# 阅读申明

1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描叙上的差异，建议读者做出适当判断。
4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有"数据手册"字样。

Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.

2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader's learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.

3. All product information provided on the website refer to solutions from manufacturers' technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.

4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with "Datasheets".
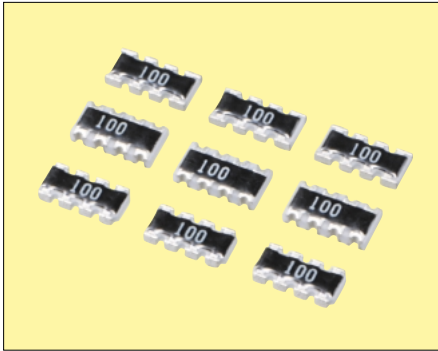
Features

- Reduction in mounting process & costs
- Save PCB space.
- Reduction of inventory control costs.

Applications

- Computer
- Printer
- Hard Disk Drive
- CD-ROM

How to Order

CRA3A 4E 103 J T
①   ②   ③ ④ ⑤

①Series
②Number of elements(4E : 4 elements)
③Resistance value (3 digits),
  Chip Jumper Arrays : 000
④Tolerance

J	±5%
Blank	Chip Jumper Arrays

⑤Packaging

T	Paper Taping, 5,000pcs/reel

Chip Resisitor Arrays have several resistor elements integrated as a single component.

- 4 Elements Array ————— CRA3A4E series   Convex Scallop type
                    ————— CRB3A4E series   Concave type
                    ————— CRC3A4E series   Convex Corner type

Rating

Chip resistor arrays		Chip jumper arrays	
Item	**Rating**	**Item**	**Rating**
Rated power(70°C)∗	1/16W element	**Rated current**	1A
Max working voltage	50V		
Max Over-load voltage	100V		
Resistance value	J : 10Ω to 2.2MΩ	**Conductive resistance value**	50mΩmax
Tolerance	J ±5%		
Working Temperature	−55 to +125°C		
Number of elements	4E: 4 Elements		

∗Rated Voltage : 50V or $\sqrt{\text{Rated power} \times \text{Resistance value}}$, whichever is less.

∗Standard Resistance Value: E-12 Series

∗For non standard value, optional please contact us.

Dimensions

(Unit : mm)

		4 elements CRA3A4E series	4 elements CRB3A4E series	4 elements CRC3A4E series
Shape				
Dimensions (mm)	**W**	1.60±0.15	1.60±0.15	1.60±0.15
	L	3.20±0.15	3.20±0.15	3.20±0.15
	c	0.30±0.20	0.30±0.20	0.30±0.20
	d	0.20±0.15	0.40±0.15	0.20±0.15
	T	0.50±0.10	0.60±0.10	0.50±0.10
	p	0.8typ	0.8typ	0.8typ

- Detailed specifications are available on request.
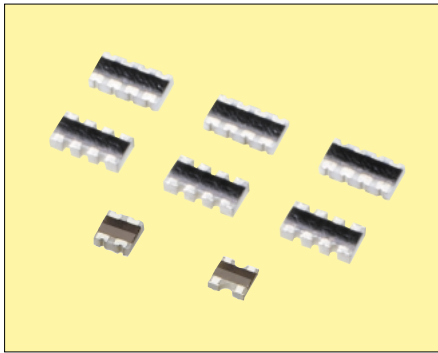
Miniature chip resistor arrays have 4 and 2 resistor elements integrated as a single component.

Features

- Miniture (2.0×1.0mm) Resistor Arrays
  Max 60% space saving compared with the use of standard chip array (3.2×1.6mm)
- 0.5mm Termination pitch (Same as IC lead-pin pitch)
  Easy designing of pattern layout and improve electrical characteristics for curcuit

- 4 element chip Resistors Array ── CRB2A4E series (⊔ Termination)
  CRC2A4E series (⊓ Termination)
- 2 element chip Resistors Array ── CRB11A2E series (⊔ Termination)
  CRC11A2E series (⊓ Termination)

How to Order

CRB2A 4E 103 J H
① ② ③ ④ ⑤

①Series(CRB2A: 2.0×1.0mm, ⊔ termination)
　　　(CRC2A: 2.0×1.0mm, ⊓ termination)
　　　(CRB11A: 1.0×1.0mm, ⊔ termination)
　　　(CRC11A: 1.0×1.0mm, ⊓ termination)
②Number of elements(4E: 4 elements)
　　　　　　　　　　(2E: 2 elements)
③Resistance Value(3 digits numbering)
　472 = 4.7kΩ, 103 = 10kΩ
　000 = 0Ω(Chip Jumper Array)
④Tolerance

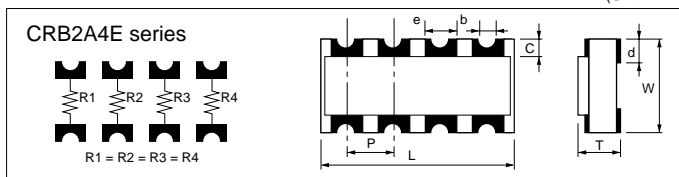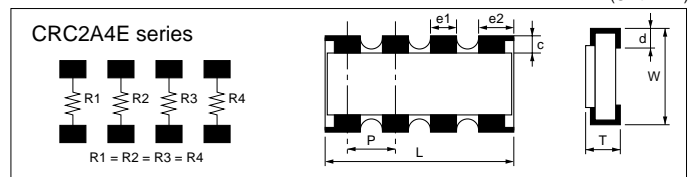| J	±5%	Blank	Chip Jumper Array

⑤Packaging

Code	Form	Material	Packing unit
H	Taping	Paper	10000pcs/reel

- 2mm pitch taping

Dimensions

CRB2A4E series (Unit : mm)

Code	L	W	T	P	b
Dimensions	$2.0^{+0.10}_{-0.10}$	$1.0^{+0.10}_{-0.10}$	$0.4^{+0.10}_{-0.10}$	0.5typ	φ0.15typ

Code	c	d	e		
Dimensions	$0.2^{+0.15}_{-0.15}$	$0.25^{+0.15}_{-0.15}$	0.25typ		

- Non-marking on chips

CRC2A4E series (Unit : mm)

Code	L	W	T	P
Dimensions	$2.0^{+0.10}_{-0.10}$	$1.0^{+0.10}_{-0.10}$	$0.4^{+0.10}_{-0.10}$	0.5typ

Code	c	d	e₁	e₂
Dimensions	$0.15^{+0.15}_{-0.15}$	$0.25^{+0.15}_{-0.15}$	$0.3^{+0.10}_{-0.10}$	$0.4^{+0.10}_{-0.10}$

- Non-marking on chips

CRB11A2E series (Unit : mm)
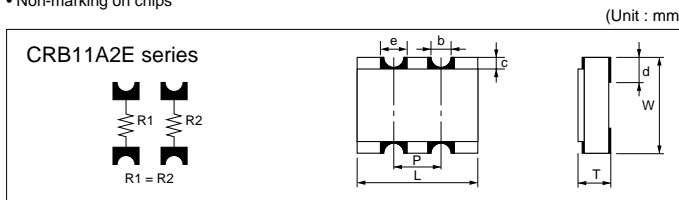
Code	L	W	T	P	b
Dimensions	$1.00^{+0.10}_{-0.10}$	$1.00^{+0.10}_{-0.10}$	$0.40^{+0.10}_{-0.10}$	0.50typ	φ0.15typ

Code	c	d	e		
Dimensions	$0.20^{+0.15}_{-0.15}$	$0.25^{+0.15}_{-0.15}$	0.25typ		

- Non-marking on chips

CRC11A2E series (Unit : mm)
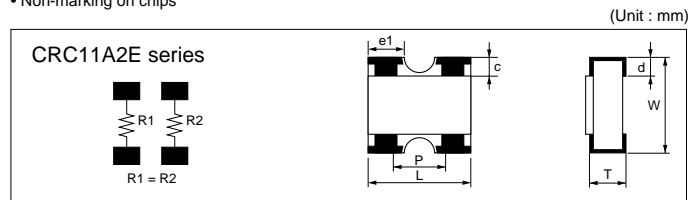
Code	L	W	T	P
Dimensions	$1.00^{+0.10}_{-0.10}$	$1.00^{+0.10}_{-0.10}$	$0.35^{+0.05}_{-0.05}$	0.65typ

Code	c	d	e₁	
Dimensions	$0.20^{+0.15}_{-0.15}$	$0.20^{+0.15}_{-0.15}$	$0.33^{+0.10}_{-0.10}$	

- Non-marking on chips

Rating

Chip resistor arrays		Chip jumper array	
Item	Rating	Item	Rating
Rated power(70°C)	1/32W/element	Rated current	1A
Max working ∗ voltage	25V		
Max Over-load voltage	50V		
Resistance value	10Ω to 1MΩ	Conductive resistance value	50mΩmax
Tolerance	J : ±5%		
Working Temperature	−55 to +125°C		
Number of elements	4E : 4Elements, 2E : 2Elements		

∗ Rated Voltage : $\sqrt{\text{Rated power} \times \text{Resistance value}}$, whichever is less.
∗ Standard Resistance Value: E-6 Series
∗ Please contact sales engineer for any other requirements of the nominal resistance value and the tolerance.
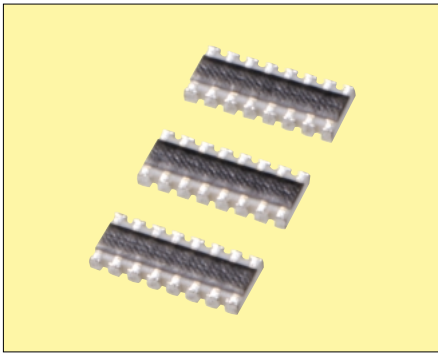
Features

• 0.5mm termination pitch(same as IC lead-pin pitch).
Easy designing of pattern layout and improve electrical characteristics for circuit. 3.8mm length of the chip makes the assembly of the next chip possible without changing the pattern pitch.

• 8 element chip Resistor Array ————— CRC4A8E series (� Termination)

How to Order

CRC4A 8E 103 J T
① ② ③ ④ ⑤

①Series CRC4A
②Number of elements
  8E = 8 elements
③Resistance value
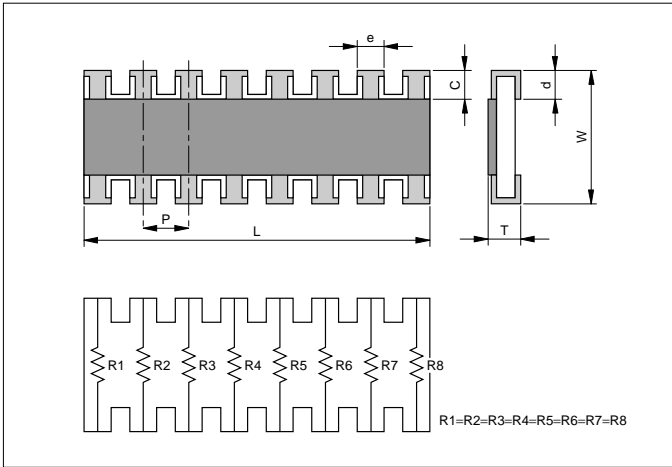 3 digits numbering
④Tolerance

J	±5%

⑤Packaging

T	Taping paper 5,000pcs/reel

Dimensions

(Unit : mm)

R1=R2=R3=R4=R5=R6=R7=R8

Code	L	W	T	P	c
Dimensions	3.8±0.1	1.6±0.1	0.45±0.1	0.5typ	0.3±0.2

Code	d	e
Dimensions	0.3±0.15	0.3±0.1

• No marking on chips.

Rating

Chip Resistor Arrays	
Item	**Rating**
Rated power(70°C)	1/16W/element
	1/4W/packege
Max working voltage *	25V
Max over-load voltage	50V
Resistance value	10Ω to 1MΩ
Torerance	J:±5%
Working temperature	−55 to +125°C
Number of elements	8E:8elements

∗ Rated Voltage : $\sqrt{\text{Rated power} \times \text{Resistance value}}$,
  whichever is less.
∗ Standard Resistance Value: E-6 Series
∗ Please contact sales engineer for any other requirements of the nominal resistance value and the tolerance.
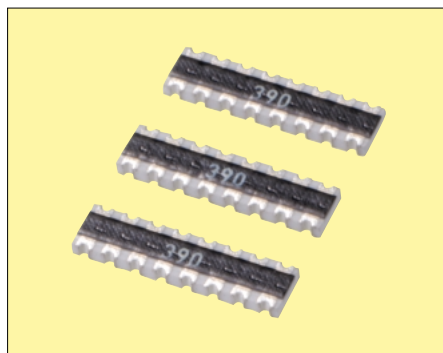
Features

- Equal length conductors can be traced out from 0.8mm pitch termination.
  Also, good matching at low impedance.

- 8 element chip Resistor Array ——————— CRB6A8E series (⊔ Termination)

How to Order

CRB6A 8E 390 G U
① ② ③ ④ ⑤

①Series CRB6A
②Number of elements
  8E = 8 elements
③Resistance value
  3 digits numbering
④Tolerance

G	±2%

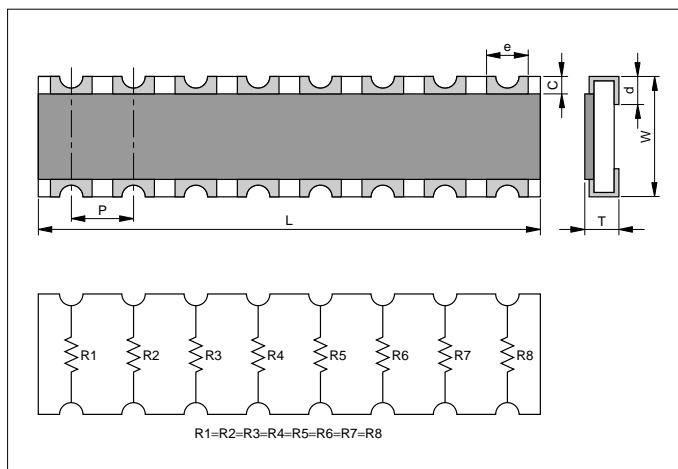⑤Packaging

U	Taping plastic 4,000pcs/reel

Dimensions

(Unit : mm)

R1=R2=R3=R4=R5=R6=R7=R8

Code	L	W	T	P	c
Dimensions	6.4±0.2	1.6±0.2	0.6±0.1	0.8typ	0.3±0.2

Code	d	e(Top side)	e(Bottom side)
Dimensions	0.4±0.15	0.5±0.1	0.4±0.15

Rating

Chip Resistor Arrays	
Item	**Rating**
Rated power(70°C)	1/16W/element
Max working voltage[*]	50V
Max over-load voltage	100V
Resistance value	10Ω to 1MΩ
Torerance	G:±2%
Working temperature	−55 to +125°C
Number of elements	8E:8elements

∗ Rated Voltage : √Rated power × Resistance value, whichever is less.

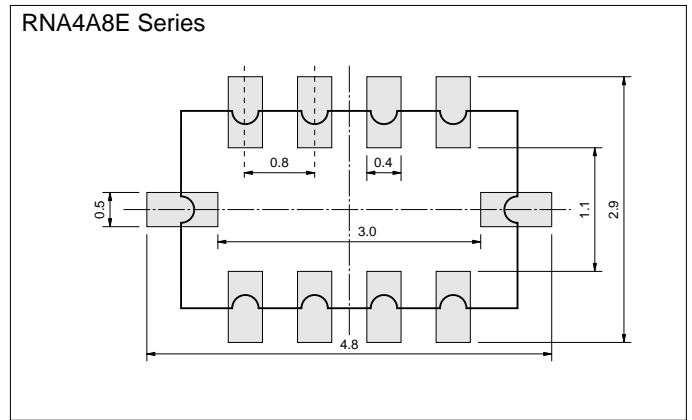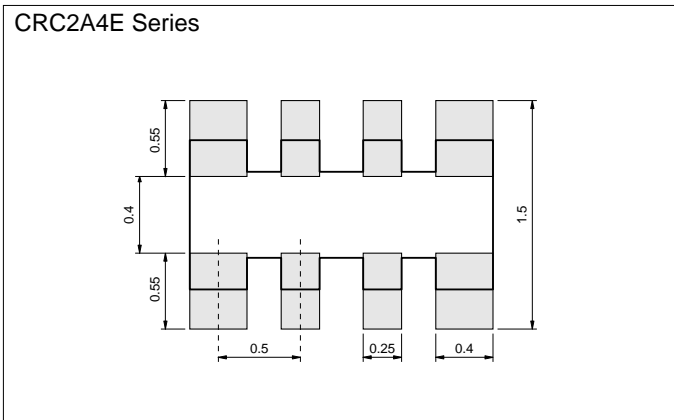∗ Standard Resistance Value: E-6 Series

∗ Please contact sales engineer for any other requirements of the nominal resistance value and the tolerance.

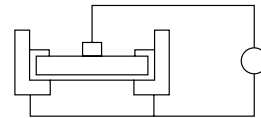## Recommended Land Patterns is referred the following for example

(Unit : mm)

Solder resist
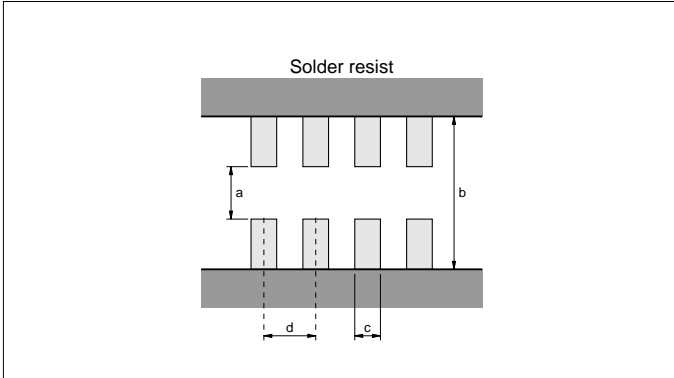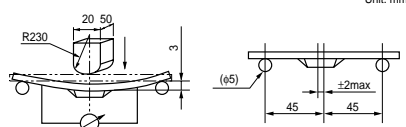
Series	a	b	c	d
CRA3A4E	0.8	2.4	0.4	0.8
CRB3A4E	0.7	2.3	0.4	0.8
CRC3A4E	0.8	2.4	0.4	0.8
CRB2A4E	0.4	1.5	0.25	0.5
CRB11A2E	0.4	1.5	0.25	0.5
CRC11A2E	0.5	1.5	0.4	0.65
CRC4A8E	0.8	2.4	0.3	0.5
CRB6A8E	0.7	2.3	0.4	0.8
ATC1A	0.5	1.5	0.4	0.65

CRC2A4E Series

RNA4A8E Series

Electrical Characteristics

Item	Standard		Test Conditions	
	Resistor	**Jumper**	**Resistor**	**Jumper**
DC Resistance	Within Initial Tolerance	50mΩmax	Power Contdition A (20°C, 65%RH)	
Temperature Characteristics	Resistance(Ω): *D, F 10≤R≤1M → TCR(ppm/°C): −100 to +100; J, CR05:F R <10 → −100 to +600; 10≤ R ≤1M → −250 to +250; 1M< R → −500 to +300. *Except CR05		Test Temperature: 25,125(°C) $\Delta R/R = R_2 - R_1/R_1 \times 1/T_2 - T_1 \times 10^6$ $\Delta R/R$: Temp. Coefficient (ppm/°C) T_1: 25(°C) T_2: 125(°C) R_1: T_1 Resistance at (Ω) R_2: T_2 Resistance at (Ω)	
Short-time Overload — ΔR/R	±(2.0%+0.10Ω)max of the intial value	50mΩmax	(1) Apply 2.0×rated voltage for 5sec. (2.5×rated voltage for Arrays) (2) Wait 30minutes (3) Measure resistance CR03: 30Vmax CR05: 50Vmax CR10: 100Vmax CR21: 200Vmax CR32: 400Vmax CRA3A, CRB3A, CRC3A : 100V max	(1) 2A for 5sec. (CJ03: 1A) (2) Wait 30minutes (3) Measure resistance
Short-time Overload — Visual	No evidence of mechanical damage intermittent overload			
Intermittent Overload — ΔR/R	±(5%+0.1Ω)max of the intial value	50mΩmax	(1) Perform 10000voltage cycles as follows: ON(2.0×rated voltage, 2.5×for Arrays) 1sec. OFF 25sec. (2) Stabilization time 30min without loading (3) Measure resistance CR03: 30Vmax CR05: 50Vmax CR10: 100Vmax CR21: 200Vmax CR32: 400Vmax CRA3A, CRB3A, CRC3A : 100V max	(1) Perform 10000 current cycles as follows: ON(2A) 1sec. OFF 25sec. (2) Wait 30minutes (3) Measure resistance CJ03: 1A max
Intermittent Overload — Visual	No evidence of mechanical damage			
Dielectric Withstanding Voltage	No evidence of mechanical damage		Apply 500VAC for 1min (CR10 300VAC) (CR05, CRA3A, CRB3A, CRC3A 300VAC/1sec. CR03 50VAC/1min.)	
Insulation Resistance	■CR03, CJ03 : 10^8Ωmin ■CR05, CJ05 : 10^8Ωmin ■CR10, CJ10 : 10^9Ωmin ■CR21, CJ21 : 10^{10}Ωmin ■CR32, CJ32 : 10^{12}Ωmin ■CRA3A, CRB3A, CRC3A : 10^9Ωmin		Apply 500V DC. (CR05, CRA3A, CRB3A, CRC3A 100V DC CR03 50VDC)	

Mechanical Characteristics

Item		Standard		Test Conditions	
		Resistor	**Jumper**	**Resistor**	**Jumper**
Terminal Strength	∆R/R	±(1%+0.05Ω)max of the intial value	50mΩmax	Apply the load as show: Measure resistance during load application Unit: mm Bending in 10seconds R230 20 50 PC board: Glass epoxy t=1.6	
	Visual	No evidence of mechanical damage after loading			
Soldering Heat Resistance	∆R/R	±(1%+0.05Ω)max of the intial value	50mΩmax	Immerse into molten solder at 260±5°C for 10±1sec. Stabillize component at room temperature for 1hr. Measure resistance.	
	Visual	No evidence of leaching			
Solderability		Coverage ≥95% each termination end		Immerse in Rogin Flux for 2±0.5 sec. and in SN62 solder at 235±5°C for 2±0.5 sec.	
Anti-Vibration Test	∆R/R	±(1%+0.1Ω)max of the intial value	50mΩmax	2 hrs. each in X, Y and Z axis. (TTL 6hrs.)10 to 55 Hz sweep in 1min.at 1.5mm amplitude.	
	Visual	No evidence of mechanical damage			
Solvent Resistance	∆R/R	±(0.5%+0.05Ω)max of the intial value	50mΩmax	Immerse in static state butyl acetate at 20°C to 25°C for 30±5sec. Stabillize component at room temperature for 30min then measure Value.	
	Visual	No evidence of mechanical damage			

Environmental Characteristics

Item		Standard		Test Conditions	
		Resistor	**Jumper**	**Resistor**	**Jumper**
Temperature Cycle	∆R/R	±(1%+0.05Ω)max of the intial value	50mΩmax	1) Run 5cycles as follows: −55±3°C for 30min. 125±3°C for 30min. Room temp for 10-15min. 2) Stabilize component at room temperature for 1hr. then measure value.	
	Visual	No evidence of mechanical damage			
Low Temperature Storage	∆R/R	±(2%+0.1Ω)max of the intial value	50mΩmax	1) Dwell in −55°C chamber without loading for 1000^{+48}_{-0} hrs. 2) Stabilize component at room temperature for 1hr. then measure value.	
	Visual	No evidence of mechanical damage			
High Temperature Storage	∆R/R	±(3%+0.1Ω)max of the intial value	50mΩmax	1) Dwell in 125°C chamber without loading for 1000^{+48}_{-0} hrs. 2) Stabilize component at room temperature for 1hr. then measure value.	
	Visual	No evidence of mechanical damage			
Moisture Resistance	∆R/R	±(3%+0.1Ω)max of the intial value	50mΩmax	1) Dwell in temp: 65°C RH90 to 95%RH chamber without loading for 1000^{+48}_{-0} hrs. 2) Stabilize component at room temperature for 1hr. then measure value.	
	Visual	No evidence of mechanical damage			
Life Test	∆R/R	±(3%+0.1Ω)max of the intial value	50mΩmax	1) Temp: 70±3°C Voltage: (rated voltage) on 90 min off 30min. Duration: 1000^{+48}_{-0} hrs. 2) Stabilize component at room temperature for 1hr. then measure value.	
	Visual	No evidence of mechanical damage			
Loading Life in Moisture	∆R/R	±(3%+0.1Ω)max of the intial value	50mΩmax	1) Temp: 40±2°C RH: 90-95% Voltage Cycle: on 90 min(rated voltage) off 30min. Duration: 1000^{+48}_{-0} hrs. 2) Stabilize component at room temperature for 1hr. then measure value.	
	Visual	No evidence of mechanical damage			

Circuit design

1) Once application and assembly environments have been checked, the resistors may be used in conformance with the catalog and the specifications.

2) Please consult the manufacturer in advance when the resistors is used in devices such as: devices which deal with human life, I.e. medical devices; devices which are highy public orientated; and devices which demand a high standerd of liability.

3) Please use the resistors in conformance with the operating temperature provided in both the catalog and the specifications.

4) Please keep voltage under the rated voltage which is applied to the resistor.

5) Do not use the resistor in an environment where it might easily exceed the respective provisions concerning shock and vibration specified in the catalog and specifications.

6) Please do not use the resistor in the following environments.
   ①State that water, oil, and solvent hang in resistor
   ②State where poisonous gas (sulfur and chlorine, etc.) exists
   ③State that direct sunshine, radiation, and ultraviolet, etc. are irradiated

7) There is a thing that resistance changes according to the stuff of the resin when the coating with the resin is given.
   Please use resin coating after confirming the characteristic.

8) There is a thing that resistance changes according to flux and cleaner.
   Please use flux and cleaner after confirming the characteristic.

9) Please consult about a lead free products.

Storage

1) Keep storage place temperature +5 to +35°C, humidity 45 to 75% RH.

2) Please keep parts out of poisonous gas such as sulfur or chlorine in the air, and out of salty moisture. Or they may cause rust of terminal, and poor solderability. and, please consider the above-mentioned item after mounting your company.
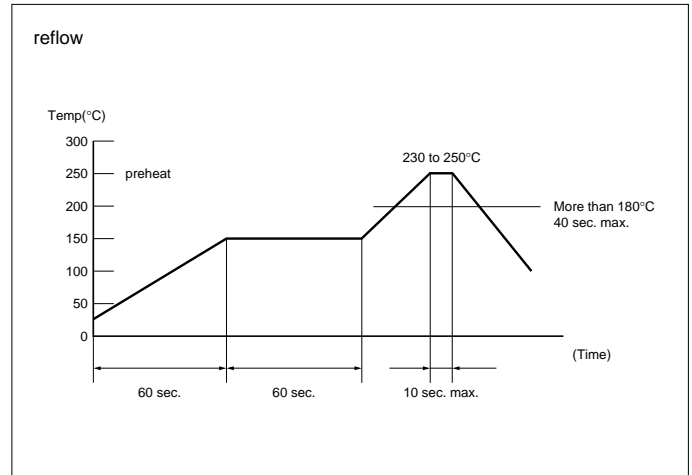
4) Soldering iron

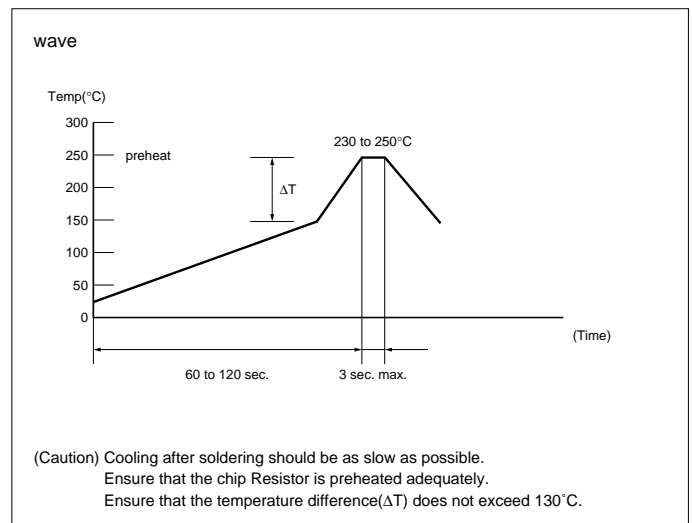| Temperature	soldering iron 300±5°C *
Time	3 sec. max. *

*Do not place the soldering iron on the chip. Soldering iron is 30W max.

Soldering method

1) Recommendable temperature profile

2) Recommendable temperature profile

(Caution) Cooling after soldering should be as slow as possible.
Ensure that the chip Resistor is preheated adequately.
Ensure that the temperature difference(ΔT) does not exceed 130˚C.

3) pb-free recommendable temperature profile