Thick film rectangular Low resistance series

MCR50 (5025 size (2010 size) : 1 / 2W)

●Features

1) Highly reliable chip resistor
   Ruthenium oxide dielectric offers superior resistance to the elements.
2) Electrodes not corroded by soldering
   Suitable for re-flow soldering.
3) ROHM resistors have approved ISO-9001 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

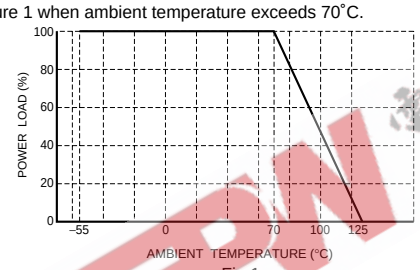
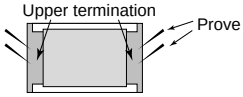
Item	Conditions	Specifications	
Rated power	Power must be derated according to the power derating curve in Figure 1 when ambient temperature exceeds 70˚C.  Fig.1	0.5W (1 / 2W) at 70°C	
Rated voltage	The voltage rating is calculated by the following equation. If the value obtained exceeds the limiting 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	2.23V(10Ω)
Nominal resistance	See Table 1.		
Operating temperature		–55°C to +125°C	

Table 1

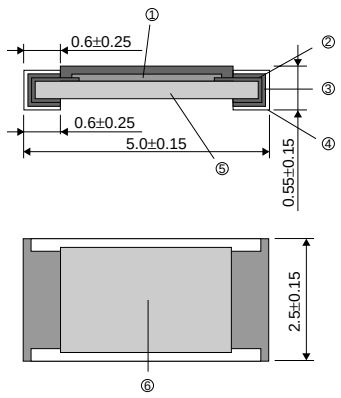
Resistance tolerance	Special code	Resistance range (Ω)	Resistance temperature coefficient (ppm / ˚C)
F (±1%)	L	0.15≤R≤9.1 (E24)	±250
	L	0.1≤R≤0.13 (E24)	400±200
	S	0.047≤R≤0.091 (E24)	500±300
J (±5%)	L	0.15≤R≤0.91 (E24)	±250
	L	0.1≤R<0.13 (E24)	400±200
	S	0.047≤R≤0.091 (E24)	500±300

•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 4.25.3 125°C Test time : 1,000h to 1,048h
Resistance to solvent	± (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 mechanical damage such as breaks.	JIS C 5201-1 4.33

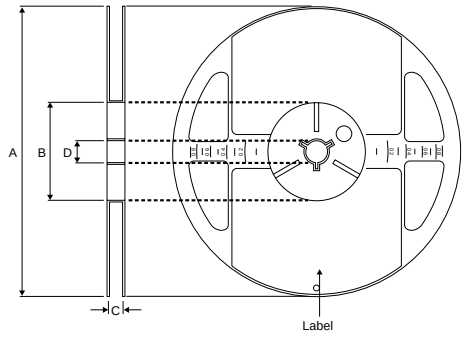
●Dimensions (Unit: mm)



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

●Packaging

Reel

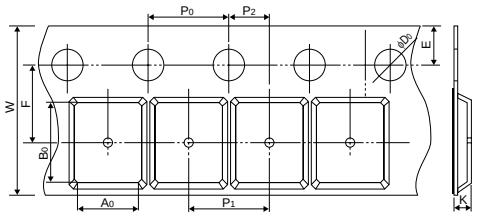


EIAJ ET-7200B compliant

(Unit : mm)

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

Taping



(Unit : mm)

W	F	E	A_0	B_0
12.0±0.3	5.5±0.05	1.75±0.1	3.4±0.2	5.6±0.2
D_0	P_0	P_1	P_2	K
$\phi 1.5^{+0.1}_{\ 0}$	4.0±0.1	4.0±0.1	2.0±0.05	Max. 1.1

●Part No. Explanation

M	C	R	5	0	J	Z	H	J	L				

Part No.

Resistance tolerance

F	±1%
J	±5%

Special part number

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

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%)			
MCR50	JZH	◎	◎	Embossed tape (4mm Pitch)	φ180mm (7in.)	4,000

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

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