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

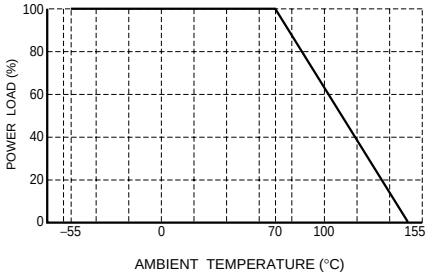
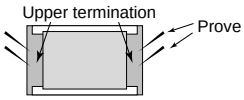
Item	Conditions	Specifications	
Rated power	Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70°C.  Fig.1	0.25W (1 / 4W) at 70°C	
Rated voltage	The voltage rating is calculated by the following equation. If the value obtained exceeds the limiting 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	

Table 1

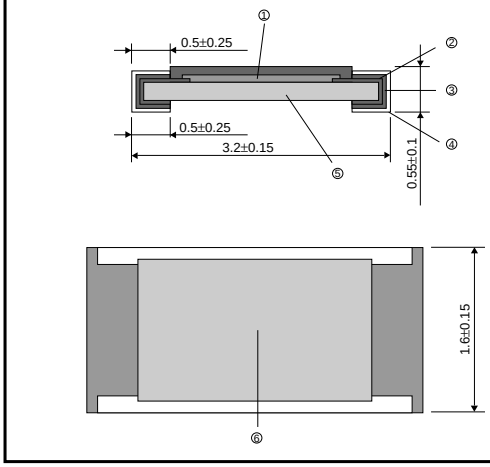
Resistance tolerance	Special specification	Resistance range (Ω)	Resistance temperature coefficient (ppm/°C)
F (±1%)	L	0.15≤ R ≤ 9.1 (E24)	±250
	L	0.1≤ R ≤ 0.13 (E24)	400±200
	S	0.047 ≤ R ≤ 0.091 (E24)	500±300
J (±5%)	L	0.15 ≤ R < 0.91 (E24)	±250
	L	0.1 ≤ R ≤ 0.13 (E24)	400±200
	S	0.047 ≤ R ≤ 0.091 (E24)	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 Resistor type	Test conditions (JIS C 5201-1)
Resistance	J : ±5% F : ±1%	JIS C 5201-1 4.5 Load voltage : A Measuring method : measure upper termination by 4 proves. 
Variation of resistance with temperature	See Table.1	JIS C 5201-1 4.8 Measurement : +25 / –55 / +25 / +125°C
Overload	± (2.0%+0.005Ω)	JIS C 5201-1 4.13 Rated voltage (current) ×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±5°C Duration of immersion : 2.0±0.5s.
Resistance to soldering heat	± (1.0%+0.005Ω) No remarkable abnormality on the appearance.	JIS C 5201-1 4.18 Soldering condition : 260±5°C Duration of immersion : 10±1s.
Rapid change of temperature	± (1.0%+0.005Ω)	JIS C 5201-1 4.19 Test temp. : –55°C to +125°C 5cyc
Damp heat, steady state	± (3.0%+0.005Ω)	JIS C 5201-1 4.24 40°C, 93%RH Test time : 56days
Endurance at 70°C	± (3.0%+0.005Ω)	JIS C 5201-1 4.25.1 70°C, Rated voltage 1.5h : ON – 0.5h : OFF Test time : 1,000h
Endurance	± (3.0%+0.005Ω)	JIS C 5201-1 4.25.3 155°C Test time : 1,000h to 1,048h
Component solvent resistance	± (0.5%+0.005Ω)	JIS C 5201-1 4.29 23°C±5°C Solvent : 2-propanol
Bend strength of the end face plating	Without open.	JIS C 5201-1 4.33

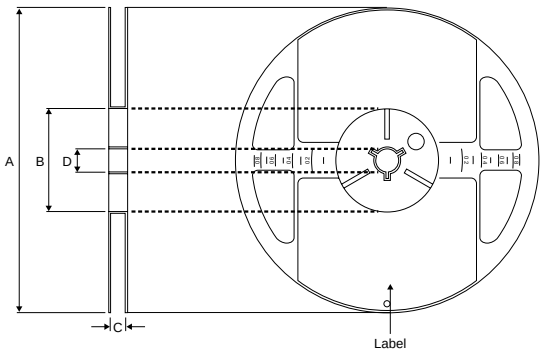
●Dimensions (Unit : mm)



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

●Packaging

Reel

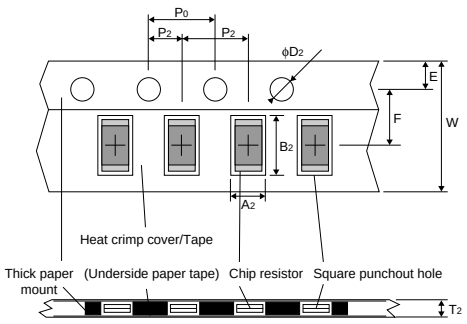


EIAJ ET-7200B compliant

(Unit: mm)

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

Taping



(Unit: mm)

W	F	E	A_2	B_2
8.0±0.3	3.5±0.05	1.75±0.1	$1.95^{+0.1}_{-0.05}$	$3.5^{+0.15}_{-0.05}$
D_2	P_2	P_2	P_2	T_2
$\phi 1.5^{+0.1}_{\ 0}$	4.0±0.1	4.0±0.1	2.0±0.05	Max. 1.1

●Part No. Explanation

Part No.

Resistance tolerance

F	±1%
J	±5%

Special part number

L	10Ω or less (class F) 1Ω or less (class J)
S	0.1Ω or less

Nominal resistance

Resistance code, 3 or 4 digits.

Resistance tolerance +Special P/N		Resistance code
FL,FS,JS	:	4 digits
JL	:	3 digits

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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