

Compact Film Chip Resistors

MCR004 (01005 size : 1 / 32W)

●Features

- 1) Extremely small
Area ratio is 50% smaller than that of chip 0201.
- 2) High dimensional precision
Novel semiconductor process technology guarantees an external dimensional tolerance of ±20µm.
- 3) Pressed carrier tape applications
Using a pressed carrier tape reduces mounting errors compared with conventional carrier tapes.
- 4) ROHM resistors have approved ISO9001- / ISO/TS 16949- certification.
Design and specifications are subject to change without notice. Carefully check the specification sheet supplied with the product before using or ordering it.

●Ratings

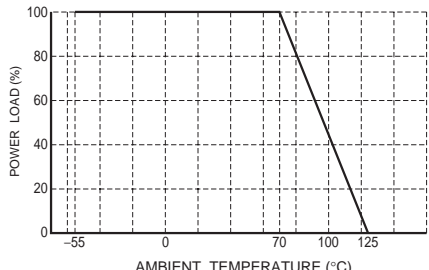
Item	Conditions	Specifications
Rated power	Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70°C.  <p style="text-align: center;">Fig.1</p>	0.031W (1 / 32W) at 70°C
Rated voltage	The voltage rating is calculated by the following equation. If the value obtained exceeds the limiting element voltage, the voltage rating is equal to the maximum operating voltage. $E = \sqrt{P \times R}$ <p>E: Rated voltage (V) P: Rated power (W) R: Nominal resistance (Ω)</p>	Limiting element voltage 15V
Nominal resistance	See Table 1.	
Operating temperature		-55°C to +125°C

Table 1

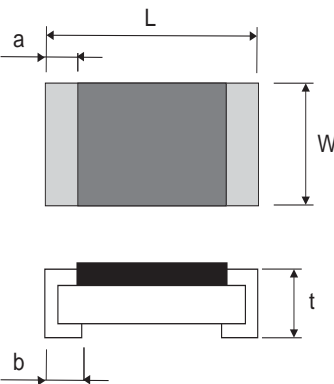
Jumper type		Resistance tolerance	Resistance range (Ω)	Resistance temperature coefficient (ppm / °C)
Resistance	Max. 50mΩ	J (±5%)	10 ≤ R < 100 (E24)	±300
Rated current	0.5A		100 ≤ R ≤ 3M (E24)	±250
Operating temperature	-55°C to +125°C	F (±1%)	10 ≤ R < 100 (E24)	±300
			100 ≤ R ≤ 3M (E24)	±250

●Before using components in circuits where they will be exposed to transients such as pulse loads (short-duration, high-level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady state voltage that is greater than its rated voltage.

●Characteristics

Item	Guaranteed value		Test conditions (JIS C 5201-1)
	Resistor type	Jumper type	
Resistance	J : $\pm 5\%$ F : $\pm 1\%$	Max. 50m Ω	JIS C 5201-1 4.5
Variation of resistance with temperature	See Table.1	Max. 50m Ω	JIS C 5201-1 4.8 Measurement : +20 / -55 / +20 / +125°C
Overload	$\pm (2.0\%+0.1\Omega)$	Max. 50m Ω	JIS C 5201-1 4.13 Rated voltage (current) $\times 2.5$, 2s. Limiting Element Voltage $\times 2$: 30V
Solderability	A new uniform coating of minimum of 95% of the surface being immersed and no soldering damage.		JIS C 5201-1 4.17 Rosin-Ethanol (25%WT) Soldering condition : 235 \pm 5°C Duration of immersion : 2.0 \pm 0.5s.
Resistance to soldering heat	$\pm (1.0\%+0.05\Omega)$ No remarkable abnormality on the appearance.	Max. 50m Ω	JIS C 5201-1 4.18 Soldering condition : 260 \pm 5°C Duration of immersion : 10 \pm 1s.
Rapid change of temperature	$\pm (1.0\%+0.05\Omega)$	Max. 50m Ω	JIS C 5201-1 4.19 Test temp. : -55°C to +125°C 100cyc
Damp heat, steady state	$\pm (3.0\%+0.1\Omega)$	Max. 100m Ω	JIS C 5201-1 4.24 40°C, 93%RH Test time : 1,000h to 1,048h
Endurance at 70°C	$\pm (3.0\%+0.1\Omega)$	Max. 100m Ω	JIS C 5201-1 4.25.1 Rated voltage (current), 70°C \pm 3°C 1.5h : ON - 0.5h : OFF Test time : 1,000h to 1,048h
Endurance	$\pm (3.0\%+0.1\Omega)$	Max. 100m Ω	JIS C 5201-1 4.25.3 125°C Test time : 1,000h to 1,048h
Resistance to solvent	$\pm (1.0\%+0.05\Omega)$	Max. 50m Ω	JIS C 5201-1 4.29 23 \pm 5°C, Immersion cleaning, 5 \pm 0.5min. Solvent : 2-propanol
Bend strength of the end face plating	$\pm (1.0\%+0.05\Omega)$ Without mechanical damage such as breaks.	Max. 50m Ω	JIS C 5201-1 4.33

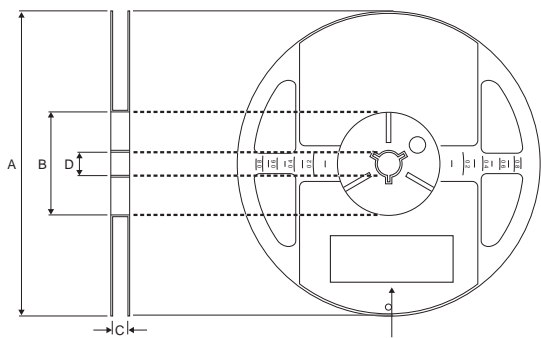
●Dimensions (Unit : mm)



Part No.	Size code mm (inch)	L	W	t	a	b
MCR004	0402(01005)	0.4 \pm 0.02	0.2 \pm 0.02	0.13 \pm 0.02	0.1 \pm 0.03	0.1 \pm 0.03

●Packaging
 • Paper tape(2mm Pitch)

Reel

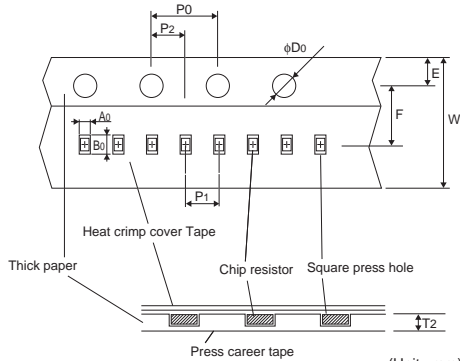


EIAJ ET-7200B compliant

(Unit : mm)

A	B	C	D
$\phi 180 \begin{smallmatrix} 0 \\ -15 \end{smallmatrix}$	$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	$9 \begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$	$\phi 13 \pm 0.2$

Taping

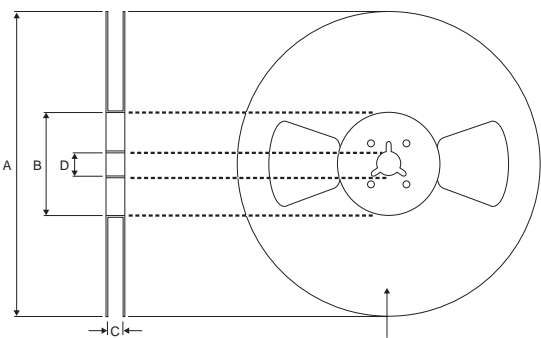


(Unit : mm)

W	F	E	A ₀	B ₀
8.0±0.2	3.5±0.05	1.75±0.1	0.24±0.03	0.45±0.03
D ₀	P ₀	P ₁	P ₂	T ₂
$\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	4.0±0.1	2.0±0.05	2.0±0.05	Max. 0.50

• Embossed tape(1mm Pitch)

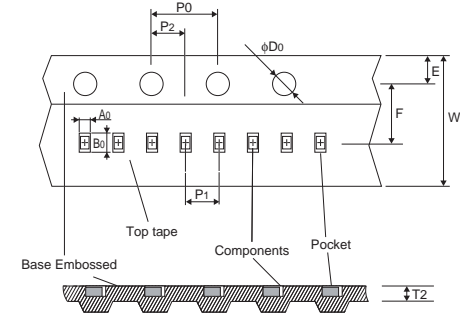
Reel



(Unit : mm)

A	B	C	D
$\phi 178 \pm 1.0$	$\phi 60 \pm 1.0$	$5 \begin{smallmatrix} +1.0 \\ -0.6 \end{smallmatrix}$	$\phi 13 \pm 0.2$

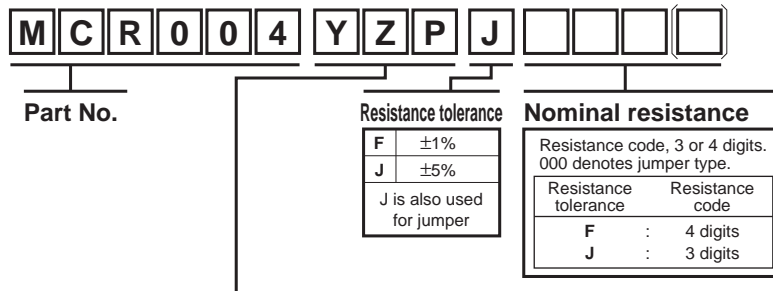
Taping



(Unit : mm)

W	F	E	A ₀	B ₀
4.0±0.05	1.8±0.02	0.9±0.05	0.23±0.02	0.43±0.02
D ₀	P ₀	P ₁	P ₂	T ₂
0.8±0.04	2.0±0.04	1.0±0.02	1.0±0.02	0.2±0.02

●Part No. Explanation



Packaging Specifications Code

Part No.	Code	Resistance tolerance		Packaging specifications	Reel	Basic ordering unit (pcs)
		J(±5%)	F(±1%)			
MCR004	YZP	⊙	⊙	Paper tape (2mm Pitch)	φ180mm	15,000
	RZP	⊙	⊙	Embossed tape (1mm Pitch)	φ180mm	40,000

Reel (φ180) : JEITA ET-7200B
 ⊙ : Standard product

Notes

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