

# Thick Film General Chip Resistors

- 0402(01005), 0603(0201), 1005(0402), 1608(0603), 2012(0805), 3216(1206), 3225(1210), 5025(2010), 6432(2512)

## ■ Features

- Small, thin and lightweight
- High reliability
- Applicable Both flow and reflow soldering.
- Suitable size and package for surface mount assembly
- RoHS Compliant.



## ■ Part Number System

| RC            |                               |
|---------------|-------------------------------|
| Type (Series) |                               |
| RC            | General purpose chip resistor |

| 0603             |                   |
|------------------|-------------------|
| Size : mm (inch) |                   |
| 0402             | 0.4×0.2mm (01005) |
| 0603             | 0.6×0.3mm (0201)  |
| 1005             | 1.0×0.5mm (0402)  |
| 1608             | 1.6×0.8mm (0603)  |
| 2012             | 2.0×1.2mm (0805)  |
| 3216             | 3.2×1.6mm (1206)  |
| 3225             | 3.2×2.5mm (1210)  |
| 5025             | 5.0×2.5mm (2010)  |
| 6432             | 6.4×3.2mm (2512)  |

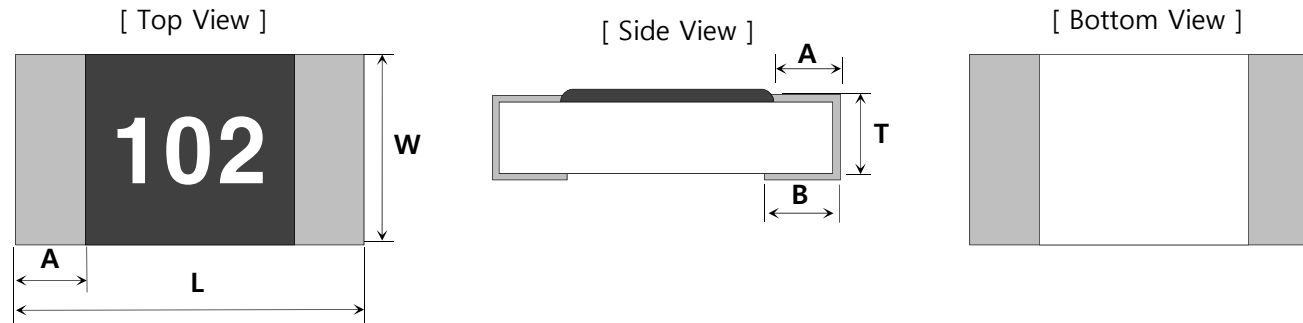
| F         |       |
|-----------|-------|
| Tolerance |       |
| D         | ±0.5% |
| F         | ±1.0% |
| G         | ±2.0% |
| J         | ±5.0% |

\* Jumper : 'J'

| 2552                                                                                                              |  |
|-------------------------------------------------------------------------------------------------------------------|--|
| Resistance Value                                                                                                  |  |
| - 3-digit code System (E-24 series)<br>- 4-digit code System (E-96 series)<br>- Jumper : '000'<br>- 2552 : 25.5KΩ |  |

| CS           |          |
|--------------|----------|
| Packing Type |          |
| CS           | 7" reel  |
| ES           | 10" reel |
| AS           | 13" reel |

## ■ Structure and Dimensions



[ Unit : mm ]

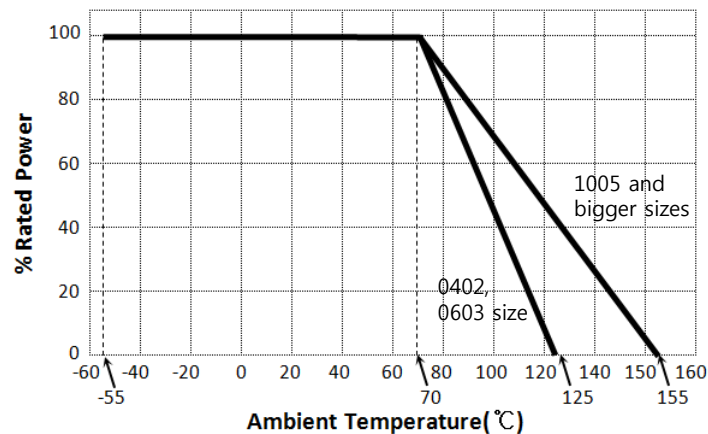
| Size(mil)     | L         | W         | T         | A         | B         | Unit Weight |
|---------------|-----------|-----------|-----------|-----------|-----------|-------------|
| RC0402(01005) | 0.40±0.02 | 0.20±0.02 | 0.13±0.02 | 0.10±0.03 | 0.10±0.03 | 0.04mg      |
| RC0603(0201)  | 0.60±0.03 | 0.30±0.03 | 0.23±0.03 | 0.10±0.05 | 0.15±0.05 | 0.15mg      |
| RC1005(0402)  | 1.00±0.05 | 0.50±0.05 | 0.35±0.05 | 0.20±0.10 | 0.25±0.10 | 0.6mg       |
| RC1608(0603)  | 1.60±0.10 | 0.80±0.10 | 0.45±0.10 | 0.30±0.20 | 0.35±0.10 | 2.1mg       |
| RC2012(0805)  | 2.00±0.20 | 1.25±0.15 | 0.55±0.10 | 0.40±0.20 | 0.35±0.20 | 4.9mg       |
| RC3216(1206)  | 3.20±0.20 | 1.60±0.15 | 0.55±0.10 | 0.45±0.20 | 0.40±0.20 | 9.5mg       |
| RC3225(1210)  | 3.20±0.20 | 2.55±0.20 | 0.55±0.10 | 0.45±0.20 | 0.40±0.20 | 16mg        |
| RC5025(2010)  | 5.00±0.20 | 2.50±0.20 | 0.55±0.10 | 0.60±0.20 | 0.60±0.20 | 26mg        |
| RC6432(2512)  | 6.30±0.20 | 3.20±0.20 | 0.55±0.10 | 0.60±0.20 | 0.60±0.20 | 41mg        |

## Applications and Ratings

| Type   | Size (mil) | Rated Power [W] | Rated Voltage [V]                                              | Max Working Voltage [V] | Tolerance [%]             | Resistance Range [Ω] | T.C.R [ppm/°C]                  | Working Temp. [°C] | Moisture Level |
|--------|------------|-----------------|----------------------------------------------------------------|-------------------------|---------------------------|----------------------|---------------------------------|--------------------|----------------|
| RC0402 | 01005      | 1/32            | $\sqrt{P \times R}$<br>P : Rated Power(W)<br>R : Resistance(Ω) | 15                      | ±1(F)<br>±5(J)            | 1 ~ 1M               | 1~9.9Ω : ± 300<br>10~1MΩ ± 250  | -55~125            | Level 1        |
| RC0603 | 0201       | 1/20            |                                                                | 25                      |                           | 1 ~ 10M              | 1~9.9Ω : ±300<br>10~10MΩ : ±250 |                    |                |
| RC1005 | 0402       | 1/16            |                                                                | 50                      | ±0.5(D)<br>±1(F)<br>±5(J) | 1 ~ 10M              | 1~9.9Ω : ±300<br>10~10MΩ : ±100 | -55 ~ 155          |                |
| RC1608 | 0603       | 1/10            |                                                                | 50                      |                           |                      |                                 |                    |                |
| RC2012 | 0805       | 1/8             |                                                                | 150                     |                           |                      |                                 |                    |                |
| RC3216 | 1206       | 1/4             |                                                                | 200                     |                           |                      |                                 |                    |                |
| RC3225 | 1210       | 1/3             |                                                                | 200                     |                           |                      |                                 |                    |                |
| RC5025 | 2010       | 2/3             |                                                                | 200                     |                           |                      |                                 |                    |                |
| RC6432 | 2512       | 1               |                                                                | 200                     |                           |                      |                                 |                    |                |

• Please contact our sales representatives or engineers for other specifications

## Power Derating Curve



## Jumper Ratings

| Type                  | Rated Current [A] | Max Overload Current [A] | Resistance [ $\Omega$ ] | Working Temp.[ $^{\circ}$ C] |
|-----------------------|-------------------|--------------------------|-------------------------|------------------------------|
| 0402, 0603            | 0.5               | 1                        | 0.05max                 | -55 ~ 125                    |
| 1005, 1608            | 1                 | 2                        |                         | -55 ~ 155                    |
| 2012 and bigger sizes | 2                 | 4                        |                         |                              |

## Rated Voltage

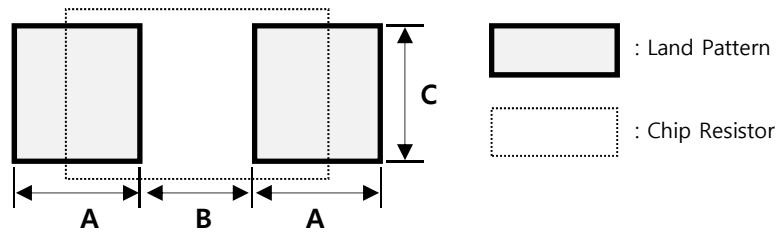
$$V = \sqrt{P \times R}$$

E : Rated Voltage (V)

P : Rated Power (W)

R : Resistance Value ( $\Omega$ )

## ■ Standard Soldering Pad Dimensions



[ Unit : mm ]

| Size(mil)     | Reflow Soldering |      |        |      |
|---------------|------------------|------|--------|------|
|               | A                | B    | 2A + B | C    |
| RC0402(01005) | 017              | 0.20 | 0.54   | 0.18 |
| RC0603(0201)  | 0.37             | 0.28 | 1.02   | 0.29 |
| RC1005(0402)  | 0.60             | 0.50 | 1.70   | 0.50 |
| RC1608(0603)  | 0.80             | 0.80 | 2.40   | 0.80 |
| RC2012(0805)  | 0.90             | 1.40 | 3.20   | 1.20 |
| RC3216(1206)  | 1.30             | 1.80 | 4.40   | 1.50 |
| RC3225(1210)  | 1.30             | 1.80 | 4.40   | 2.40 |
| RC5025(2010)  | 1.40             | 3.30 | 6.10   | 2.40 |
| RC6432(2512)  | 1.40             | 4.60 | 7.40   | 3.00 |

## ■ Performance Characteristics

| ITEM                       | Requirements Specification       | Test Conditions (JIS C 5201-1)                                                                        |
|----------------------------|----------------------------------|-------------------------------------------------------------------------------------------------------|
| Resistance                 | Within the specified tolerance   | JIS C 5201-1 4.5                                                                                      |
| Temperature Characteristic | Within the specified T.C.R       | JIS C 5201-1 4.8<br>+20°C → -55°C / +20°C → +125°C                                                    |
| Short time Overload        | $\Delta R < \pm 1\% + 0.1\Omega$ | JIS C 5201-1 4.13<br>Rated Voltage $\times 2.5$ , 5sec                                                |
| Solderability              | Immersed over 95%                | JIS C 5201-1 4.17<br>Rosin Ethanol (25%WT)<br>245 $\pm$ 5/-0°C, 2 $\pm$ 0.5 sec                       |
| Resistance to Solder Heat  | $\Delta R < \pm 1\% + 0.1\Omega$ | JIS C 5201-1 4.18<br>260 $\pm$ 5°C, 10 $\pm$ 1 sec                                                    |
| Temperature Cycle          | $\Delta R < \pm 1\% + 0.1\Omega$ | JIS C 5201-1 4.19<br>-55°C ↔ +125°C, 100 cycle                                                        |
| Moisture Resistance        | $\Delta R < \pm 3\% + 0.1\Omega$ | JIS C 5201-1 4.24<br>40 $\pm$ 2°C, 90~95%RH, 1,000 <sup>+48</sup> hours<br>90mins ON, 30mins OFF      |
| Load Life                  | $\Delta R < \pm 3\% + 0.1\Omega$ | JIS C 5201-1 4.25<br>Rated Voltage, 70 $\pm$ 2°C, 1,000 <sup>+48</sup> hours<br>90mins ON, 30mins OFF |
| High Temp. Exposure        | $\Delta R < \pm 3\% + 0.1\Omega$ | JIS C 5201-1 4.25.3<br>155 $\pm$ 2°C, 1,000 <sup>+48</sup> hours                                      |

※ The reliability test condition can be replaced by the corresponding accelerated test condition.



Product specifications included in the specifications are effective as of March 01, 2015.

Please be advised that they are standard product specifications for reference only.

We may change, modify or discontinue the product specifications without notice at any time.

So, you need to approve the product specifications before placing an order.

Should you have any question regarding the product specifications,

please contact our sales personnel or application engineers.

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