American Accurate Components, Inc.
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Tel: +1 949-453-9888 | Email: sales@aacix.com | Website: www.aacix.com

GOLD TERMINATION THICK FILM CHIP RESISTOR ARRAYS & NETWORKS

HOW TO ORDER

CRNG16 8 SU 103 J A M

Packaging
M = Tape Reel B = Bulk

Terminal Style
A = Convex Round
B = Concave
C = Convex Square

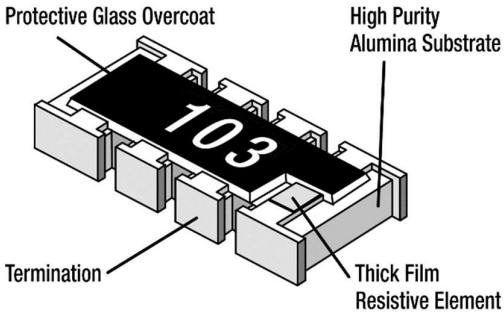
Resistance Tolerance
J = ±5%, F = ±1%

Resistance Value
2 sig. fig & 1 multiplier ±5%
3 sig. fig & 1 multiplier ±1%

Circuit Type/Pattern
Refer to Circuit Schematic
V , SU, or SC

Resistors
2, 4, 8, 15

Series
CRNG06 = 0.6mm Width
CRNG10 = 1.0mm
CRNG16 = 1.6mm
CRNG21 = 2.1mm
CRNG31 = 3.1mm



FEATURES

- Single Component reduces board space and
- component count
- Resistance Tolerances of ±5%, ±2%, and ±1%
- Convex and Concave Termination
- Isolated and Bussed Circuitry
- High Reliable Termination
- Gold Thickness start from 7.87µin
- RoHs Compliance 2011/65/EU

ELECTRICAL SPECIFICATIONS SMALL/STANDARD SIZE

Series	Resistor/Pin		Circuit	Terminal	Resistance (ohm)	Tolerance	Power Rating*	Voltage		Operating Temperature
								Working	Overload	
CRNG06-2V	2	4	Isolated	C	10- 1M	±5%	0.031W	25V	50V	-55°C ~ +125°C
CRNG10-2V	2	4	Isolated	C	10- 1M	±5%	0.063W	25V	50V	-55°C ~ +125°C
CRNG10-4V	4	8	Isolated	B, C	10- 1M	±1%, ±5%	0.063W	25V	50V	-55°C ~ +125°C
CRNG16-2V	2	4	Isolated	B, C	0, 10- 1M	±5%	0.063W	50V	100V	-55°C ~ +125°C
CRNG16-4V	4	8	Isolated	A, B, C	0, 10- 1M	±1%, ±2%, ±5%	0.063W	50V	100V	-55°C ~ +125°C
CRNG16-8V	8	16	Isolated	C	0, 10- 1M	±1%, ±5%	0.031W	25V	50V	-55°C ~ +125°C
CRNG16-8SU	8	10	Bussed	C	0, 10- 1M	±5%	0.031W	25V	50V	-55°C ~ +125°C
CRNG21-8SC	8	10	Bussed	B	0, 10- 1M	±5%	0.063W	25V	50V	-55°C ~ +125°C

* Power rating is @ 70°C

ELECTRICAL SPECIFICATIONS STANDARD/LARGE SIZE

CRNG31-4V	4	8	Isolated	A, B, C	0, 10- 1M	±1%, ±2%, ±5%	0.125W	50V	100V	-55°C ~ +125°C
CRNG31-8SU	8	10	Bussed	B, C	0, 10- 1M	±1%, ±2%, ±5%	0.063W	50V	100V	-55°C ~ +125°C
CRNG31-8V	8	16	Isolated	A	0, 10- 1M	±5%	0.063W	50V	100V	-55°C ~ +125°C
CRNG31-15SU	15	16	Bussed	A	0, 10- 1M	±5%	0.063W	50V	100V	-55°C ~ +125°C
CRNG76-8V	8	16	Isolated	A	0, 10- 1M	±5%	0.125W	50V	100V	-55°C ~ +125°C
CRNG76-15SU	15	16	Bussed	A	0, 10- 1M	±5%	0.063W	50V	100V	-55°C ~ +125°C

* Power rating is @ 70°C

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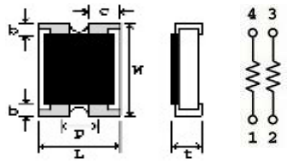
▪ Dimensions & Schematics

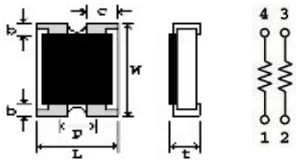
CRNG06-2V Convex-Square

L	0.80 ± 0.10
W	0.60 ± 0.10
t	0.35 ± 0.10
a	
b	0.10 ± 0.07
c	0.33 ± 0.10
p	0.48 ± 0.05



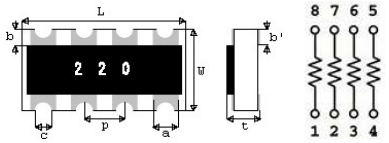
CRNG10-2V Convex-Square

L	1.00 ± 0.10
W	1.00 ± 0.10
t	0.35 ± 0.10
a	
b	0.15 ± 0.10
c	0.408 ± 0.15
p	0.50± 0.05



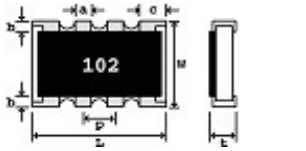
CRNG10-4V Concave

L	2.00 ± 0.10
W	1.00 ± 0.10
t	0.45 ± 0.10
a	0.30 ± 0.10
b	0.20 ± 0.15
b'	0.30 ± 0.15
c	0.15
p	0.50



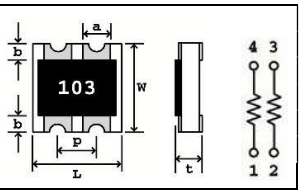
CRNG10-4V Convex-Square

L	2.00 ± 0.20
W	1.00 ± 0.15
t	0.35 ± 0.10
a	0.30 ± 0.15
b	0.15 ± 0.10
b'	
c	0.40 ± 0.15
p	0.50 ± 0.05



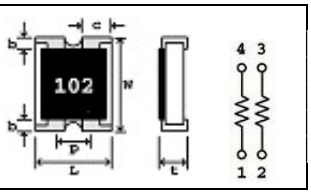
CRNG16-2V Concave

L	1.60 ± 0.20
W	1.60 ± 0.10
t	0.50 ± 0.10
a	0.40 ± 0.15
b	0.30 ± 0.20
c	0.60 ± 0.15
p	0.80 ± 0.05



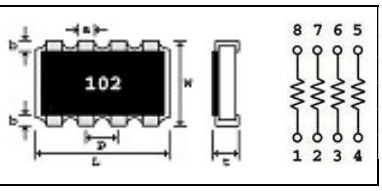
CRNG16-2V Convex-Square

L	1.60 ± 0.20
W	1.60 ± 0.10
t	0.50 ± 0.10
a	
b	0.25 ± 0.15
c	0.60 ± 0.15
p	0.80 ± 0.05



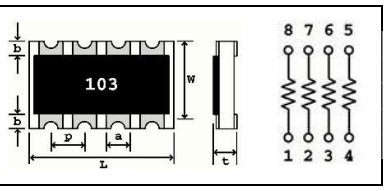
CRNG16-4V Convex-Round

L	3.20 ± 0.10
W	1.60 ± 0.10
t	0.50 ± 0.10
a	0.50 ± 0.15
b	0.25 ± 0.15
c	
p	0.80 ± 0.05



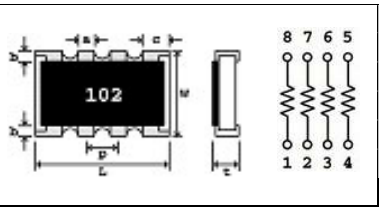
CRNG16-4V Concave

L	3.20 ± 0.10
W	1.60 ± 0.10
t	0.50 ± 0.10
a	0.45 ± 0.05
b	0.30 ± 0.20
c	
p	0.80 ± 0.05



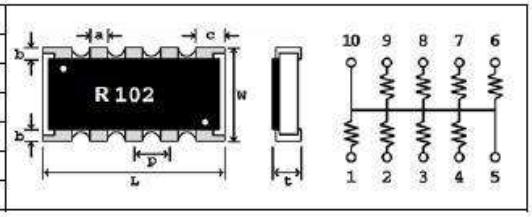
CRNG16-4V Convex-Square

L	3.20 ± 0.20
W	1.60 ± 0.15
t	0.40 ± 0.10
a	0.30 ± 0.10
b	0.30 ± 0.20
c	0.40 ± 0.10
p	0.50 ± 0.05



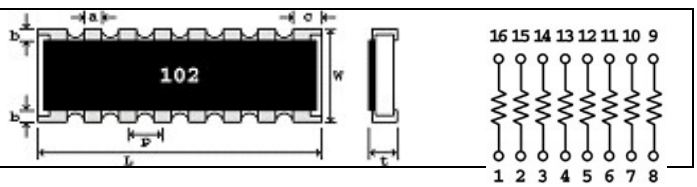
CRNG16-8SU Convex-Square

L	3.20 ± 0.20
W	1.60 ± 0.20
t	0.50 ± 0.10
a	0.34 ± 0.15
b	0.30 ± 0.20
c	0.49 ± 0.15
p	0.64 ± 0.10



CRNG16-8V Convex-Square

L	4.00 ± 0.20



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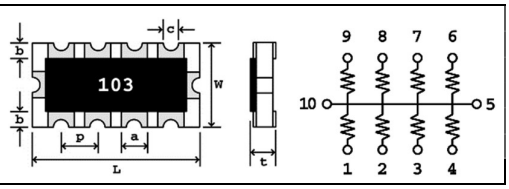
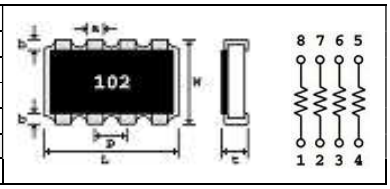
CRNG21-8SC Concave

L	4.00 ± 0.20
W	2.10 ± 0.20
t	0.60 ± 0.10
a	0.50 ± 0.20
b	0.25 ± 0.20
c	
p	0.80 ± 0.10



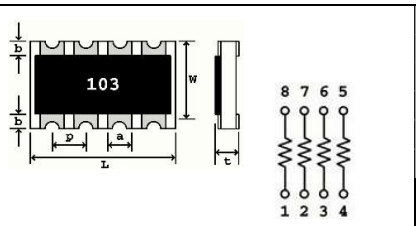
CRNG31-4V Convex-Round

L	5.08 ± 0.20
W	3.10 ± 0.20
t	0.55 ± 0.10
a	0.80 ± 0.20
b	0.50 ± 0.20
c	
p	1.27 ± 0.10



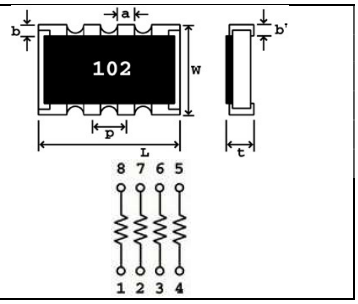
CRNG31-4V Concave

L	5.08 ± 0.20
W	3.00 ± 0.20
t	0.60 ± 0.10
a	0.80 ± 0.20
b	0.55 ± 0.20
b'	
p	1.27 ± 0.10



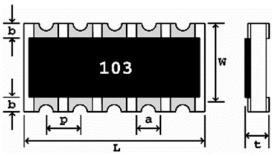
CRNG31-4V Convex-Square

L	5.08 ± 0.20
W	3.10 ± 0.20
t	0.55 ± 0.10
a	0.80 ± 0.20
b	0.50 ± 0.20
b'	0.30 ± 0.20
p	1.27



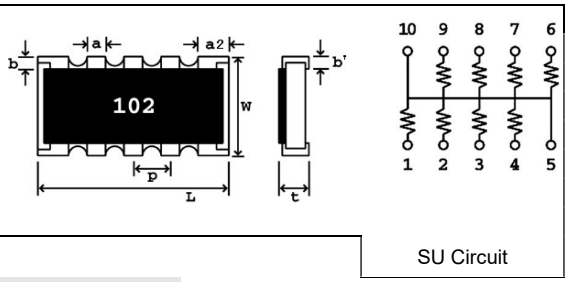
CRNG31-8SL/SU Concave

L	6.40 ± 0.20
W	3.10 ± 0.20
t	0.60 ± 0.10
a	0.70 ± 0.20
a^2	
b	0.35 ± 0.15
b'	
p	1.27 ± 0.10



CRNG31-8SU Convex-Square

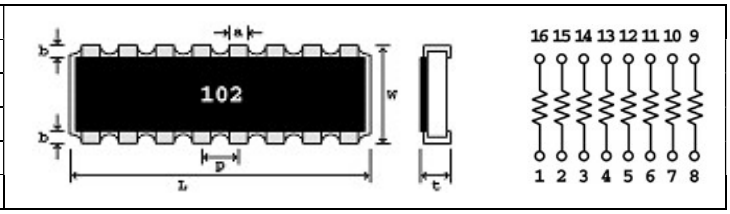
L	6.40 ± 0.20
W	3.20 ± 0.20
t	0.60 ± 0.10
a	0.80 ± 0.20
a^2	1.05
b	0.50 ± 0.20
b'	0.30 ± 0.20
p	1.27



SU Circuit

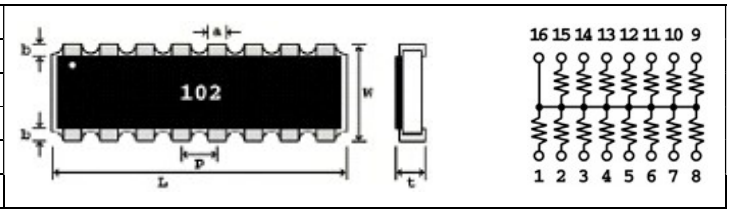
CRNG31-8V Convex-Round

L	10.16 ± 0.20
W	3.10 ± 0.20
t	0.55 ± 0.10
a	0.80 ± 0.20
b	0.50 ± 0.20
p	1.27 ± 0.10



CRNG31-15SU Convex-Round

L	10.16 ± 0.20
W	3.10 ± 0.20
t	0.55 ± 0.10
a	0.80 ± 0.20
b	0.50 ± 0.20
p	1.27 ± 0.10



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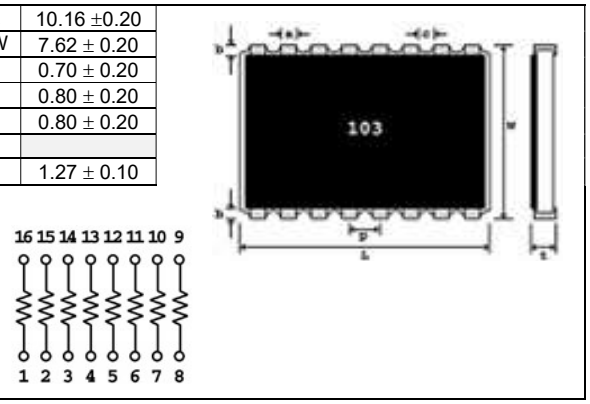
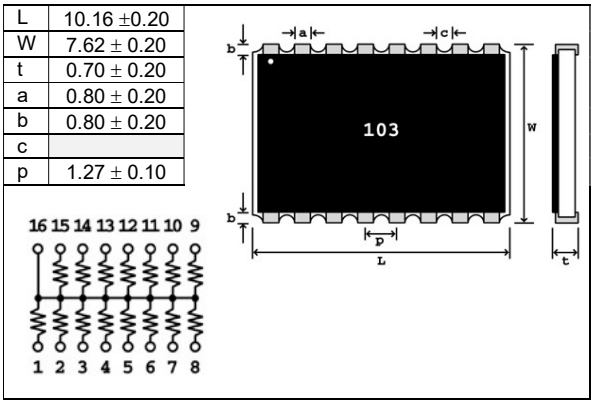
CRNG76-8V Convex-Round

L	10.16 ±0.20
W	7.62 ± 0.20
t	0.70 ± 0.20
a	0.80 ± 0.20
b	0.80 ± 0.20
c	
p	1.27 ± 0.10



CRNG76-15SU Convex-Round

L	10.16 ±0.20
W	7.62 ± 0.20
t	0.70 ± 0.20
a	0.80 ± 0.20
b	0.80 ± 0.20
c	
p	1.27 ± 0.10

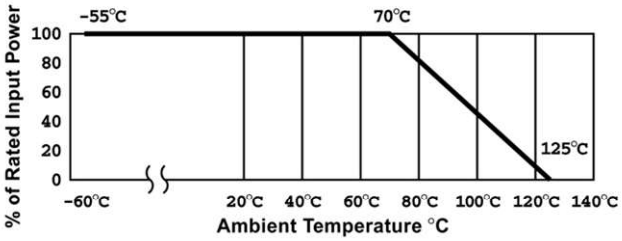


ELECTRICAL CHARACTERISTICS

Test Item	Conditions of Test	Test Results
Life/Endurance Test	EIA 575, π 3.14 1000 hours at 70°C, 1.5 hours "on", 0.5 hours "off"	± 1.5%
Shot Time Overload	EIA 575, π 3.6 Short time overload	± 0.5%
Thermal Shock	EIA 575, π 3.5	± 0.5%
Moisture Resistance	EIA 575, π 3.10	± 1.0%
Resistance to Soldering Heat	EIA 575, π 3.8 10 seconds at 260°C solder bath temperature	± 2.0%
High Temperature Exposure	EIA 575, π 3.7	± 1.0%
Low Temperature Operations	EIA 575, π 3.6	± 0.5%
Solderability & Leaching	EIA 575, π 3.12	95% Coverage

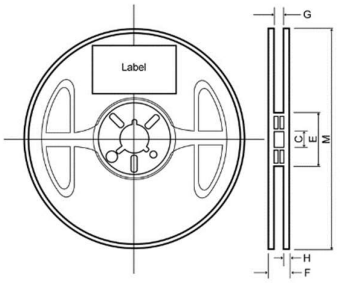
DERATING CURVE

The resistor shall have a power rating based on continuous full-load operation at an ambient temperature of 70°C, the load shall be derated in accordance with the figure below.



REEL DRAWINGS & DIMENSIONS (mm)

7" Reel (M)	
M	180±0.3
	1.20
C	13.0 ± 0.2
G	9.0 ± 0.3
E	56 ± 1.0
	11.4 ± 1.0



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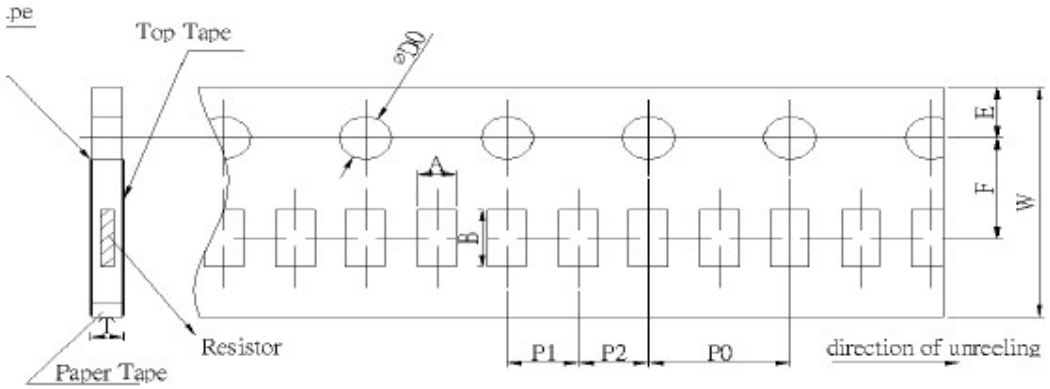
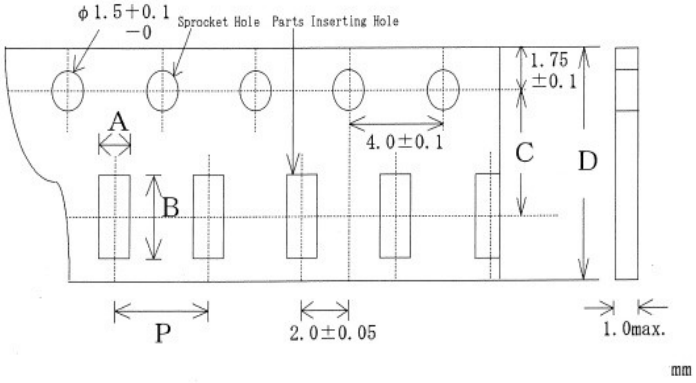
TAPE DIMENSION

Type	A	B	W	F	E	P_1	P_2	P_0	θD_0	T
CRNG10-2	1.2±0.15	1.2±0.1	8.0±0.2	3.5±0.05	1.75±0.1	2.0±0.01	2.0±0.05	4.0±0.1	$1.5^{+0.1}_{0}$	0.45±0.1
CRNG10-4		2.2±0.2								0.64±0.1



Type	A	B	C	D	P
CRNG31-15SU-103JAM	3.6±0.1	10.6±0.1	7.5±0.1	16.0±0.1	8.0±0.1



PACKAGING SPECIFICATION

Size	Tape	7" Reel Quantity
CRNG06-2V	Paper Tape	10,000
CRNG10-2V	Paper Tape	10,000
CRNG10-4V	Paper Tape	10,000
CRNG16-2V	Paper Tape	5,000
CRNG16-4V	Paper Tape	5,000
CRNG16-8V	Paper Tape	4,000
CRNG16-8SU	Paper Tape	5,000
CRNG21-8SC	Plastic Tape	4,000
CRNG31-4V	Plastic Tape	4,000
CRNG31-8SL	Plastic Tape	4,000
CRNG31-8SU	Plastic Tape	4,000
CRNG31-8V	Plastic Tape	2,000
CRNG31-15SU	Plastic Tape	2,000
CRNG76-8V	Plastic Tape	1,000
CRNG76-15SU	Plastic Tape	1,000

LABEL DESCRIPTION

An identification label is on one side surface of a reel, marked with the following items of information.

1. Chip Resistor Array or Network
2. Part Number
3. Quantity
4. Lot Number *
5. Manufacturer's name

* The suffix "L" on the lot number indicates that this item is lead free. As of September 2004, all new production items of the series CRNG are no longer containing tin/lead (SnPb) terminals; they are lead free and in compliance with Lead Free/RoHS.

The content of this specification may change without notification 05/15/2015