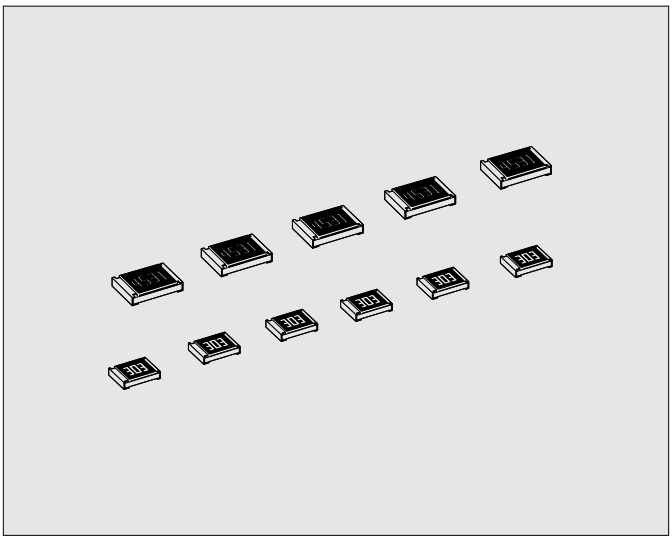
# RNC

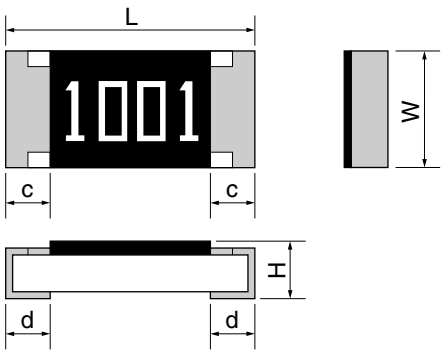


## • Features

1. Suitable for high precision, higher stability and reliability applications compared to thick-film chip resistors.
2. Contribute to the reduction of fine adjustment, high accuracy and stability of circuit.
3. Stability Class : 1%



## • Dimensions




Rated resistance value is maked with 3-digit (E24) or 4-digit (E96) on the over coating.

Unit : mm

| Style | Metric | Inch | L | W | H | c | d | *Unit weight/pc. |
|---|---|---|---|---|---|---|---|---|
| **RNC20** | **2012** | **0805** | 2.0±0.15 | $1.25^{+0.10}_{-0.05}$ | 0.6±0.1 | 0.4 ±0.2 | $0.3^{+0.2}_{-0.1}$ | 5mg |
| **RNC32** | **3216** | **1206** | 3.1±0.1 | $1.55^{+0.10}_{-0.05}$ | 0.6±0.1 | 0.45±0.20 | $0.3^{+0.2}_{-0.1}$ | 9mg |

*Values for reference

## • Part Number Description

Example

Style: RNC 32 | E | 1002 | B | TP

Product Type

| Size | | |
|---|---|---|
| Code | Metric | Inch |
| 20 | 2012 | 0805 |
| 32 | 3216 | 1206 |

| Temperature Coefficient of Resistance | |
|---|---|
| E | ±25×10$^{-6}$/°C |

| Rated Resistance | |
|---|---|
| E24 Series e.g. : 103=10k ohm | 3-Digit |
| E96 Series e.g. : 10R2=10.2 ohm 1002=10k ohm | 4-Digit |

| Tolerance on Rated Resistance | |
|---|---|
| B | ±0.1% |
| C | ±0.25% |
| D | ±0.5% |

| * Packaging & Standard Qty. (Min.) | | |
|---|---|---|
| B | Bulk (Loose Package) | 1,000pcs. |
| TP | Paper Tape | 5,000pcs. |

*Refer to Tape and Packaging information on pages 46 and 47.

# FIXED THIN FILM CHIP RESISTORS; RECTANGULAR TYPE RNC



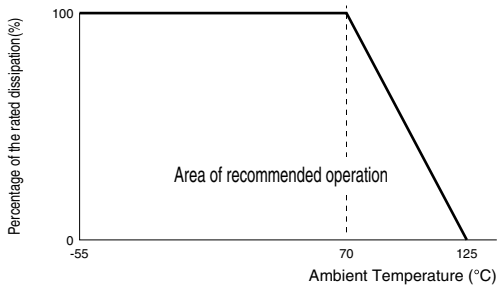
## • Ratings

| Style | Size Metric (Inch) | Rated Dissipation at 70°C W | Rated Resistance Range | Tolerance on Rated Resistance | Temperature Coefficient of Resistance $10^{-6}$/°C | Limiting Element Voltage V | Preferred Number Series for Resistors | Isolation Voltage V | Category Temperature Range °C |
|---|---|---|---|---|---|---|---|---|---|
| RNC20 | 2012 (0805) | 0.1 | 100Ω～130kΩ | B (±0.1%) | ±25 | 75 | E96 E24 | 100 | −55～+125 |
| | | | 10Ω～130kΩ | C (±0.25%) D (±0.5%) | | | | | |
| RNC32 | 3216 (1206) | 0.125 | 100Ω～180kΩ | B (±0.1%) | | 150 | | | |
| | | | 10Ω～180kΩ | C (±0.25%) D (±0.5%) | | | | | |

Note1. Rated Voltage = $\sqrt{(\text{Rated Dissipation}) \times (\text{Rated Resistance})}$. (d.c. or a.c. r.m.s. Voltage)
Note2. Limiting Element Voltage can only be applied to resistors when the resistance value is equal to or higher than the critical resistance value.
Note3. Critical Resistance Value is the resistance value at which the rated voltage is equal to the limiting element voltage.

## • Derating Curve

The derated values of dissipation for temperatures in excess of 70°C shall be indicated by the following Curve.




## • Climatic Category

55/125/56

| | |
|---|---|
| Lower Category Temperature | −55°C |
| Upper Category Temperature | +125°C |
| Duration of the Damp heat, Steady-State Test | 56 days |

## • Performance Characteristics JIS C 5201-1 : 1998

| Description | Requirements | Test Methods |
|---|---|---|
| Voltage proof | No breakdown or flashover R≥1G ohm | Clause 4.7 100Va.c.,60s |
| Variation of resistance with temperature | See Ratings Table | Clause 4.8 Measuring temperature : +20°C/+125°C/+20°C |
| Overload | ΔR≤±(0.25%+0.05 ohm) No visible damage, legible marking | Clause 4.13 The applied voltage shall be 2.5 times of the rated voltage or twice of the limiting element voltage, whichever is the less severe, 2s. |
| Solderability | In accordance with Clause 4.17.4.5 | Clause 4.17 235°C, 2s |
| Resistance to soldering heat | ΔR≤±(0.25%+0.05 ohm) | Clause 4.18 After immersion into the flux, the immersion into solder shall be carried out in Solder bath at 260°C for 5s. |
| Rapid change of temperature | ΔR≤±(0.25%+0.05 ohm) No visible damage | Clause 4.19 5 cycles between −55°C and +125°C. |
| Climatic sequence | ΔR≤±(1%+0.05 ohm) No visible damage | Clause 4.23 Dry/Damp heat(12+12h cycle), first cycle./ Cold/Damp heat(12+12h cycle), remaining cycle./ D.C.Load. |
| Damp test, steady state | ΔR≤±(1%+0.05 ohm) No visible damage, legible marking | Clause 4.24 40°C, 95%R.H., 56 days, test a) and b) of Clause 4.24.2.1 |
| Endurance at 70°C | ΔR≤±(1%+0.05 ohm) No visible damage, legible marking | Clause 4.25.1 Rated voltage, 1.5h"ON", 0.5h"OFF", 70°C, 1,000h. |
| Endurance at the upper category temperature | ΔR≤±(1%+0.05 ohm) No visible damage | Clause 4.25.3 125°C, no-load, 1,000h. |
| Adhesion | No visible damage | Clause 4.32 5N, 10s |
| Bend strength of the face plating | ΔR≤±(0.25%+0.05 ohm) | Clause 4.33 Amount of bend : 3 mm |