



Ultra Precision Resistor Arrays & Networks Tin Lead Termination

HOW TO ORDER

CTNS 1A - C- 1003 B A Q M M

Packaging

M = Tape/Reel B = Bulk

Tracking TCR

L = 1 N = 3 Q = 10
M = 2 P = 5

Absolute TCR

P = ± 5 X = ± 25
Q = ± 10

Ratio Tolerance

T = 0.01 B = 0.1
Q = 0.02 C = 0.25
A = 0.05 D = 0.5

Absolute Tolerance (%)

A = ± 0.05 D = ± 0.5
B = ± 0.1 F = ± 1
C = ± 0.25

Resistance Value

3 sig. fig & 1 multiplier $\pm 1\%$

Circuit Layout

Refer to Specification

Model (Refer to Spec)

1A	S6D	16U
1D	8U	M16U
2D	S8D	
6D	W8U	

Series

High Precision Resistor Array & Networks
Termination Sn/Pb

ELECTRICAL CHARACTERISTICS

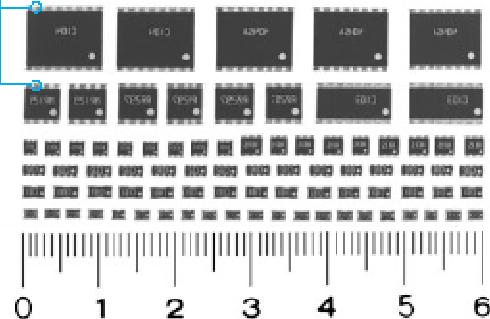
Model	Total Rated Power	Resistance Range (Ω) by Circuit Configuration		
		B	2B	C
CTNS1A	0.125 W	10 ~ 50K		10.0 ~ 100K
CTNS1D	0.125 W	10 ~ 50K		10.0 ~ 100K
CTNS2D	0.100 W	10 ~ 25K		10.0 ~ 50.0K
CTNS6D	0.250 W		10.0 ~ 100K	10.0 ~ 100K
CTNSS6D	0.150 W		10.0 ~ 10.0K	10.0 ~ 50.0K
CTNS8U	0.500 W			10.0 ~ 200K
CTNWS8U				(1.00M ~ Total)
CTNSS8D	0.125 W			10.0 ~ 50.0K
CTNMS16U	1.00 W			2.00M Total
CTNS16U	1.50 W			10.0M Total

CIRCUIT LAYOUT

CTNS1A, CTNS1D, CTNS2D		CTNSS6D	CTNS6D	CTNSS8D, CTNS8D, CTNS8U	CTNMS16D, CTNMS16U, CTNS16D, CTNS16U
B	C	2B	C	C	C



U-Shaped Product
with Electrode Structure
Processed product with grooves



FEATURES

AAC thin film network resistors ensure stable high performance as indicated by the excellent ratio T.C.R as between elements 1pp/ $^{\circ}$ C or less and absolute T.C.R as 5 pp/ $^{\circ}$ C. The absolute tolerance as 0.5%.

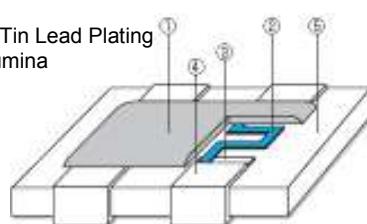
- "U-type" electrodes offering excellent durability, ensuring superb durability for soldering flow, re-flow soldering, or dip soldering, and is also very beneficial for the durability of wire bonding
- A perfect solution to replace the network resistor of SOP, SIP or DIP types.
- High Reliable Termination

APPLICATIONS

- Medical Instrument
- Test Equipment For Semiconductor
- Precision Measuring Equipment
- Electric Components For Automotive

CONSTRUCTION

1. Epoxy Protective Film
2. Ni-Cr Resistive Element
3. Cu Electrode
4. Ni Plating and Tin Lead Plating
5. High Purity Alumina Substrate



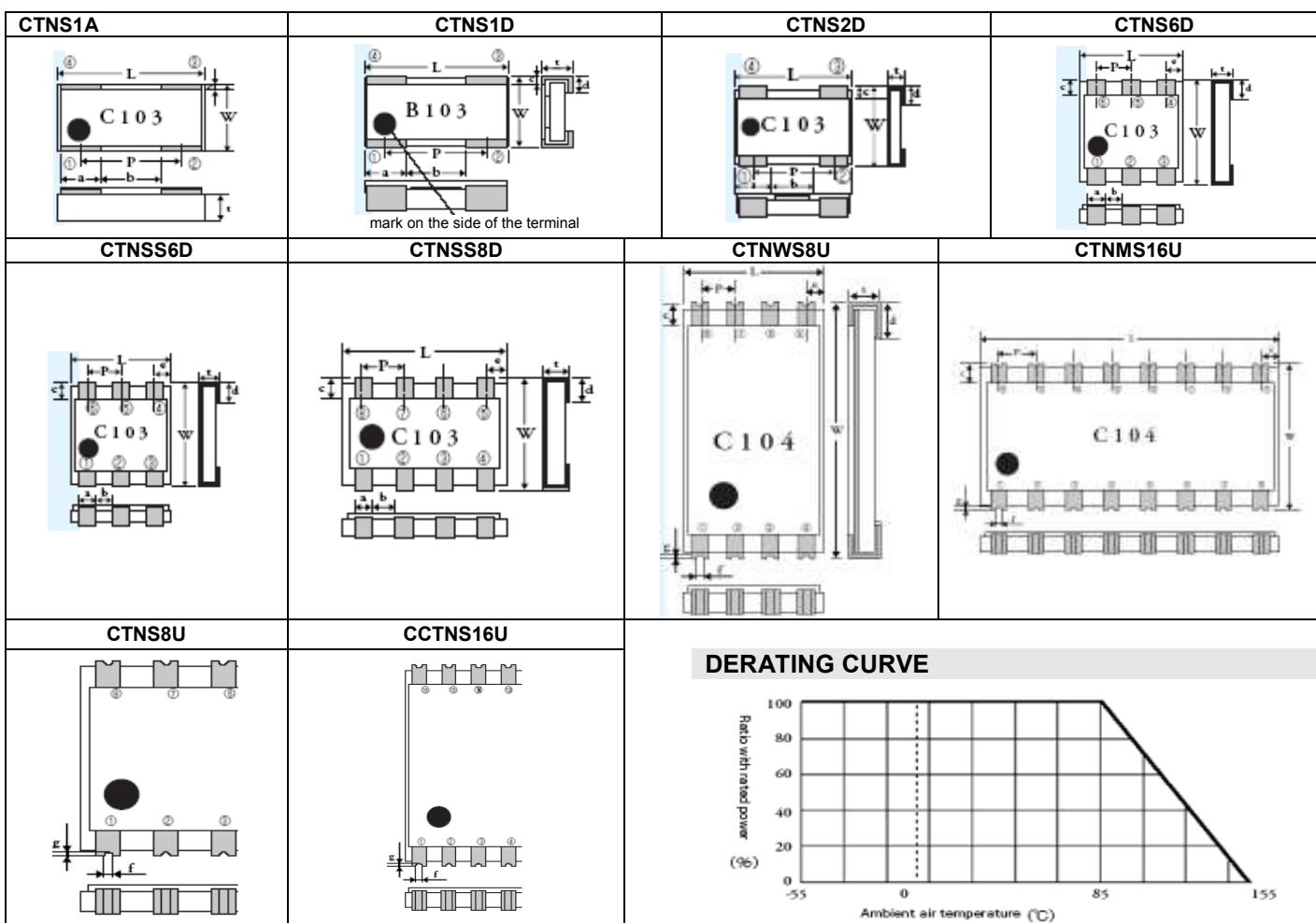


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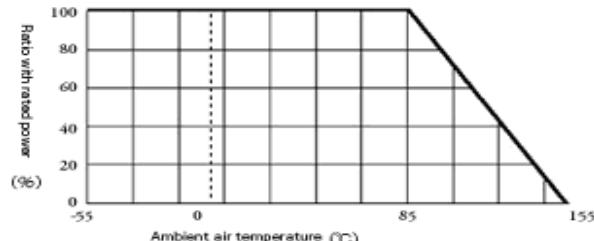
DIMENSIONS (mm)

Model	L	W	P	a	b	c	d	e	f	g	t
CTNS1A	3.2 ± 0.2	1.6 ± 0.2	2.0 ± 0.1	1.0 ± 0.1	1.0 ± 0.1	0.15 ± 0.05	0.4 ± 0.1				0.55 max
CTNS1D											
CTNS2D	2.0 ± 0.2	1.25 ± 0.2	1.3 ± 0.2	0.7 ± 0.2	0.6 ± 0.2	0.1 ± 0.05	0.25 ± 0.1				0.55 max
CTNS6D	2.54 ± 0.1	2.54 ± 0.1	0.86 ± 0.1	0.43 ± 0.1	0.43 ± 0.2	0.41 ± 0.2	0.5 ± 0.2	0.41 ± 0.1			0.55 max
CTNSS6D	2.0 ± 0.1	2.0 ± 0.1	0.72 ± 0.1	0.36 ± 0.1	0.36 ± 0.1	0.28 ± 0.2	0.4 ± 0.2	0.28 ± 0.1			0.55 max
CTNS8U	5.08 ± 0.2	5.1 ± 0.2	1.27 ± 0.2	0.635 ± 0.1	0.635 ± 0.1	0.6 ± 0.2	0.8 ± 0.2	0.635 ± 0.1	0.2	0.1	0.9 max
CTNSS8D	3.2 ± 0.2	1.6 ± 0.2	0.8 ± 0.1	0.4 ± 0.1	0.4 ± 0.1	0.3 ± 0.2	0.4 ± 0.2	0.3 ± 0.1			0.55 max
CTNWS8U	5.08 ± 0.2	8 ± 0.2	1.27 ± 0.2	0.635 ± 0.1	0.635 ± 0.1	0.6 ± 0.2	0.8 ± 0.2	0.635 ± 0.1	0.2	0.1	0.9 max
CTNMS16U	10.16 ± 0.2	5.1 ± 0.2	1.27 ± 0.2	0.635 ± 0.1	0.635 ± 0.1	0.6 ± 0.2	0.8 ± 0.2	0.635 ± 0.1	0.2	0.1	0.9 max
CTNS16U									0.2	0.1	

SCHEMATIC



DERATING CURVE



PERFORMANCE

Item	Test Condition	Specification
Short Time Overload	Application of 2.5 times the rated voltage for 5 seconds	± (0.1% + 0.05Ω)
Heat Resistance During Soldering	Dip in Solder at 260°C ± 5°C for 10 ± 1 seconds	± (0.05% + 0.05Ω)
Temperature Cycles	100 cycles between -55°C ~ +125°C	± (0.1% + 0.05Ω)
Service Life Under Heavy Load	1,000 hours at 85°C, rated voltage with intermittent load	± (0.1% + 0.05Ω)
Longevity Under Heavy Humidity Load	95% RH for 1000 hrs at 40°C, rated voltage with intermittent load	± (0.1% + 0.05Ω)
Absolute Value indicating Secular Change	1 year at ambient temperature, normal humidity without load	±50ppm (within ±50ppm / year)
Relative Value Indicating Secular Change	1 year at ambient temperature, normal humidity without load	±10ppm (within ±10ppm / year)

The content of this specification may change without notification 4/05/2015