

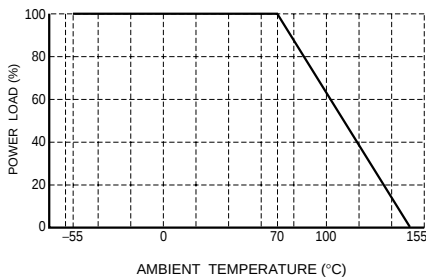
Thick film rectangular Low resistance series

MCR18 (3216 size (1206 size) : 1 / 4W)

●Features

- 1) Power rating of 1 / 4W
- 2) Highly reliable chip resistor Ruthenium oxide dielectric offers superior resistance to the elements.
- 3) Electrodes not corroded by soldering
Thick film makes the electrodes very strong.
- 4) 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	0.25W (1 / 4W) 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	1.58V(10Ω)
Nominal resistance	See Table 1.		
Operating temperature		-55°C to +155°C	

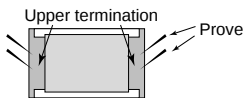
Resistors

Table 1

Resistance tolerance	Special specification	Resistance range (Ω)	Resistance temperature coefficient (ppm/ $^{\circ}$ C)
F ($\pm 1\%$)	L	$0.15 \leq R \leq 9.1$ (E24)	± 250
	L	$0.1 \leq R \leq 0.13$ (E24)	400 ± 200
	S	$0.047 \leq R \leq 0.091$ (E24)	500 ± 300
J ($\pm 5\%$)	L	$0.15 \leq R < 0.91$ (E24)	± 250
	L	$0.1 \leq R \leq 0.13$ (E24)	400 ± 200
	S	$0.047 \leq R \leq 0.091$ (E24)	500 ± 300

- 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	
Resistance	J : $\pm 5\%$ F : $\pm 1\%$	JIS C 5201-1 4.5 Load voltage : A Measuring method : measure upper termination by 4 probes. 
Variation of resistance with temperature	See Table.1	JIS C 5201-1 4.8 Measurement : $+25 / -55 / +25 / +125^{\circ}\text{C}$
Overload	$\pm (2.0\% + 0.005\Omega)$	JIS C 5201-1 4.13 Rated voltage (current) $\times 2.5$, 2s.
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	$\pm (1.0\% + 0.005\Omega)$ 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	$\pm (1.0\% + 0.005\Omega)$	JIS C 5201-1 4.19 Test temp. : -55°C to $+125^{\circ}\text{C}$ 5cyc
Damp heat, steady state	$\pm (3.0\% + 0.005\Omega)$	JIS C 5201-1 4.24 40°C , 93%RH Test time : 56days
Endurance at 70°C	$\pm (3.0\% + 0.005\Omega)$	JIS C 5201-1 4.25.1 70°C , Rated voltage 1.5h : ON – 0.5h : OFF Test time : 1,000h
Endurance	$\pm (3.0\% + 0.005\Omega)$	JIS C 5201-1 4.25.3 155°C Test time : 1,000h to 1,048h
Component solvent resistance	$\pm (0.5\% + 0.005\Omega)$	JIS C 5201-1 4.29 $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Solvent : 2-propanol
Bend strength of the end face plating	Without open.	JIS C 5201-1 4.33

No.	Material
①	Resistive element
②	Silver thick film electrode
③	Nickel electrode
④	Sn electrode
⑤	Alumina substrate
⑥	Overcoating

Reel

The reel drawing shows dimensions A (total width), B (width between side flanges), C (flange thickness), D (central hole diameter), and a central hub with a label. The text "EIAJ ET-7200B compliant" is present.

A	B	C	D
$\phi 180 \begin{matrix} 0 \\ -1.5 \end{matrix}$	$\phi 60 \begin{matrix} +1 \\ 0 \end{matrix}$	$9 \begin{matrix} +1.0 \\ 0 \end{matrix}$	$\phi 13 \pm 0.2$

(Unit: mm)

Taping

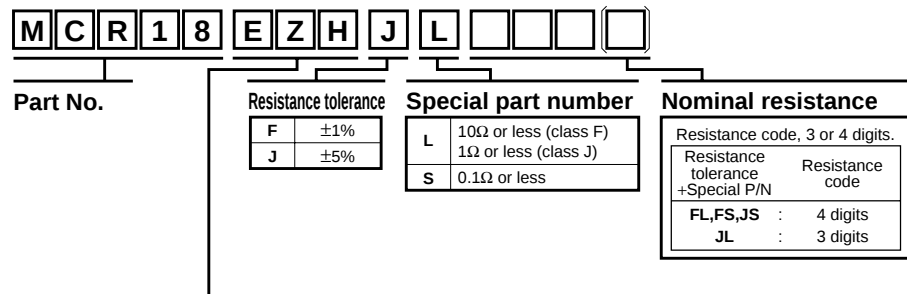
The taping diagram shows dimensions P₀, P₂, E, F, W, A₂, B₂, and D₂. It labels components like Heat crimp cover/Tape, Thick paper mount, Chip resistor, Square punchout hole, and T₂.

W	F	E	A ₂	B ₂
8.0 ± 0.3	3.5 ± 0.05	1.75 ± 0.1	$1.95 \begin{matrix} +0.1 \\ -0.05 \end{matrix}$	$3.5 \begin{matrix} +0.15 \\ -0.05 \end{matrix}$
D ₂	P ₂	P ₂	P ₂	T ₂
$\phi 1.5 \begin{matrix} +0.1 \\ 0 \end{matrix}$	4.0 ± 0.1	4.0 ± 0.1	2.0 ± 0.05	Max. 1.1

(Unit: mm)

Resistors

●Part No. Explanation



Packaging Specifications Code

Part No.	Code	Resistance tolerance		Packaging specifications	Reel	Basic ordering unit(pcs)
		J(±5%)	F(±1%)			
MCR18	EZH	◎	◎	Paper tape (4mm Pitch)	φ180mm (7in.)	5,000

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

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