

# Chip Resistors Array

## 1.Scope

This specification prescribes thick film chip resistor arrays for use in electronics system

## 2.Designation

2.1 Designation is made in accordance with the following system

## 3.Rating

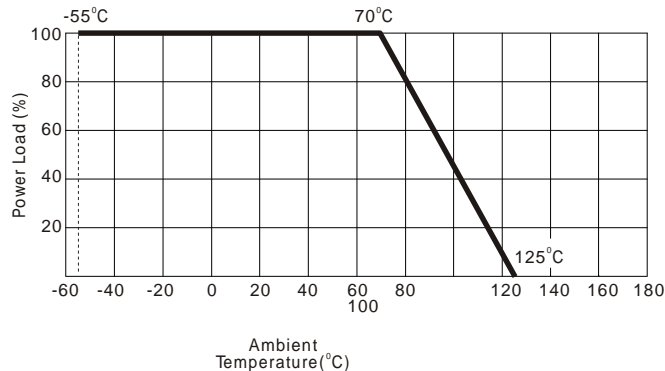
### 3.1 Rated Power (%)

Rated power shall be load power corresponding to normal wattage suitable for continuous use at 70 °C ambient temperature. In case the ambient temperature exceeds 70 °C , reduce the load power in accordance with derating curve shown as graph 4.2 below.

Type	Rated Power Per Element	Max. Working Voltage	Max. Overload Voltage	Resistance Temperature Coefficient
CA0504	0.0625W	25V	50V	+250 ppm/°C
CA0508	0.0625W	25V	50V	+250 ppm/°C
CA0608	0.0625W	50V	100V	+200 ppm/°C
CA0610	0.0625W	25V	50V	+200 ppm/°C

\* Lesser of  $\sqrt{PR}$  or  $r_{max}$

### 3.2 Derating Curve



### 3.3 Operating and Storage Temperature Range -55°C~+125°C

### 3.4 Rated Voltage

The rated voltage is calculated from the rated power and normal resistance by the following formula

$$E = \sqrt{PR}$$

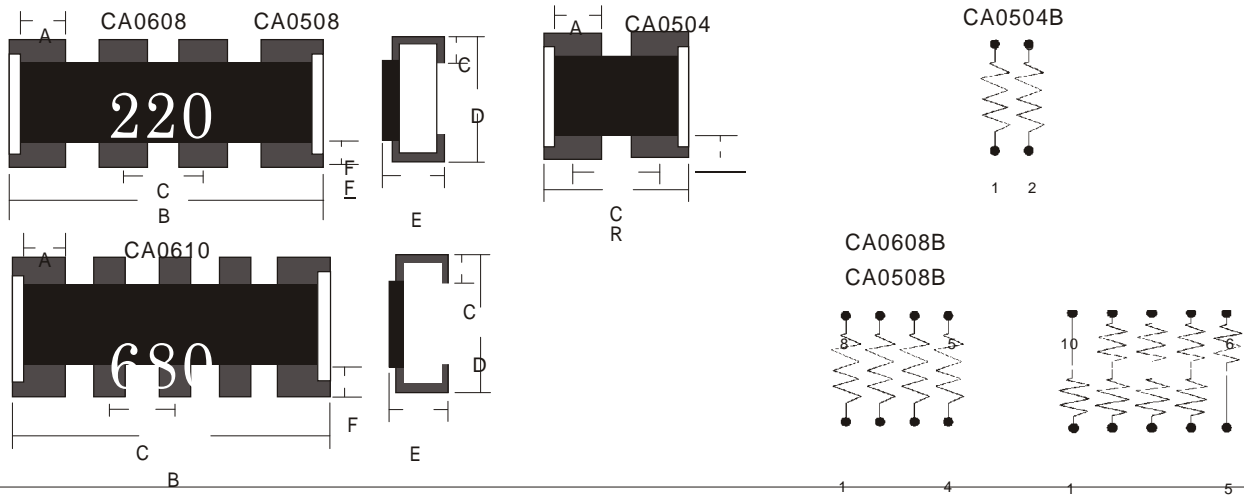
Where E Rated Voltage (V) P Rated Power (W) R Normal Resistance (ohm)

In case the value calculated by the formula varies from the maximum working voltage shown in table 4.1; the maximum working voltage shall be the lower one.

### 3.5 Resistance Range and Resistance Tolerance

Type	Ohmic Range and Tolerance		
	1%	2%	5%
CA0504	-	-	10 <sup>3</sup> -
CA0508	-	-	10 <sup>2</sup> -
CA0608	22 -	10 -	10 -
CA0610	-	-	22 -

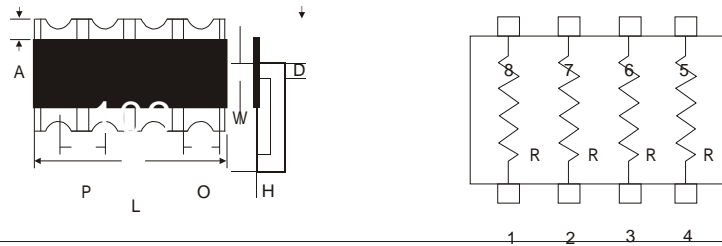
## 4. Dimension



### Dimensions

Type	Units	A	B	C	D	E	F	G
CA0504	mm	0.3 <sup>+0.1</sup>	1.0 <sup>+0.1</sup>	0.5 <sup>+0.05</sup>	1.0 <sup>+0.1</sup>	0.4 <sup>+0.1</sup>	0.15 <sup>+0.1</sup>	0.25 Max
	Inch	0.012 <sup>+0.004</sup>	0.039 <sup>+0.004</sup>	0.020 <sup>+0.002</sup>	0.046 <sup>+0.004</sup>	0.016 <sup>+0.004</sup>	0.006 <sup>+0.004</sup>	0.010 Max
CA0508	mm	0.3 <sup>+0.1</sup>	2.0 <sup>+0.1</sup>	0.5 <sup>+0.05</sup>	1.0 <sup>+0.1</sup>	0.4 <sup>+0.1</sup>	0.15 <sup>+0.1</sup>	0.25 Max
	Inch	0.012 <sup>+0.004</sup>	0.079 <sup>+0.004</sup>	0.020 <sup>+0.002</sup>	0.040 <sup>+0.004</sup>	0.016 <sup>+0.004</sup>	0.006 <sup>+0.004</sup>	0.010 Max
CA0608	mm	0.5 <sup>+0.1</sup>	3.2 <sup>+0.1</sup>	0.8 <sup>+0.05</sup>	1.6 <sup>+0.1</sup>	0.5 <sup>+0.1</sup>	0.3 <sup>+0.1</sup>	0.3 Max
	Inch	0.020 <sup>+0.004</sup>	0.126 <sup>+0.004</sup>	0.031 <sup>+0.002</sup>	0.063 <sup>+0.004</sup>	0.020 <sup>+0.004</sup>	0.012 <sup>+0.004</sup>	0.012 Max
CA0610	mm	0.3 <sup>+0.1</sup>	3.2 <sup>+0.1</sup>	0.64 <sup>+0.05</sup>	1.6 <sup>+0.1</sup>	0.5 <sup>+0.1</sup>	0.3 <sup>+0.1</sup>	0.3 Max
	Inch	0.012 <sup>+0.004</sup>	0.126 <sup>+0.004</sup>	0.025 <sup>+0.002</sup>	0.063 <sup>+0.004</sup>	0.020 <sup>+0.004</sup>	0.012 <sup>+0.004</sup>	0.010 Max

CA0608

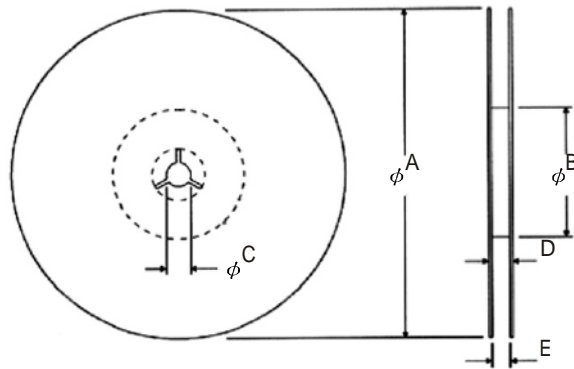


## 5. Environmental Performance

Description	Specification Limits	Test Methods
Temperature Coefficient	± Refer table 4.1	JIS C5202 5.2
Short Time Overload	-(2%+0.1ohm) Max.	JIS C5202 5.5
Resistance to Soldering Heat	+ 1%+0.1ohm) Max.	JIS C5202 6.4
Solderability	- ±95% Coverage Min.	JIS C5202 6.5
Bending Strength	1%+0.1ohm) Max. NO Damage	JIS C5202 6.1
Load Life	±(3%+0.1ohm) Max.	JIS C5202 7.10
Moisture Resistance	-(3%+0.1ohm) Max.	JIS C5202 7.9
Temperature Cycle	(3%+0.1ohm) Max.	JIS C5202 7.4

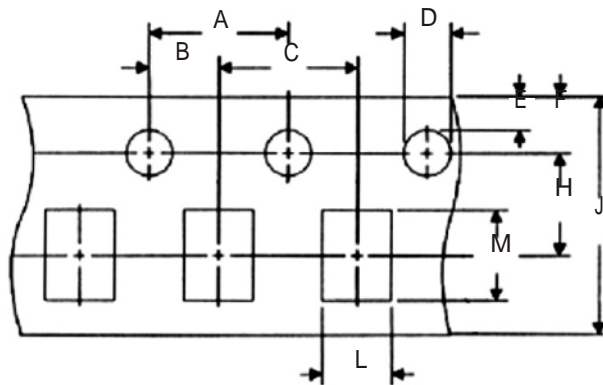
## 6. Package

### 6.1 Taping Specification



#### Dimensions

Type	Units	A	B	C	D	E
CR01 CR02	mm	$\phi 178$ 2+	$\phi 60$ 2+	$\phi 13.5$ 0.5+	12.5 1.5+	9.8 1.5+
CR03 CR05 CR06	Inch	7.008 0.080	2.362 0.080	0.512 0.020	0.492 0.060	0.386 0.060
CR20 CR12	mm	178	60	13.5 0.5	15.4	13
	Inch	7.008 $\pm$ 0.08	2.362 $\pm$ 0.080	0.512 $\pm$ 0.020	0.606 $\pm$ 0.040	0.511 $\pm$ 0.011



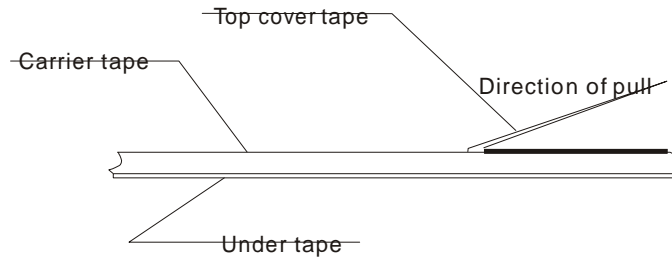
#### Dimensions

Type	Units	A	B	C	D	E	F	H	J	L	M
CR02	mm	4 0.1	2 0.05	4 0.1	$1.5^{+0.1}$ -0	1 0.1	1.75 0.1	3.5 0.05	8 0.2	0.65 0.1	1.15 0.1
	Inch	0.157 0.004	0.079 0.002	0.157 0.04	$0.059^{+0.004}$ -0	0.039 0.004	0.069 0.004	0.138 0.002	0.315 0.008	0.026 0.004	0.045 0.004
CR03	mm	4 0.1	2 0.05	4 0.1	$1.5^{+0.1}$ -0	1 0.1	1.75 0.1	3.5 0.05	8 0.2	1.1 0.1	1.9 0.1
	Inch	0.157 0.004	0.079 0.002	0.157 0.04	$0.059^{+0.004}$ -0	0.039 0.004	0.069 0.004	0.138 0.002	0.315 0.008	0.043 0.004	0.079 0.004
CR05	mm	4 0.1	2 0.05	4 0.1	$1.5^{+0.1}$ -0	1 0.1	1.75 0.1	3.5 0.05	8 0.2	1.65 0.2	2.4 0.2
	Inch	0.157 0.004	0.079 0.002	0.157 0.04	$0.059^{+0.004}$ -0	0.039 0.004	0.069 0.004	0.138 0.002	0.315 0.008	0.065 0.008	0.094 0.008
CR06	mm	4 0.1	2 0.05	4 0.1	$1.5^{+0.1}$ -0	1 0.1	1.75 0.1	3.5 0.05	8 0.2	2 0.2	3.6 0.2
	Inch	0.157 0.004	0.079 0.002	0.157 $\pm$ 0.04	$0.059^{+0.004}$ -0	0.039 0.004	0.069 0.004	0.138 0.002	0.315 0.008	0.079 0.008	0.142 0.008
CR20	mm	4 0.1	2 0.05	4 0.1	$1.5^{+0.1}$ -0	1 0.1	1.75 0.1	5.5 0.05	12.5 0.2	2.9 0.1	5.3 0.1
	Inch	0.157 0.004	0.079 0.002	0.157 0.04	$0.059^{+0.004}$ -0	0.039 0.004	0.069 0.004	0.216 0.002	0.492 0.008	0.114 0.004	0.208 0.004
CR12	mm	4 0.1	2 0.05	4 0.1	$1.5^{+0.1}$ -0	1 0.1	1.75 0.1	5.5 0.05	12.5 0.2	3.4 0.1	6.6 0.1
	Inch	0.157 0.004	0.079 0.002	0.157 0.04	$0.059^{+0.004}$ -0	0.039 0.004	0.069 0.004	0.216 0.002	0.492 0.008	0.133 0.004	0.26 0.004

Specifications given herein may be changed at any time without prior notice.

## 6.2 Peel Force of Top Cover Tape

The peel force of top cover tape shall be 0.1N to 0.7N(10 to 70 gf), when the top cover tape is pulled at a speed of 200 mm/min with the angle between the tape during peel and the direction of unreeling maintained at 165 to 180 degree as illustrated in below figure.



**CA 06 08 B N J 100R**  
 Type      Size      Pin Number      Circuit Type      Packing      Tolerance      Ohmage  
 (1)      (2)      (3)      (4)      (5)      (6)      (7)

Type (1)		Size (2)		Pin Number (3)		Circuit Type (4)		Packing (5)		Tolerance (6)		Ohmage (7)		
Code	Type	Code	Type	Code	Type	Code	Type	Code	Type	Code	%	Code	Value	
CA	Chip Array	05	0805	04	4 pin	B	Isolated Circuit	B	Bulk Convex	F	1%	100R	100 ohm	
		06	1206	08	8 pin	R	Bussed Circuit	L	Bulk Concave	J	5%	1K	1K ohm	
				10	10 pin	M	Bussed Circuit	N	Finished Good Convex	N	0%	10K5	10.5K Ohm	
				16	16 pin	F	Bussed Circuit	P	Finished Good Concave			100K	100K Ohm	
									C	Bulk Convex-Lead Free			1M	1M ohm
									H	Bulk Concave LF				
									F	Finished Good Convex LF				
								K	Finished Good Concave LF					

