

High Voltage Resistance Chip Resistors

KTR03 (0603 size : 1 / 10W)

●Features

- 1) Power rating of 1 / 10W
- 2) Limiting element voltage of KTR series is 7 times compared with that of MCR series.
- 3) Highly reliable chip resistor
Ruthenium oxide dielectric offers superior resistance to the elements.
- 4) ROHM resistors have approved ISO9001- / ISO/TS 16949- certification.
Design and specifications are subject to change without notice. Carefully check the specification sheet before using or ordering it.

●Ratings

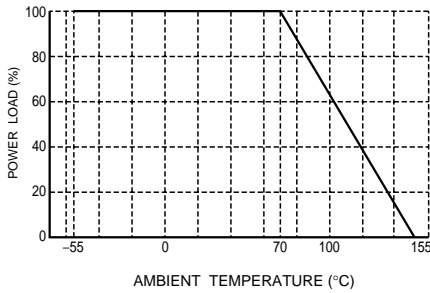
Item	Conditions	Specifications
Rated power	Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70°C.  Fig.1	0.10W (1 / 10W) at 70°C
Rated voltage	The voltage rating is calculated by the following equation. If the value obtained exceeds the limiting element voltage, the voltage rating is equal to the maximum operating voltage. $E = \sqrt{P \times R}$ E: Rated voltage (V) P: Rated power (W) R: Nominal resistance (Ω)	Limiting element voltage 350V
Nominal resistance	See Table 1 .	
Operating temperature		-55°C to + 155°C

Table 1

Resistance tolerance	Resistance range (Ω)	Resistance temperature coefficient (ppm/°C)
F (±1%)	10 ≤ R ≤ 10M (E24)	±100
J (±5%)	10 ≤ R ≤ 10M (E24)	±200

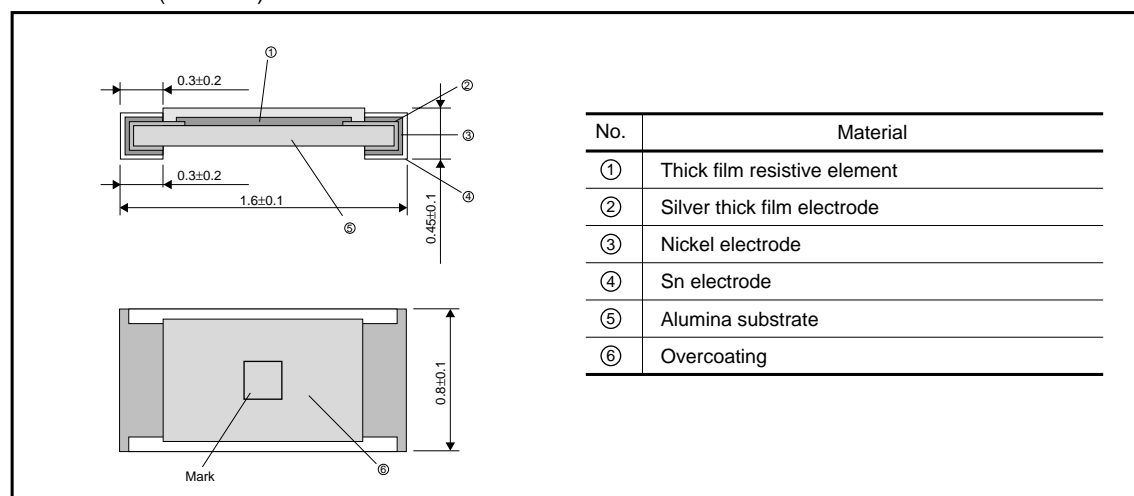
- Before using components in circuits where they will be exposed to transients such as pulse loads (short-duration, high-level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady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

Resistors

●Characteristics

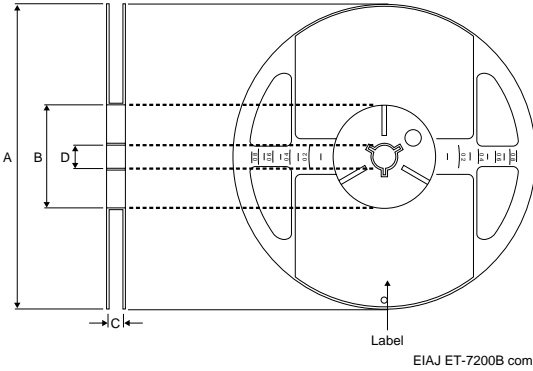
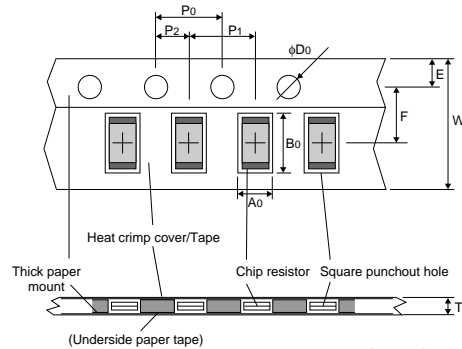
Item	Guaranteed value	Test conditions (JIS C 5201-1)
	Resistor type	
Resistance	J : $\pm 5\%$ F : $\pm 1\%$	JIS C 5201-1 4.5
Variation of resistance with temperature	See <u>Table.1</u>	JIS C 5201-1 4.8 Measurement : $-55 / +25 / +125^{\circ}\text{C}$
Overload	$\pm (2.0\%+0.1\Omega)$	JIS C 5201-1 4.13 Rated voltage (current) $\times 2.5$, 2s. Maximum overload voltage : 500V
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 : $235\pm 5^{\circ}\text{C}$ Duration of immersion : $2.0\pm 0.5\text{s}$.
Resistance to soldering heat	$\pm (1.0\%+0.05\Omega)$ No remarkable abnormality on the appearance.	JIS C 5201-1 4.18 Soldering condition : $260\pm 5^{\circ}\text{C}$ Duration of immersion : $10\pm 1\text{s}$.
Rapid change of temperature	$\pm (1.0\%+0.05\Omega)$	JIS C 5201-1 4.19 Test temp. : -55°C to $+125^{\circ}\text{C}$ 5cyc
Damp heat, steady state	$\pm (3.0\%+0.1\Omega)$	JIS C 5201-1 4.24 40°C , 93%RH Test time : 1,000h to 1,048h
Endurance at 70°C	$\pm (3.0\%+0.1\Omega)$	JIS C 5201-1 4.25.1 Rated voltage (current), 70°C 1.5h : ON – 0.5h : OFF Test time : 1,000h to 1,048h
Endurance	$\pm (3.0\%+0.1\Omega)$	JIS C 5201-1 4.25.3 155°C Test time : 1,000h to 1,048h
Resistance to solvent	$\pm (1.0\%+0.05\Omega)$	JIS C 5201-1 4.29 $23\pm 5^{\circ}\text{C}$, Immersion cleaning, $5\pm 0.5\text{min}$. Solvent : 2-propanol
Bend strength of the end face plating	$\pm (1.0\%+0.05\Omega)$ Without mechanical damage such as breaks.	JIS C 5201-1 4.33

●Dimensions (Unit : mm)



Resistors

●Packaging

Reel	Taping																												
 <p style="text-align: center;">EIAJ ET-7200B compliant</p> <p style="text-align: center;">(Unit: mm)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">A</td> <td style="text-align: center;">B</td> <td style="text-align: center;">C</td> <td style="text-align: center;">D</td> </tr> <tr> <td style="text-align: center;">$\phi 180 \begin{smallmatrix} 0 \\ -1.5 \end{smallmatrix}$</td> <td style="text-align: center;">$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$</td> <td style="text-align: center;">$9 \begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$</td> <td style="text-align: center;">$\phi 13 \pm 0.2$</td> </tr> </table>	A	B	C	D	$\phi 180 \begin{smallmatrix} 0 \\ -1.5 \end{smallmatrix}$	$\phi 60 \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	$9 \begin{smallmatrix} +1.0 \\ 0 \end{smallmatrix}$	$\phi 13 \pm 0.2$	 <p style="text-align: center;">(Underside paper tape) (Unit: mm)</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">W</td> <td style="text-align: center;">F</td> <td style="text-align: center;">E</td> <td style="text-align: center;">A0</td> <td style="text-align: center;">B0</td> </tr> <tr> <td style="text-align: center;">8.0 ± 0.3</td> <td style="text-align: center;">3.5 ± 0.05</td> <td style="text-align: center;">1.75 ± 0.1</td> <td style="text-align: center;">1.1 ± 0.1</td> <td style="text-align: center;">1.9 ± 0.1</td> </tr> <tr> <td style="text-align: center;">D0</td> <td style="text-align: center;">P0</td> <td style="text-align: center;">P1</td> <td style="text-align: center;">P2</td> <td style="text-align: center;">T2</td> </tr> <tr> <td style="text-align: center;">$\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$</td> <td style="text-align: center;">4.0 ± 0.1</td> <td style="text-align: center;">4.0 ± 0.1</td> <td style="text-align: center;">2.0 ± 0.05</td> <td style="text-align: center;">Max. 1.1</td> </tr> </table>	W	F	E	A0	B0	8.0 ± 0.3	3.5 ± 0.05	1.75 ± 0.1	1.1 ± 0.1	1.9 ± 0.1	D0	P0	P1	P2	T2	$\phi 1.5 \begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	Max. 1.1
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●Part No. Explanation

K	T	R	0	3	E	Z	P		J															
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Packaging Specifications Code

Part No.	Code	Resistance tolerance		Packaging specifications	Reel	Basic ordering unit(pcs)
		J($\pm 5\%$)	F($\pm 1\%$)			
KTR03	EZP	◎	◎	Paper tape (4mm Pitch)	$\phi 180\text{mm}$ (7inch)	5,000

Reel ($\phi 180\text{mm}$) : Compatible with JEITA standard "EIAJ ET-7200B"
 ◎ : Standard product

Notes

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