

# RC1206JR-072R7L Datasheet

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|                              |  |
|------------------------------|--|
| DiGi Electronics Part Number | RC1206JR-072R7L-DG   |
| Manufacturer                 | <a href="#">YAGEO</a>  |
| Manufacturer Product Number  | RC1206JR-072R7L  |
| Description                  | RES 2.7 OHM 5% 1/4W 1206   |
| Detailed Description         | 2.7 Ohms $\pm$ 5% 0.25W, 1/4W Chip Resistor 1206 (3216 Metric) Moisture Resistant Thick Film |

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## Purchase and inquiry

Manufacturer Product Number:

RC1206JR-072R7L

Series:

RC\_L

Resistance:

2.7 Ohms

Power (Watts):

0.25W, 1/4W

Features:

Moisture Resistant

Operating Temperature:

-55°C ~ 155°C

Supplier Device Package:

1206

Height - Seated (Max):

0.026" (0.65mm)

Failure Rate:

-

Manufacturer:

YAGEO

Product Status:

Active

Tolerance:

±5%

Composition:

Thick Film

Temperature Coefficient:

±200ppm/°C

Package / Case:

1206 (3216 Metric)

Size / Dimension:

0.122" L x 0.063" W (3.10mm x 1.60mm)

Number of Terminations:

2

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8533.21.0030

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

# DATA SHEET

## GENERAL PURPOSE CHIP RESISTORS

RC\_L series

$\pm 0.1\%$ ,  $\pm 0.5\%$ ,  $\pm 1\%$ ,  $\pm 5\%$

Sizes 0075/0100/0201/0402/0603/0805/  
1206/1210/1218/2010/2512

RoHS compliant & Halogen free



## SCOPE

This specification describes RC series chip resistors with lead free terminations made by thick film process.

## APPLICATIONS

- All general purpose application

## FEATURES

- Halogen Free Epoxy
- RoHS compliant
  - Products with lead free terminations meet RoHS requirements
  - Pb-glass contained in electrodes, resistors element and glass are exempted by RoHS
- Reducing environmentally hazardous wastes
- High component and equipment reliability
- Saving of PCB space
- None forbidden-materials used in products/production
- MSL class: MSL I

## ORDERING INFORMATION - GLOBAL PART NUMBER

Global part numbers are identified by the series, size, tolerance, packing type, temperature coefficient, taping reel and resistance value.

### GLOBAL PART NUMBER

**RC XXXX X X X XX XXXX L**  
 (1) (2) (3) (4) (5) (6) (7)

#### (1) SIZE

0075/0100/0201/0402/0603/0805/1206/1210/1218/2010/2512

#### (2) TOLERANCE

B =  $\pm 0.1\%$   
 D =  $\pm 0.5\%$   
 F =  $\pm 1.0\%$   
 J =  $\pm 5.0\%$  (for jumper ordering, use code of J)

#### (3) PACKAGING TYPE

R = Paper taping reel  
 K = Embossed taping reel  
 S = ESD safe reel (0075/0100 only)

#### (4) TEMPERATURE COEFFICIENT OF RESISTANCE

— = Based on spec.

#### (5) TAPING REEL & POWER

07 = 7 inch dia. Reel & Standard power  
 10 = 10 inch dia. Reel  
 13 = 13 inch dia. Reel  
 7W = 7 inch dia. Reel & 2 x standard power  
 7N = 7 inch dia. Reel, ESD safe reel (0075/0100 only)  
 3W = 13 inch dia. Reel & 2 x standard power

#### (6) RESISTANCE VALUE

There are 2~4 digits indicated the resistance value.  
 Letter R/K/M is decimal point  
 Example:  
 97R6 =  $97.6\Omega$   
 9K76 =  $9760\Omega$   
 1M =  $1,000,000\Omega$

#### (7) DEFAULT CODE

Letter L is the system default code for ordering only.<sup>(Note)</sup>

## ORDERING EXAMPLE

The ordering code for a RC0402 0.0625W chip resistor value  $100K\Omega$  with  $\pm 5\%$  tolerance, supplied in 7-inch tape reel of 10,000 units per reel is: RC0402JR-07100KL.

### NOTE

- All our RSMD products meet RoHS compliant and Halogen Free. "LFP" of the internal 2D reel label mentions "Lead Free Process".
- On customized label, "LFP" or specific symbol can be printed.

**MARKING****RC0075 / RC0100 / RC0201 / RC0402**

No Marking

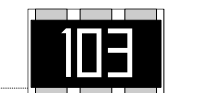
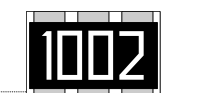
Fig. 1

**RC0603**

1%, 0.5%, E24 exception values 10/11/13/15/20/75 of E24 series

Fig. 2  $240 = 24 \times 10^0 = 24$ 

1%, 0.5%, E96 refer to EIA-96 marking method, including values 10/11/13/15/20/75 of E24 series

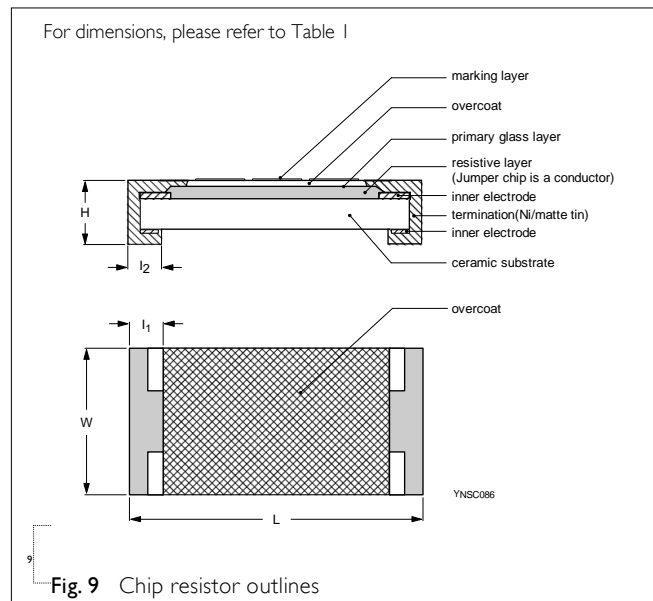
Fig. 3  $88A = 806 \times 10^0 = 806 \Omega$ 5%, E24 series : 3 digits  
First two digits for significant figure and 3rd digit for number of zerosFig. 4 Value = 10 K $\Omega$ **RC0805 / RC1206 / RC1210 / RC2010 / RC2512**1%, 0.5%, E24/E96 series : 4 digits  
First three digits for significant figure and 4th digit for number of zerosFig. 5 Value = 10 K $\Omega$ 5%, E24 series : 3 digits  
First two digits for significant figure and 3rd digit for number of zerosFig. 6 Value = 10 K $\Omega$ **RC1218**E-24 series: 3 digits,  $\pm 5\%$   
First two digits for significant figure and 3rd digit for number of zerosFig. 7 Value = 10 K $\Omega$ Both E-24 and E-96 series: 4 digits,  $\pm 1\%$  &  $\pm 0.5\%$   
First three digits for significant figure and 4th digit for number of zerosFig. 8 Value = 10 K $\Omega$ 

For further marking information, please see special data sheet "Chip resistors marking".

## CONSTRUCTION

The resistor is constructed on top of a high-grade ceramic body. Internal metal electrodes are added on each end to make the contacts to the thick film resistive element. The composition of the resistive element is a noble metal imbedded into a glass and covered by a second glass to prevent environmental influences. The resistor is laser trimmed to the rated resistance value. The resistor is covered with a protective epoxy coat, finally the two external terminations (matte tin on Ni-barrier) are added, as shown in Fig.9.

## Outlines



## DIMENSION

Table 1

| TYPE   | L (mm)    | W (mm)    | H (mm)    | L <sub>1</sub> (mm) | L <sub>2</sub> (mm) |
|--------|-----------|-----------|-----------|---------------------|---------------------|
| RC0075 | 0.30±0.01 | 0.15±0.01 | 0.13±0.01 | 0.08±0.03           | 0.08±0.03           |
| RC0100 | 0.40±0.02 | 0.20±0.02 | 0.13±0.02 | 0.10±0.03           | 0.10±0.03           |
| RC0201 | 0.60±0.03 | 0.30±0.03 | 0.23±0.03 | 0.10±0.05           | 0.15±0.05           |
| RC0402 | 1.00±0.05 | 0.50±0.05 | 0.35±0.05 | 0.20±0.10           | 0.25±0.10           |
| RC0603 | 1.60±0.10 | 0.80±0.10 | 0.45±0.10 | 0.25±0.15           | 0.25±0.15           |
| RC0805 | 2.00±0.10 | 1.25±0.10 | 0.50±0.10 | 0.35±0.20           | 0.35±0.20           |
| RC1206 | 3.10±0.10 | 1.60±0.10 | 0.55±0.10 | 0.45±0.20           | 0.45±0.20           |
| RC1210 | 3.10±0.10 | 2.60±0.15 | 0.55±0.10 | 0.45±0.15           | 0.50±0.20           |
| RC1218 | 3.10±0.10 | 4.60±0.10 | 0.55±0.10 | 0.45±0.20           | 0.40±0.20           |
| RC2010 | 5.00±0.10 | 2.50±0.15 | 0.55±0.10 | 0.60±0.20           | 0.55±0.20           |
| RC2512 | 6.35±0.10 | 3.10±0.15 | 0.55±0.10 | 0.60±0.20           | 0.60±0.20           |

## ELECTRICAL CHARACTERISTICS

Table 2

| CHARACTERISTICS | POWER            | OPERATING TEMPERATURE RANGE | MAXIMUM WORKING VOLTAGE | MAXIMUM OVERLOAD VOLTAGE | DIELECTRIC WITHSTANDING VOLTAGE | RESISTANCE RANGE | TEMPERATURE COEFFICIENT | JUMPER CRITERIA         |
|-----------------|------------------|-----------------------------|-------------------------|--------------------------|---------------------------------|------------------|-------------------------|-------------------------|
| RC0075          | 1/50 W           | -55°C to 125°C              | 10V                     | 25V                      | 25V                             | 5% (E24)         | 10Ω ≤ R < 100Ω          | Rated Current<br>0.5A   |
|                 |                  |                             |                         |                          |                                 | 10Ω ≤ R ≤ 1MΩ    | -200~+600ppm/°C         |                         |
|                 |                  |                             |                         |                          |                                 | 1% (E24/E96)     | 100Ω ≤ R ≤ 1MΩ          | Maximum Current<br>1.0A |
|                 |                  |                             |                         |                          |                                 | 10Ω ≤ R ≤ 1MΩ    | ±200ppm/°C              |                         |
| RC0100          | 1/32 W           | -55°C to 125°C              | 15V                     | 30V                      | 30V                             | 5% (E24)         | 1Ω ≤ R < 10Ω            | Rated Current<br>0.5A   |
|                 |                  |                             |                         |                          |                                 | 1Ω ≤ R ≤ 22MΩ    | -200~+600ppm/°C         |                         |
|                 |                  |                             |                         |                          |                                 | 1% (E24/E96)     | 10Ω ≤ R < 100Ω:         | Maximum Current<br>1.0A |
|                 |                  |                             |                         |                          |                                 | 1Ω ≤ R ≤ 10MΩ    | ±300ppm/°C              |                         |
|                 |                  |                             |                         |                          |                                 | 0.5% (E24/E96)   | 100Ω ≤ R ≤ 10MΩ:        |                         |
|                 |                  |                             |                         |                          |                                 | 33Ω ≤ R ≤ 470KΩ  | ±200ppm/°C              |                         |
| Jumper < 50mΩ   | 10MΩ < R ≤ 22MΩ: | ±250ppm/°C                  |                         |                          |                                 |                  |                         |                         |

Table 2

| CHARACTERISTICS | POWER  | OPERATING TEMPERATURE RANGE | MAXIMUM WORKING VOLTAGE | MAXIMUM OVERLOAD VOLTAGE | DIELECTRIC WITHSTANDING VOLTAGE | RESISTANCE RANGE                                     | TEMPERATURE COEFFICIENT   | JUMPER CRITERIA         |
|-----------------|--------|-----------------------------|-------------------------|--------------------------|---------------------------------|--|---|-------------------------|
| RC0201          | 1/20 W | -55°C to 125°C              | 25V                     | 50V                      | 50V                             | 5% (E24)<br>$1\Omega \leq R \leq 10M\Omega$          | $1\Omega \leq R \leq 10\Omega$<br>-100~+350ppm/°C                     | Rated Current<br>0.5A   |
|                 |        |                             |                         |                          |                                 | 1% (E24/E96)<br>$1\Omega \leq R \leq 10M\Omega$      | $10\Omega < R \leq 10M\Omega$<br>$\pm 200\text{ppm}/^\circ\text{C}$   | Maximum Current<br>1.0A |
| RC0402          | 1/16 W | -55°C to 155°C              | 50V                     | 100V                     | 100V                            | 5% (E24)<br>$1\Omega \leq R \leq 22M\Omega$          | $1\Omega \leq R \leq 10\Omega$<br>$\pm 200\text{ppm}/^\circ\text{C}$  | Rated Current<br>1.0A   |
|                 |        |                             |                         |                          |                                 | 1% (E24/E96)<br>$1\Omega \leq R \leq 10M\Omega$      | $10\Omega < R \leq 10M\Omega$<br>$\pm 100\text{ppm}/^\circ\text{C}$   | Maximum Current<br>2.0A |
| RC0603          | 1/10 W | -55°C to 155°C              | 75V                     | 150V                     | 150V                            | 5% (E24)<br>$1\Omega \leq R \leq 1M\Omega$           | $1\Omega \leq R \leq 1M\Omega$<br>$\pm 200\text{ppm}/^\circ\text{C}$  | Rated Current<br>1.0A   |
|                 |        |                             |                         |                          |                                 | 1% (E24/E96)<br>$1\Omega \leq R \leq 1M\Omega$       | $10\Omega < R \leq 10M\Omega$<br>$\pm 100\text{ppm}/^\circ\text{C}$   | Maximum Current<br>2.0A |
| RC0805          | 1/8 W  | -55°C to 155°C              | 150V                    | 300V                     | 300V                            | 5% (E24)<br>$1\Omega \leq R \leq 100M\Omega$         | $1\Omega \leq R \leq 10\Omega$<br>$\pm 200\text{ppm}/^\circ\text{C}$  | Rated Current<br>2.0A   |
|                 |        |                             |                         |                          |                                 | 1% (E24/E96)<br>$1\Omega \leq R \leq 10M\Omega$      | $10\Omega < R \leq 10M\Omega$<br>$\pm 100\text{ppm}/^\circ\text{C}$   | Maximum Current<br>5.0A |
| RC0805          | 1/8 W  | -55°C to 155°C              | 150V                    | 300V                     | 300V                            | 0.5% (E24/E96)<br>$1\Omega \leq R \leq 1M\Omega$     | $10M\Omega < R \leq 22M\Omega$<br>$\pm 200\text{ppm}/^\circ\text{C}$  |                         |
|                 |        |                             |                         |                          |                                 | 0.1% (E24/E96)<br>$10\Omega \leq R \leq 1M\Omega$    | $24M\Omega < R \leq 100M\Omega$<br>$\pm 300\text{ppm}/^\circ\text{C}$ |                         |
| RC0805          | 1/4 W  | -55°C to 155°C              | 150V                    | 300V                     | 300V                            | 10%, 20% (E24)<br>$24M\Omega \leq R \leq 100M\Omega$ | $1\Omega \leq R \leq 1M\Omega$<br>$\pm 300\text{ppm}/^\circ\text{C}$  |                         |
|                 |        |                             |                         |                          |                                 | Jumper<50mΩ  | $1\Omega \leq R \leq 1M\Omega$<br>$\pm 200\text{ppm}/^\circ\text{C}$  |                         |

## FOOTPRINT AND SOLDERING PROFILES

For recommended footprint and soldering profiles, please refer to data sheet "Chip resistors mounting"

Table 3

| CHARACTERISTICS | POWER | OPERATING TEMPERATURE RANGE | MAXIMUM WORKING VOLTAGE | MAXIMUM OVERLOAD VOLTAGE | DIELECTRIC WITHSTANDING VOLTAGE | RESISTANCE RANGE  | TEMPERATURE COEFFICIENT   | JUMPER CRITERIA          |
|-----------------|-------|-----------------------------|-------------------------|--------------------------|---------------------------------|---|---|--------------------------|
| RC1206          | 1/4 W | -55°C to 155°C              | 200V                    | 400V                     | 500V                            | 5% (E24)<br>$1\Omega \leq R \leq 100M\Omega$            | $1\Omega \leq R \leq 10\Omega$<br>$\pm 200\text{ppm}^\circ\text{C}$     | Rated Current<br>2.0A    |
|                 |       |                             |                         |                          |                                 | 1% (E24/E96)<br>$1\Omega \leq R \leq 10M\Omega$         | $10\Omega < R \leq 10M\Omega$<br>$\pm 100\text{ppm}^\circ\text{C}$      | Maximum Current<br>10.0A |
| RC1206          | 1/4 W | -55°C to 155°C              | 200V                    | 400V                     | 500V                            | 0.5% (E24/E96)<br>$1\Omega \leq R \leq 1M\Omega$        | $10M\Omega < R \leq 22M\Omega$<br>$\pm 200\text{ppm}^\circ\text{C}$     | 10.0A                    |
|                 |       |                             |                         |                          |                                 | 0.1% (E24/E96)<br>$10\Omega \leq R \leq 1M\Omega$       | $24M\Omega \leq R \leq 100M\Omega$<br>$\pm 100\text{ppm}^\circ\text{C}$ |                          |
| RC1206          | 1/2 W | -55°C to 155°C              | 200V                    | 400V                     | 500V                            | 10%, 20% (E24)<br>$24M\Omega \leq R \leq 100M\Omega$    | $100M\Omega$<br>$\pm 300\text{ppm}^\circ\text{C}$                       | 10.0A                    |
|                 |       |                             |                         |                          |                                 | Jumper < 50mΩ   |   |                          |
| RC1210          | 1/2 W | -55°C to 155°C              | 200V                    | 500V                     | 500V                            | 5% (E24)<br>$1\Omega \leq R \leq 22M\Omega$             | $1\Omega \leq R \leq 10\Omega$<br>$\pm 200\text{ppm}^\circ\text{C}$     | Rated Current<br>2.0A    |
|                 |       |                             |                         |                          |                                 | 1% (E24/E96)<br>$1\Omega \leq R \leq 10M\Omega$         | $10\Omega < R \leq 10M\Omega$<br>$\pm 100\text{ppm}^\circ\text{C}$      | Maximum Current<br>10.0A |
| RC1210          | 1/2 W | -55°C to 155°C              | 200V                    | 500V                     | 500V                            | 0.1%, 0.5% (E24/E96)<br>$10\Omega \leq R \leq 1M\Omega$ | $10M\Omega < R \leq 22M\Omega$<br>$\pm 200\text{ppm}^\circ\text{C}$     | 10.0A                    |
|                 |       |                             |                         |                          |                                 | Jumper < 50mΩ   |   |                          |
| RC1218          | 1 W   | -55°C to 155°C              | 200V                    | 500V                     | 500V                            | 5% (E24)<br>$1\Omega \leq R \leq 1M\Omega$              | $1\Omega \leq R \leq 10\Omega$<br>$\pm 200\text{ppm}^\circ\text{C}$     | Rated Current<br>6.0A    |
|                 |       |                             |                         |                          |                                 | 1% (E24/E96)<br>$1\Omega \leq R \leq 1M\Omega$          | $10\Omega < R \leq 1M\Omega$<br>$\pm 100\text{ppm}^\circ\text{C}$       | Maximum Current<br>10.0A |
| RC1218          | 1 W   | -55°C to 155°C              | 200V                    | 500V                     | 500V                            | 0.1%, 0.5% (E24/E96)<br>$10\Omega \leq R \leq 1M\Omega$ | $10\Omega \leq R \leq 1M\Omega$<br>$\pm 100\text{ppm}^\circ\text{C}$    | 10.0A                    |
|                 |       |                             |                         |                          |                                 | Jumper < 50mΩ   |   |                          |
| RC2010          | 3/4 W | -55°C to 155°C              | 200V                    | 500V                     | 500V                            | 5% (E24)<br>$1\Omega \leq R \leq 22M\Omega$             | $1\Omega \leq R \leq 10\Omega$<br>$\pm 200\text{ppm}^\circ\text{C}$     | Rated Current<br>2.0A    |
|                 |       |                             |                         |                          |                                 | 1% (E24/E96)<br>$1\Omega \leq R \leq 10M\Omega$         | $10\Omega < R \leq 10M\Omega$<br>$\pm 100\text{ppm}^\circ\text{C}$      | Maximum Current<br>10.0A |
| RC2010          | 3/4 W | -55°C to 155°C              | 200V                    | 500V                     | 500V                            | 0.1%, 0.5% (E24/E96)<br>$10\Omega \leq R \leq 1M\Omega$ | $10M\Omega < R \leq 22M\Omega$<br>$\pm 200\text{ppm}^\circ\text{C}$     | 10.0A                    |
|                 |       |                             |                         |                          |                                 | Jumper < 50mΩ   |   |                          |
| RC2512          | 1 W   | -55°C to 155°C              | 200V                    | 500V                     | 500V                            | 5% (E24)<br>$1\Omega \leq R \leq 22M\Omega$             | $1\Omega \leq R \leq 10\Omega$<br>$\pm 200\text{ppm}^\circ\text{C}$     | Rated Current<br>2.0A    |
|                 |       |                             |                         |                          |                                 | 1% (E24/E96)<br>$1\Omega \leq R \leq 10M\Omega$         | $10\Omega < R \leq 10M\Omega$<br>$\pm 100\text{ppm}^\circ\text{C}$      | Maximum Current<br>10.0A |
| RC2512          | 1 W   | -55°C to 155°C              | 200V                    | 500V                     | 500V                            | 0.1%, 0.5% (E24/E96)<br>$10\Omega \leq R \leq 1M\Omega$ | $10M\Omega < R \leq 22M\Omega$<br>$\pm 200\text{ppm}^\circ\text{C}$     | 10.0A                    |
|                 |       |                             |                         |                          |                                 | Jumper < 50mΩ   |   |                          |
| RC2512          | 2 W   | -55°C to 155°C              | 200V                    | 400V                     | 500V                            | 5% (E24)<br>$1\Omega \leq R \leq 1M\Omega$              | $1\Omega \leq R \leq 1M\Omega$<br>$\pm 200\text{ppm}^\circ\text{C}$     | 10.0A                    |
|                 |       |                             |                         |                          |                                 | 1% (E24/E96)<br>$1\Omega \leq R \leq 1M\Omega$          |   |                          |

**PACKING STYLE AND PACKAGING QUANTITY**

Table 4 Packing style and packaging quantity

| PACKING STYLE | PAPER TAPING REEL (R) |             |              | ESD SAFE REEL (S)<br>(4MM WIDTH, 1MM<br>PITCH PLASTIC<br>EMBOSSSED) | EMBOSSSED TAPING REEL |              |
|---------------|-----------------------|-------------|--------------|---|-----------------------|--------------|
|               | 7" (178 mm)           | 10" (254mm) | 13" (330 mm) |   | 7" (178 mm)           | 13" (330 mm) |
| RC0075        | ---                   | ---         | ---          | 20000   | ---                   | ---          |
| RC0100        | 20000                 | ---         | 80000        | 40000   | ---                   | ---          |
| RC0201        | 10000                 | 20000       | 50000        | ---   | ---                   | ---          |
| RC0402        | 10000                 | 20000       | 50000        | ---   | ---                   | ---          |
| RC0603        | 5000                  | 10000       | 20000        | ---   | ---                   | ---          |
| RC0805        | 5000                  | 10000       | 20000        | ---   | ---                   | ---          |
| RC1206        | 5000                  | 10000       | 20000        | ---   | ---                   | ---          |
| RC1210        | 5000                  | 10000       | 20000        | ---   | ---                   | ---          |
| RC1218        | ---                   | ---         | ---          | ---   | 4000                  | ---          |
| RC2010        | ---                   | ---         | ---          | ---   | 4000                  | 16000        |
| RC2512        | ---                   | ---         | ---          | ---   | 4000                  | ---          |

**NOTE**

For tape and reel specification/dimensions, please refer to data sheet "Chip resistors packing".

**FUNCTIONAL DESCRIPTION****OPERATING TEMPERATURE RANGE**

RC0402 to RC2512 Range: -55°C to +155°C (Fig. 10-1)

RC0075 to RC0201 Range: -55°C to +125°C (Fig. 10-2)

**POWER RATING**

Each type rated power at 70°C:

RC0075=1/50W

RC0100=1/32W

RC0201=1/20W

RC0402=1/16W, 1/8W

RC0603=1/10W, 1/5W

RC0805=1/8W, 1/4W

RC1206=1/4W, 1/2W

RC1210=1/2W

RC1218=1W

RC2010=3/4W

RC2512=1W, 2W

**RATED VOLTAGE**

The DC or AC (rms) continuous working voltage corresponding to the rated power is determined by the following formula:

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

or max. working voltage whichever is less

Where

V = Continuous rated DC or AC (rms) working voltage (V)

P = Rated power (W)

R = Resistance value ( $\Omega$ )

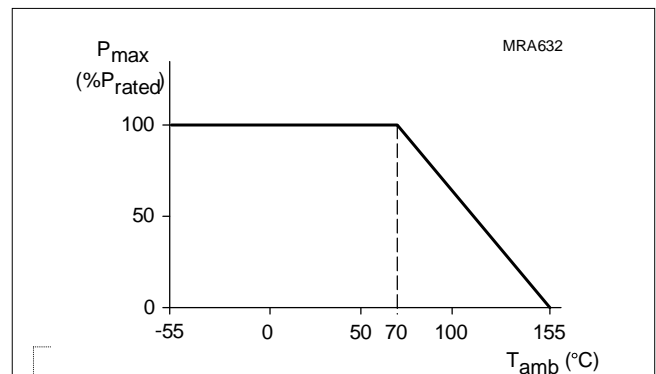


Fig. 10-1 Maximum dissipation (P) in percentage of rated power as a function of the operating ambient temperature (Tamb)



Fig. 10-2 Maximum dissipation (P) in percentage of rated power as a function of the operating ambient temperature (Tamb)

## TESTS AND REQUIREMENTS

Table 5 Test condition, procedure and requirements

| TEST   | TEST METHOD                               | PROCEDURE  | REQUIREMENTS   |
|--|---|--|--|
| Temperature Coefficient of Resistance (T.C.R.) | MIL-STD-202 Method 304                    | At +25/-55°C and +25/+125°C<br><br>Formula:<br>$T.C.R = \frac{R_2 - R_1}{R_1(t_2 - t_1)} \times 10^6 \text{ (ppm/°C)}$<br>Where<br>t <sub>1</sub> =+25 °C or specified room temperature<br>t <sub>2</sub> =-55 °C or +125 °C test temperature<br>R <sub>1</sub> =resistance at reference temperature in ohms<br>R <sub>2</sub> =resistance at test temperature in ohms | Refer to table 2   |
| Life/Endurance                                 | MIL-STD-202 Method 108<br>IEC 60115-1 7.1 | At 70±2°C for 1,000 hours; RCWV applied for 1.5 hours on and 0.5 hour off, still air required  | 0075: ± (5%+100mΩ)<br><100mΩ for jumper<br>01005: ±(3% +50mΩ)<br><100mΩ for jumper<br>Others:<br>±(1%+50mΩ) for B/D/F tol<br>±(3%+50mΩ) for J tol<br><100mR for jumper     |
| High Temperature Exposure                      | MIL-STD-202 Method 108                    | 1,000 hours at maximum operating temperature depending on specification, unpowered.  | 0075: ± (5%+100mΩ)<br><100mΩ for jumper<br>01005: ±(1% +50mΩ)<br>< 50mΩ for jumper<br>Others:<br>±(1%+50mΩ) for B/D/F tol<br>±(2%+50mΩ) for J tol<br><50mR for jumper      |
| Moisture Resistance                            | MIL-STD-202 Method 106                    | Each temperature / humidity cycle is defined at 8 hours, 3 cycles / 24 hours for 10d with 25°C / 65°C 95% R.H, without steps 7a & 7b, unpowered<br>Parts mounted on test-boards, without condensation on parts   | 0075: ± (2%+100mΩ)<br><100mΩ for jumper<br>01005: ±(2% +50mΩ)<br>< 100mΩ for jumper<br>Others:<br>±(0.5%+50mΩ) for B/ D/F tol<br>±(2%+50mΩ) for J tol<br><100mR for jumper |
| Humidity                                       | IEC 60115-1 10.4                          | Steady state for 1000 hours at 40°C / 95% R.H. RCWV applied for 1.5 hours on and 0.5 hour off  | 0075: ± (5%+100mΩ)<br>01005: ±(3% +50mΩ)<br>< 100mΩ for jumper<br>Others:<br>±(1%+50mΩ) for B/D/F tol<br>±(2%+50mΩ) for J tol<br><100mR for jumper                         |

| TEST                          | TEST METHOD            | PROCEDURE  | REQUIREMENTS   |
|-------------------------------|------------------------|--|--|
| Thermal Shock                 | MIL-STD-202 Method 107 | -55/+125°C<br>Note Number of cycles required is 300.<br>Devices mounted<br>Maximum transfer time is 20 seconds.<br>Dwell time is 15 minutes. Air - Air   | 0075/01005: $\pm(1\% + 50\text{m}\Omega)$<br>< 50m $\Omega$ for jumper<br>Others:<br>$\pm(0.5\% + 50\text{m}\Omega)$ for B/D/F tol<br>$\pm(1\% + 50\text{m}\Omega)$ for J tol<br>< 50mR for jumper   |
| Short Time Overload           | IEC 60115-1 8.1        | 2.5 times RCWV or maximum overload voltage which is less for 5 seconds at room temperature   | 0075/01005: $\pm(2\% + 50\text{m}\Omega)$<br>< 50m $\Omega$ for jumper<br>Others:<br>$\pm(1\% + 50\text{m}\Omega)$ for B/D/F tol<br>$\pm(2\% + 50\text{m}\Omega)$ for J tol<br><50mR for jumper<br>No visible damage   |
| Board Flex/Bending            | IEC 60115-1 9.8        | Device mounted or as described only 1 board bending required<br>bending time: 60 $\pm$ 5 seconds<br>0075/0100/0201/0402:5mm;<br>0603/0805:3mm;<br>1206 and above:2mm   | 0075/01005: $\pm(1\% + 50\text{m}\Omega)$<br>< 50m $\Omega$ for jumper<br>Others:<br>$\pm(1\% + 50\text{m}\Omega)$ for B/D/F/J tol<br><50mR for jumper<br>No visible damage  |
| Solderability - Wetting       | J-STD-002 test B1      | Electrical Test not required Magnification 50X SMD conditions:<br>1 <sup>st</sup> step: aging 4 hours at 155°C dry heat<br>2 <sup>nd</sup> step: method B1, leadfree solder bath at 245 $\pm$ 3°C<br>Dipping time: 3 $\pm$ 0.5 seconds | Well tinned (>95% covered)<br>No visible damage  |
| -Leaching                     | J-STD-002 test D       | Leadfree solder ,260°C, 30 seconds immersion time  | No visible damage  |
| -Resistance to Soldering Heat | MIL-STD-202 Method 210 | Condition B, no pre-heat of samples<br>Leadfree solder, 260°C $\pm$ 5°C, 10 $\pm$ 1 seconds immersion time<br>Procedure 2 for SMD: devices fluxed and cleaned with isopropanol   | 0075: $\pm(3\% + 50\text{m}\Omega)$<br><50m $\Omega$ for jumper<br>01005: $\pm(1\% + 50\text{m}\Omega)$<br>< 50m $\Omega$ for jumper<br>Others:<br>$\pm(0.5\% + 50\text{m}\Omega)$ for B/D/F tol.<br>$\pm(1\% + 50\text{m}\Omega)$ for J tol.<br><50mR for jumper<br>No visible damage |

**REVISION HISTORY**

| REVISION   | DATE          | CHANGE NOTIFICATION | DESCRIPTION  |
|------------|---------------|---------------------|--|
| Version 12 | Aug. 02, 2022 | -                   | - l2 dimension updated, for size 1206, size 2010, size 2512.                   |
| Version 11 | May 15, 2020  | -                   | - Extend RC0201, RC0402, RC0603, RC0805, RC1206 D tol resistance range to 1ohm |
| Version 10 | Dec. 12, 2018 | -                   | - Updated 0075 dimensions  |
| Version 9  | Mar. 06, 2018 | -                   | - Add 0.5%/1% marking rule for RC0603 ~ RC2512 based on marking datasheet      |
| Version 8  | July 10, 2017 | -                   | - Add "3W" part number coding for 13" Reel & double power                      |
| Version 7  | Mar. 7, 2017  | -                   | - Add 10" packing  |
| Version 6  | Feb.15, 2017  | -                   | - Extend RC0805 and RC1206 resistance range to 100Mohm                         |
| Version 5  | Oct. 06, 2016 | -                   | - Description: Update Dimension of l2 of RC2512 (2W)                           |
| Version 4  | Jan. 22, 2016 | -                   | - Update resistance range  |
| Version 3  | Dec. 24, 2015 | -                   | - Updated test and requirements  |
| Version 2  | Jul. 23, 2015 | -                   | - Updated test and requirements  |
| Version 1  | Jan. 21, 2015 | -                   | - ESD Safe Reel update   |
| Version 0  | Dec. 15, 2014 | -                   | - First issue of this specification  |

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