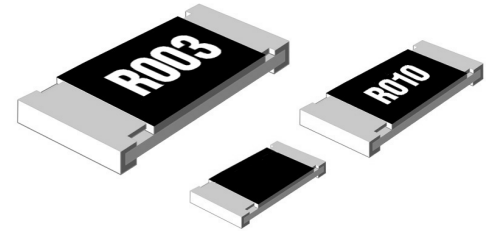
Three significant digits and # of zeros

Size

05 = 0402 10 = 0805 12 = 2010
16 = 0603 18 = 1206 01 = 2512
1S = 2512 3W

Series

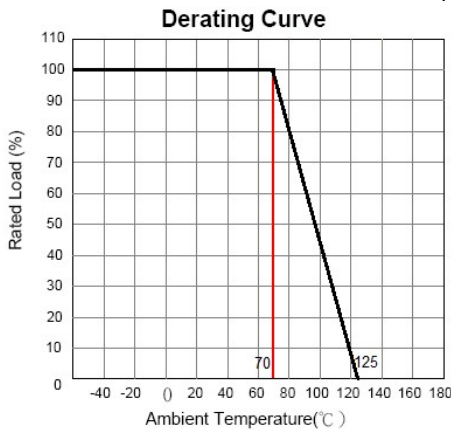
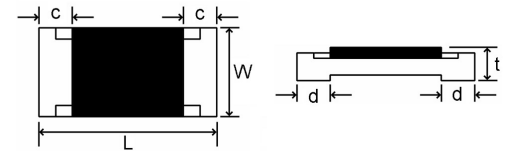
Precision Current Sense Resistor



FEATURES

- Resistance as low as 0.001 ohms
- Ultra Precision type with high reliability, stability and quality
- RoHS Compliant
- Extremely Low TCR, as low as ± 50 ppm
- Wrap Around Terminal for Flow Soldering
- Reference Standard = IEC 60115-8, JIS C 5201-8

SCHEMATIC



DIMENSIONS (mm)

Series	Size	L	W	c	d	t
CTL05	0402	1.00 ± 0.10	0.50 ± 0.10	0.20 ± 0.10	0.25 ± 0.10	0.35 ± 0.10
CTL16	0603	1.60 ± 0.10	0.80 ± 0.10	0.30 ± 0.15	0.35 ± 0.20	0.45 ± 0.10
CTL10	0805	2.00 ± 0.20	1.25 ± 0.20	0.40 ± 0.20	0.35 ± 0.20	0.50 ± 0.10
CTL18	1206	3.20 ± 0.20	1.60 ± 0.18	0.50 ± 0.20	0.50 ± 0.20	0.60 ± 0.20
CTL12	2010	5.00 ± 0.20	2.50 ± 0.20	0.60 ± 0.30	0.60 ± 0.30	0.60 ± 0.20
CTL01	2512	6.40 ± 0.20	3.20 ± 0.20	0.90 ± 0.20	0.90 ± 0.20	0.60 ± 0.20

ELECTRICAL CHARACTERISTICS

Size	Rated Power	Tol	Max TCR (ppm/°C)					Max Working Voltage	Max Overload Voltage
			±50ppm	±100ppm	±200ppm	±350ppm	±500ppm		
0402	0.125W	2%			0.100 ~ 4.70			25V	50V
		5%			0.100 ~ 4.70				
0603	0.125W	1%			0.010 ~ 0.100			50V	100V
		2%			0.010 ~ 0.100				
	0.25W	5%			0.010 ~ 0.100				
0805	0.250W	1%	0.100 ~ 0.500		0.010 ~ 0.100	0.01 ~ 0.039		150V	300V
		2%			0.010 ~ 0.100	0.01 ~ 0.039			
	0.5W	5%			0.010 ~ 0.100	0.022 ~ 0.068			
1206	0.50W	.5%	0.001 ~ 0.050	0.068 ~ 0.470	0.007 ~ 0.100	0.018 ~ 0.027		200V	400V
		1%	0.001 ~ 0.050	0.056 ~ 0.470	0.010 ~ 0.100	0.027			
	1W	2%		0.056 ~ 0.470	0.010 ~ 0.100	0.018 ~ 0.027	0.01 ~ 0.015		
2010	0.75W	.5%	0.003 ~ 0.10					200V	400V
		1%	0.001 ~ 0.10	0.056 ~ 0.470	0.001 ~ 0.065	0.027			
	1W	2%	0.001 ~ 0.10	0.056 ~ 0.470	0.001 ~ 0.065	0.018 ~ 0.027	0.01 ~ 0.015		
2512	1.0W	.5%	0.007 ~ 0.10	0.056 ~ 0.470	0.001 ~ 0.065	0.018 ~ 0.027		200V	400V
		1%	0.0005 ~ 0.10	0.056 ~ 0.470	0.001 ~ 0.065	0.027			
	2W	2%	0.0005 ~ 0.10	0.056 ~ 0.470	0.001 ~ 0.065	0.018 ~ 0.027	0.01 ~ 0.015		

NOTE: The temperature range is -55°C ~ +150°C

Rated Voltage = $\sqrt{P \cdot R}$

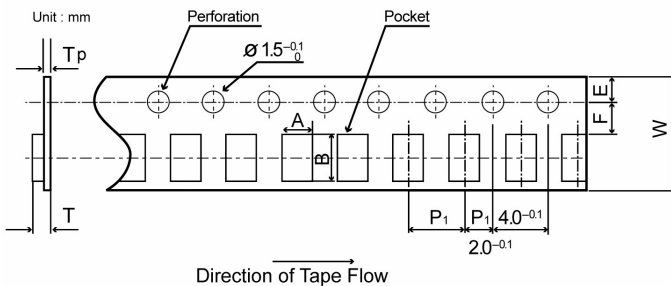
PERFORMANCE

Test Item	Maximum $\Delta \Omega$		Condition
	F	G, J	
Short Time Overload	$\pm 0.1\%$	$\pm 0.5\%$	2.5 times of the rated voltage shall be applied for 5 seconds
Load Life	$\pm 0.25\%$	$\pm 0.5\%$	The resistor shall be subjected to rated voltage for 90 min. followed by a pause of 30 min. at a temperature of $70 \pm 3^\circ\text{C}$. This constitutes 1 cycle. Cycles shall be repeated for 1000 hours.
Moisture Load Life	$\pm 0.25\%$	$\pm 0.5\%$	The resistor subjected to rated voltage for 90 min followed by a pause for 30 min at a temperature of $60 \pm 2^\circ\text{C}$ with relative humidity of 90% to 95%. This constitutes 1 cycles. Cycles shall be repeated for 1000 hours.
Temperature Cycle	$\pm 0.1\%$	$\pm 0.5\%$	[-55°C 30 min → +125°C 30 min → R.T. 3 min] The resistor shall be subjected to 5 continuous cycles
Resistance to Solder Heat	$\pm 0.1\%$	$\pm 0.5\%$	The resistor shall withstand dipped into solder for 10 ± 1 sec. At $260 \pm 5^\circ\text{C}$
Terminal Strength	$\pm 0.1\%$	$\pm 0.5\%$	Distance between fulcrums: 90mm; Bending width: 3 mm
Insulation Resistance	DC 500V for 1 min.		1000 Meg Ω or over
Solderability	A new uniform coating of solder shall cover minimum of 95% of surface being immersed The resistor shall be dipped into the solder of $215 \pm 5^\circ\text{C}$ for 3 ± 0.5 seconds		

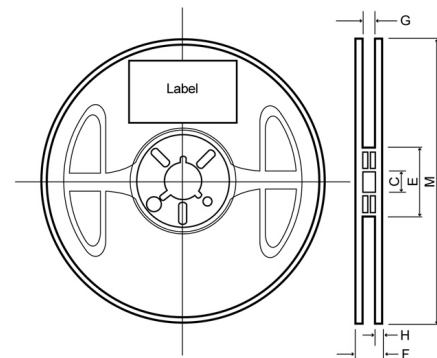
PACKAGE QUANTITY

Package Type	CTL05	CTL16	CTL10	CTL18	CTL12	CTL01	CTL1S
M	10,000	5,000	5,000	5,000	5,000	5,000	2,000

TAPE SCHEMATIC



REEL SCHEMATIC



TAPE DIMENSIONS (mm)

	A	B	W	E	F	P ₁	T	T _p
CTL05	0.65±0.1	1.15±0.1	8.0±0.2	1.75±0.10	3.5±0.05	2.0±0.05	0.55±0.1	0.20±0.05
CTL16	1.1±0.2	1.9±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	0.70±0.1	0.20±0.05
CTL10	1.65±0.2	2.4±0.2	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	0.85±0.1	0.20±0.05
CTL18	2.0±0.15	3.6±0.15	8.0±0.2	1.75±0.1	3.5±0.05	4.0±0.1	0.85±0.1	0.20±0.05
CTL12	2.9±0.1	5.3±0.1	12.0±0.2	1.75±0.1	5.5±0.05	4.0±0.1	1.0±0.1	0.25±0.1
CTL01	3.4±0.1	6.6±0.1	12.0±0.2	1.75±0.1	5.5±0.05	4.0±0.1	1.0±0.1	0.25±0.1
CTL1S	3.4±0.1	6.6±0.1	12.0±0.2	1.75±0.1	5.5±0.05	4.0±0.1	1.0±0.1	0.25±0.1

REEL DIMENSIONS (mm)

Reel	M	H	C	G	E	F
7"	180 ± 3.0	1.20	13.0 ± 0.2	9.0 ± 0.3	60 ± 1.0	11.4 ± 1.0
10"						
13"						

LABEL DESCRIPTION

One side surface of a reel is marked with a label with the following items of information.

1. Chip Resistor
2. Part Number
3. Tolerance
4. Quantity
5. Lot # for production month/year/suffix L*
6. Manufacturer's name or symbol

* The suffix "L" indicates that this item is lead free. As of September 2004, all new production items of this are lead free and in compliance with Lead Free/RoHS.

The content of this specification may change without notification 06/08/2007

Customized Available