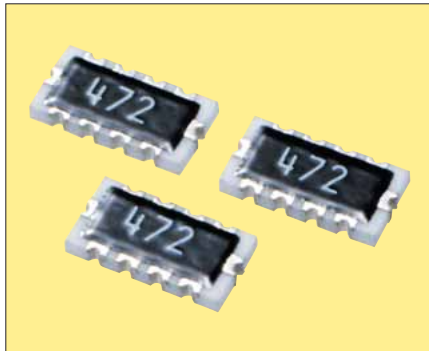




RoHS Comforming

### Features

- Reduction in mounting costs & Process
- Save PCB space
- Eight resistors in one SMD package
- Reduction of inventory control costs

### Applications

- Lap Top Computer
- Printer
- CD ROM
- Notebook Computer
- Hard Disk Drive
- Facsimile

### How to Order

RNA4A 8E 103 J T  
① ② ③ ④ ⑤

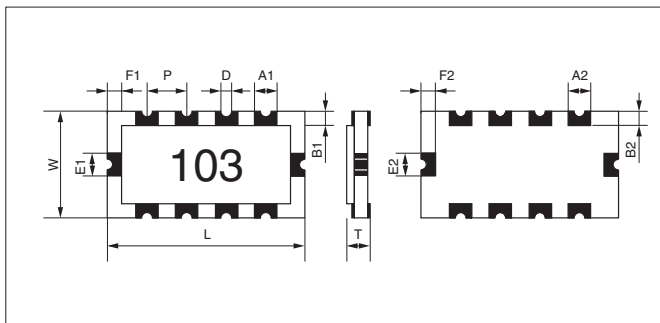
- ① Series
- ② Number of elements(8E : 8 elements)
- ③ Resistance code (3 digits)
- ④ Resistance tolerance(J :  $\pm 5\%$ )
- ⑤ Packaging

**T** Plastic Taping, 4,000pcs/reel

\* Taping Qty: 4000pcs/7 inch reel (4mm pitch)  
Carrier Tape: plastic

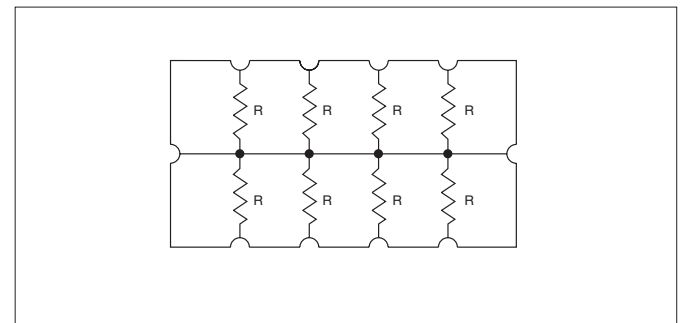
### Shape and Dimensions

(Unit : mm)



| Code       | L              | W              | T               | A1            | B1              |
|------------|----------------|----------------|-----------------|---------------|-----------------|
| Dimensions | 4.0 $\pm$ 0.15 | 2.1 $\pm$ 0.15 | 0.6 $\pm$ 0.1   | 0.5 $\pm$ 0.1 | 0.25 $\pm$ 0.15 |
| Code       | E1             | F1             | D               | P             | A2              |
| Dimensions | 0.5 $\pm$ 0.1  | 0.3 $\pm$ 0.15 | 0.3typ          | 0.8typ        | 0.4 $\pm$ 0.1   |
| Code       | B2             | E2             | F2              |               |                 |
| Dimensions | 0.4 $\pm$ 0.15 | 0.5 $\pm$ 0.1  | 0.35 $\pm$ 0.15 |               |                 |

### Circuit Diagram



\* nominal resistance value is all the same.

### Specifications

| Item                  | Rating                        |
|-----------------------|-------------------------------|
| Rated power(70°C)     | 1/16W(0.0625W)/Element        |
| Max working voltage*  | 25V                           |
| Max over-load voltage | 50V                           |
| Resistance value      | 100 $\Omega$ to 220K $\Omega$ |
| Tolerance             | J: $\pm 5\%$                  |
| Number of elements    | 8E:8 Elements                 |
| Working temperature   | -55 to +125°C                 |

\* Rated Voltage:  $\sqrt{\text{Rated power} \times \text{Resistance value}}$ , whichever is less.

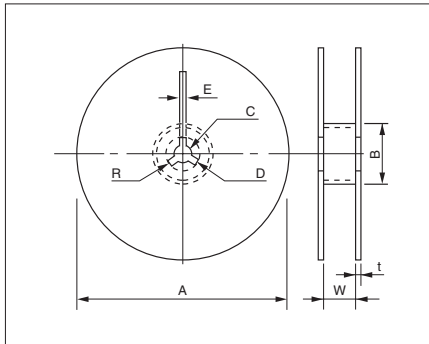
\* Standard Resistance Value: E-6 Series

\* If resistance value under 100 $\Omega$  is needed, please contact sales.

## Tape & Reel

### • Reel

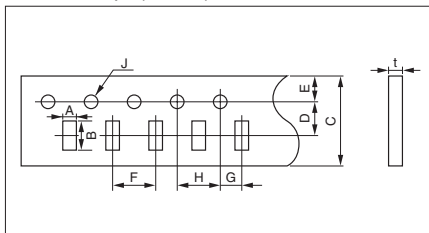
(Unit : mm)



| Code        | A                  | B                     | C                   | D                   | E             | W              | t       | R   |
|-------------|--------------------|-----------------------|---------------------|---------------------|---------------|----------------|---------|-----|
| Width: 8mm  | $\phi 178 \pm 2.0$ | $\phi 50 \text{min.}$ | $\phi 13.0 \pm 0.5$ | $\phi 21.0 \pm 0.8$ | $2.0 \pm 0.5$ | $10.0 \pm 1.5$ | 2.5MAX. | 1.0 |
| Width: 12mm |                    |                       |                     |                     |               | $13.0 \pm 1.5$ |         |     |

### • Carrier Tape( 8mm)

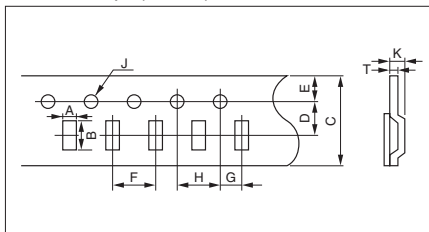
(Unit : mm)



| Dimension<br>TYPE | A        | B        | C       | D        | E        | F       | G        | H       | J                                  | t       |
|-------------------|----------|----------|---------|----------|----------|---------|----------|---------|------------------------------------|---------|
| 0404              | 1.2±0.1  | 1.2±0.1  | 8.0±0.2 | 3.5±0.05 | 1.75±0.1 | 2.0±0.1 | 2.0±0.05 | 4.0±0.1 | ϕ1.5 <sup>+0.1</sup> <sub>-0</sub> | 0.6max. |
| 0804              | 1.25±0.2 | 2.25±0.2 |         |          |          | 4.0±0.1 |          |         |                                    | 1.1max. |
| 0805              | 1.65±0.2 | 2.4±0.2  |         |          |          |         |          |         |                                    |         |
| 1206              | 2.0±0.2  | 3.6±0.2  |         |          |          |         |          |         |                                    |         |
| 1506              | 1.9±0.2  | 4.1±0.2  |         |          |          |         |          |         |                                    |         |

### • Carrier Tape(12mm)

(Unit : mm)



| Dimension Code<br>TYPE | A             | B             | C              | D              | E              | F             | G             | H             | J                      | T       | K       |
|------------------------|---------------|---------------|----------------|----------------|----------------|---------------|---------------|---------------|------------------------|---------|---------|
| 1020                   | $2.9 \pm 0.2$ | $5.3 \pm 0.2$ | $12.0 \pm 0.3$ | $5.5 \pm 0.05$ | $1.75 \pm 0.1$ | $4.0 \pm 0.1$ | $2.0 \pm 0.1$ | $4.0 \pm 0.1$ | $\phi 1.5^{+0.1}_{-0}$ | 0.6max. | 1.4max. |
| 1608                   | $2.5 \pm 0.2$ | $4.4 \pm 0.2$ |                |                |                |               |               |               |                        |         |         |
| 2512                   | $3.5 \pm 0.2$ | $6.7 \pm 0.2$ |                |                |                |               |               |               |                        |         |         |
| 2506                   | $2.0 \pm 0.2$ | $6.9 \pm 0.2$ |                |                |                |               |               |               |                        |         |         |

### • Taping Quantity per reel

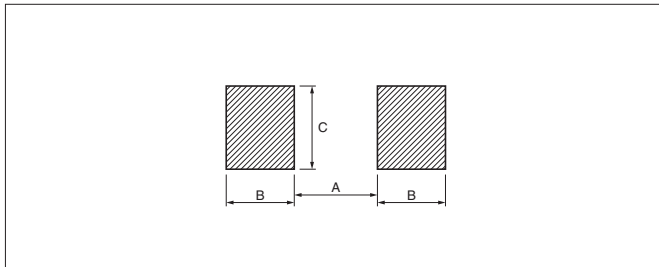
(Unit : pcs)

| TYPE | Series           | Paper( $\phi 178$ reel) |
|------|------------------|-------------------------|
| 0404 | CRC11A2E, ATC1A  | 10000(2mm pitch)        |
| 0804 | CRB2A4E, CRC2A4E | 10000(2mm pitch)        |
| 0805 | LR21             | 5000(4mm pitch)         |
| 1206 | LR32             | 5000(4mm pitch)         |
| 1506 | CRC4A8E          | 5000(4mm pitch)         |
| 1020 | LR50             | 4000(4mm pitch)         |
| 1608 | RNA4A            | 4000(4mm pitch)         |
| 2512 | LR63             | 4000(4mm pitch)         |
| 2506 | CRB6A8E          | 4000(4mm pitch)         |

## Recommended Land Patterns

### Chip Type

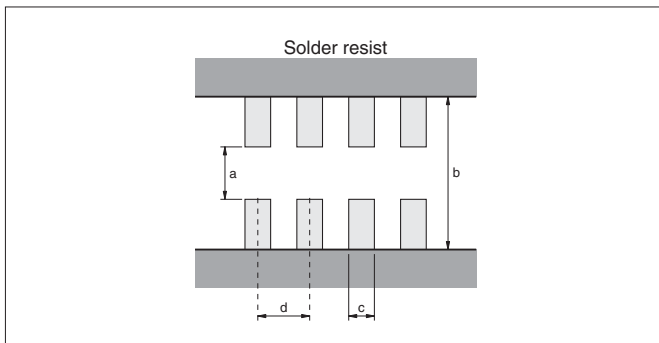
(Unit : mm)



| EIA Size | A   | B   | C   |
|----------|-----|-----|-----|
| 0805     | 1.0 | 0.8 | 1.2 |
| 1206     | 2.2 | 0.9 | 1.5 |
| 1020     | 1.4 | 1.0 | 5.0 |
| 2512     | 5.0 | 1.0 | 3.0 |

### Array Type

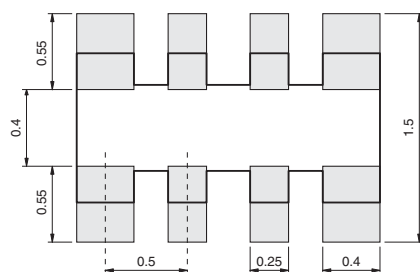
(Unit : mm)



| Series   | a   | b   | c    | d    |
|----------|-----|-----|------|------|
| CRB2A4E  | 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 |

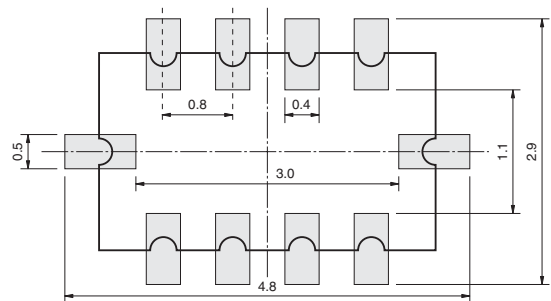
(Unit : mm)

#### CRC2A4E Series



(Unit : mm)

#### RNA4A8E Series



## 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 highly public orientated; and devices which demand a high standard 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.
  - ① State that water, oil, and solvent hang in resistor
  - ② State where poisonous gas (sulfur and chlorine, etc.) exists
  - ③ State 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.

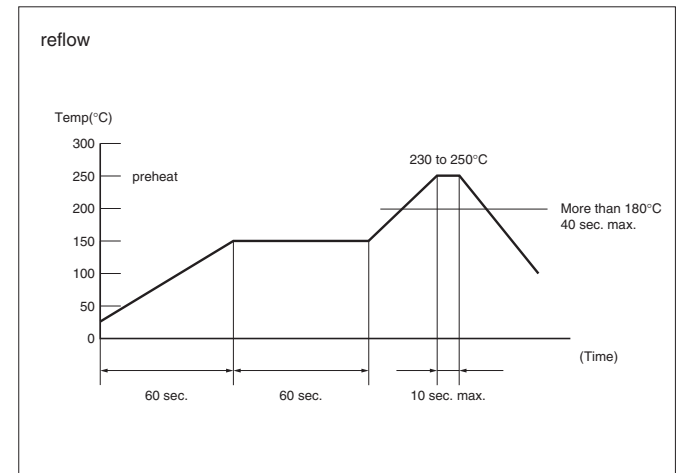
### 3) Soldering iron

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

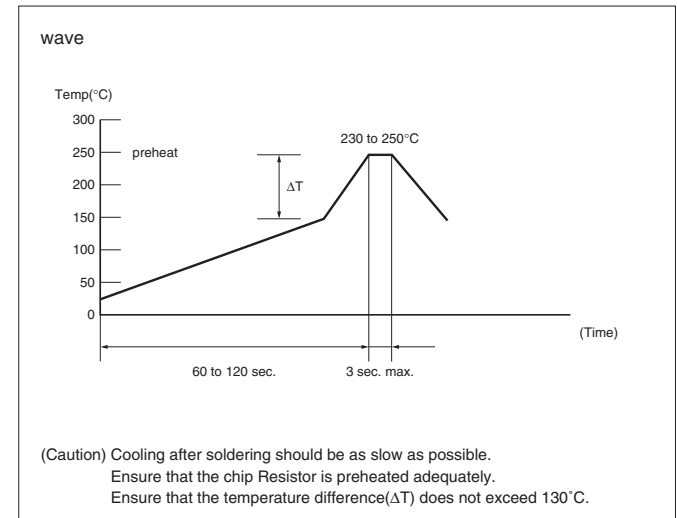
\*Do not place the soldering iron on the chip. Soldering iron is 30W max.

## Soldering method

### 1) Recommendable temperature profile



### 2) Recommendable temperature profile



### 3) pb-free recommendable temperature profile

