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.

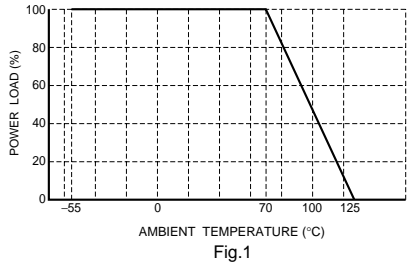Carefully check the specification sheet supplied with the product before using or ordering it.

●**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	
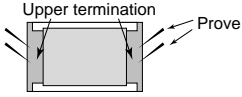
Table 1

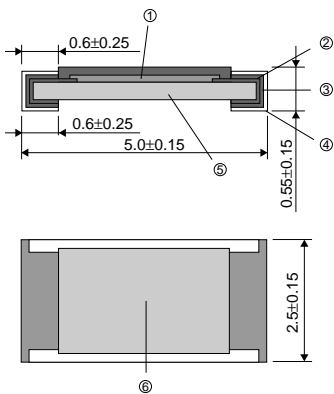| Resistance tolerance	Special code	Resistance range (Ω)		Resistance temperature coefficient (ppm / °C)
F (±1%)	L	0.15≤R≤9.1	(E24)	±250
	L	0.1≤R≤0.13	(E24)	400±200
	S	0.047≤R≤0.091	(E24)	500±300
J (±5%)	L	0.15≤R≤0.91	(E24)	±250
	L	0.1≤R<0.13	(E24)	400±200
	S	0.047≤R≤0.091	(E24)	500±300

●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.

Resistors

●**Characteristics**

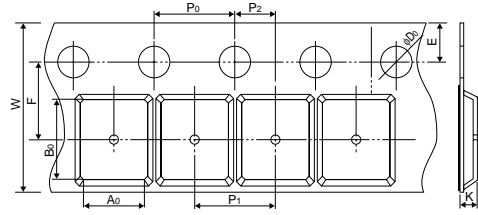| Item	Guaranteed value	Test conditions (JIS C 5201-1)
	Resistor type	
Resistance	J : ±5% F : ±1%	JIS C 5201-1 4.5 Load voltage : A Measuring method : measure upper termination by 4 proves. Upper termination — Prove
Variation of resistance with temperature	See Table.1	JIS C 5201-1 4.8 Measurement : +25 / −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
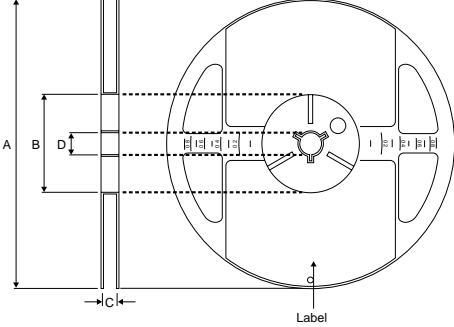
●**Dimensions** (Unit: mm)

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

Resistors

●**Packaging**

Reel	Taping

EIAJ ET-7200B compliant

Label

(Unit : mm)

A	B	C	D
φ180 $^{0}_{-1.5}$	φ60 $^{+1}_{0}$	13 $^{+1.0}_{0}$	φ13±0.2

(Unit : mm)

W	F	E	A₀	B₀
12.0±0.3	5.5±0.05	1.75±0.1	3.4±0.2	5.6±0.2
D₀	P₀	P₁	P₂	K
φ1.5 $^{+0.1}_{0}$	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

ROHM

The products listed in this document are designed to be used with ordinary electronic equipment or devices (such as audio visual equipment, office-automation equipment, communications devices, electrical appliances and electronic toys).

Should you intend to use these products with equipment or devices which require an extremely high level of reliability and the malfunction of with would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), please be sure to consult with our sales representative in advance.

About Export Control Order in Japan

Products described herein are the objects of controlled goods in Annex 1 (Item 16) of Export Trade Control Order in Japan.

In case of export from Japan, please confirm if it applies to "objective" criteria or an "informed" (by MITI clause) on the basis of "catch all controls for Non-Proliferation of Weapons of Mass Destruction.