

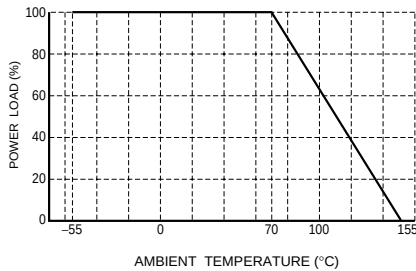
Thick film rectangular

MCR18 (3216 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) Leading the world in development and mass production.
Since start of production in 1976 (first in the world), this component has established a solid reputation as a general-purpose chip resistor.
- 5) ROHM resistors have approved ISO-9001 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	0.25W (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	200V
Nominal resistance	See Table 1.		
Operating temperature		-55°C to +155°C	

Resistors

Jumper type

Resistance	Max. 50mΩ
Rated current	2A
Operating temperature	-55°C to +155°C

Table 1

Resistance tolerance	Resistance range (Ω)	Resistance temperature coefficient (ppm / °C)
F (±1%)	0.1 ≤ R < 0.15 (E24)	400±200
	0.15 ≤ R < 10 (E24)	±250
	10 ≤ R ≤ 2.2M (E24,96)	±100
J (±5%)	0.1 ≤ R < 0.15 (E24)	400±200
	0.15 ≤ R < 1 (E24)	±250
	1.0 ≤ R < 2.2 (E24)	500±350
	2.2 ≤ R < 10 (E24)	±500
	10 ≤ R ≤ 10M (E24)	±200

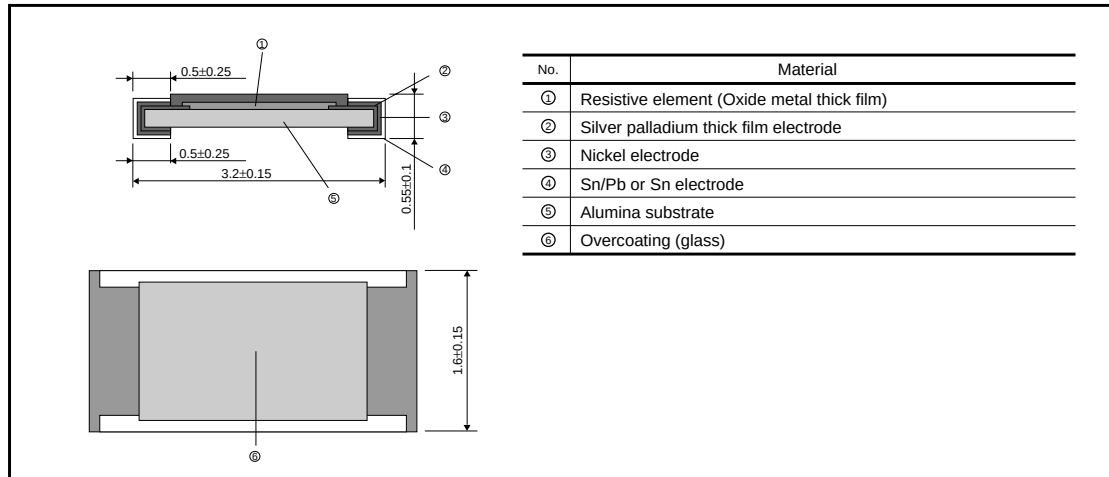
- Before using components in circuits where they will be exposed to transients such as pulse loads (short-duration, high-level loads), be certain to evaluate the component in the mounted state. In addition, the reliability and performance of this component cannot be guaranteed if it is used with a steady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

● Characteristics

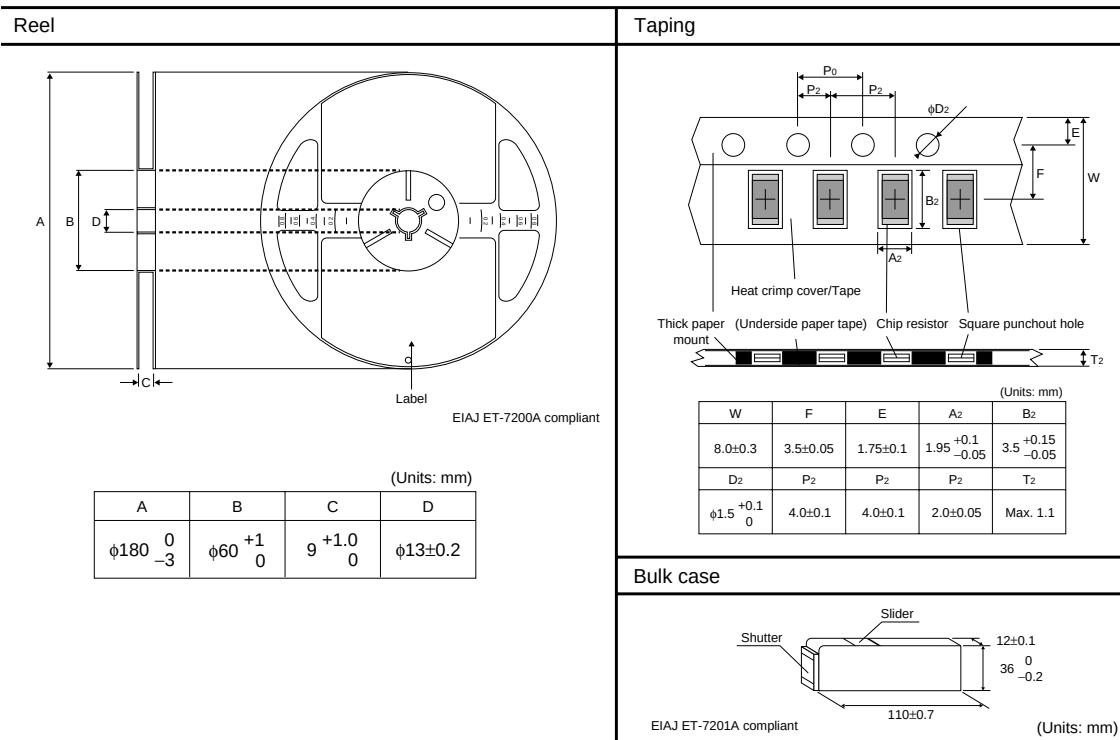
Item	Guaranteed value		Test conditions (JIS C 5201-1)
	Resistor type	Jumper type	
Resistance	J : ±5% F : ±1%	Max. 50mΩ	JIS C 5201-1 4.5
Variation of resistance with temperature	See Table.1		JIS C 5201-1 4.8 Measurement : -55 / +25 / +125°C
Overload	± (2.0%+0.1Ω)	Max. 50mΩ	JIS C 5201-1 4.13 Rated voltage (current) ×2.5, 2s. Limiting Element Voltage×2 : 400V
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%+0.05Ω) No remarkable abnormality on the appearance.	Max. 50mΩ	JIS C 5201-1 4.18 Soldering condition : 260±5°C Duration of immersion : 10±1s.
Rapid change of temperature	± (1.0%+0.05Ω)	Max. 50mΩ	JIS C 5201-1 4.19 Test temp. : -55°C~+125°C 5cyc
Damp heat, steady state	± (3.0%+0.1Ω)	Max. 100mΩ	JIS C 5201-1 4.24 40°C, 93%RH Test time : 1,000h~1,048h
Endurance at 70°C	± (3.0%+0.1Ω)	Max. 100mΩ	JIS C 5201-1 4.25.1 Rated voltage (current), 70°C 1.5h : ON – 0.5h : OFF Test time : 1,000h~1,048h
Endurance	± (3.0%+0.1Ω)	Max. 100mΩ	JIS C 5201-1 4.25.3 155°C Test time : 1,000h~1,048h
Resistance to solvent	± (1.0%+0.05Ω)	Max. 50mΩ	JIS C 5201-1 4.29 23±5°C, Immersion cleaning, 5±0.5min. Solvent : 2-propanol
Bend strength of the end face plating	± (1.0%+0.05Ω) Without mechanical damage such as breaks.	Max. 50mΩ	JIS C 5201-1 4.33

Resistors

●External dimensions (Units : mm)



●Packaging



3-digit or 4-digit IEC coding system

Part No.

Nominal resistance

Resistance tolerance

Special part number

Part No.	Code	Packaging	Standard ordering unit(pcs)
MCR18	EZH	Paper tape	5,000
	PZHI	Bulk case	5,000

F	±1%	J	±5%
Specify "J" for jumper also.			

Blank	10Ω or more (F class) 1Ω or more (J class)
L	Up to 10Ω (F class) Up to 1Ω (J class)

JIS C 5201-1 4.4.2
SAMPLE SIZE : n=20pcs
MICROMETER

RESISTANCE (Ω)	LENGTH (mm)
0.1	1.50
0.1	1.52
0.1	1.54
0.1	1.56
0.1	1.58
0.1	1.60
0.1	1.62
0.1	1.64
0.1	1.66
0.1	1.68
0.1	1.70
0.1	1.72
0.1	1.74
0.1	1.76
0.1	1.78
0.1	1.80
0.1	1.82
0.1	1.84
0.1	1.86
0.1	1.88
0.1	1.90
1	1.50
1	1.52
1	1.54
1	1.56
1	1.58
1	1.60
1	1.62
1	1.64
1	1.66
1	1.68
1	1.70
1	1.72
1	1.74
1	1.76
1	1.78
1	1.80
1	1.82
1	1.84
1	1.86
1	1.88
1	1.90
10	1.50
10	1.52
10	1.54
10	1.56
10	1.58
10	1.60
10	1.62
10	1.64
10	1.66
10	1.68
10	1.70
10	1.72
10	1.74
10	1.76
10	1.78
10	1.80
10	1.82
10	1.84
10	1.86
10	1.88
10	1.90
100	1.50
100	1.52
100	1.54
100	1.56
100	1.58
100	1.60
100	1.62
100	1.64
100	1.66
100	1.68
100	1.70
100	1.72
100	1.74
100	1.76
100	1.78
100	1.80
100	1.82
100	1.84
100	1.86
100	1.88
100	1.90
1k	1.50
1k	1.52
1k	1.54
1k	1.56
1k	1.58
1k	1.60
1k	1.62
1k	1.64
1k	1.66
1k	1.68
1k	1.70
1k	1.72
1k	1.74
1k	1.76
1k	1.78
1k	1.80
1k	1.82
1k	1.84
1k	1.86
1k	1.88
1k	1.90
10k	1.50
10k	1.52
10k	1.54
10k	1.56
10k	1.58
10k	1.60
10k	1.62
10k	1.64
10k	1.66
10k	1.68
10k	1.70
10k	1.72
10k	1.74
10k	1.76
10k	1.78
10k	1.80
10k	1.82
10k	1.84
10k	1.86
10k	1.88
10k	1.90
100k	1.50
100k	1.52
100k	1.54
100k	1.56
100k	1.58
100k	1.60
100k	1.62
100k	1.64
100k	1.66
100k	1.68
100k	1.70
100k	1.72
100k	1.74
100k	1.76
100k	1.78
100k	1.80
100k	1.82
100k	1.84
100k	1.86
100k	1.88
100k	1.90
1M	1.50
1M	1.52
1M	1.54
1M	1.56
1M	1.58
1M	1.60
1M	1.62
1M	1.64
1M	1.66
1M	1.68
1M	1.70
1M	1.72
1M	1.74
1M	1.76
1M	1.78
1M	1.80
1M	1.82
1M	1.84
1M	1.86
1M	1.88
1M	1.90
10M	1.50
10M	1.52
10M	1.54
10M	1.56
10M	1.58
10M	1.60
10M	1.62
10M	1.64
10M	1.66
10M	1.68
10M	1.70
10M	1.72
10M	1.74
10	

JIS C 5201-1 4.4.2
SAMPLE SIZE : n=20pcs
MICROMETER

Resistance (Ω)	Width (nm)
0.1	1.58
0.1	1.56
0.1	1.55
0.1	1.54
1	1.58
1	1.56
1	1.55
1	1.54
10	1.57
10	1.56
10	1.55
10	1.54
100	1.57
100	1.56
100	1.55
100	1.54
1k	1.57
1k	1.56
1k	1.55
1k	1.54
10k	1.57
10k	1.56
10k	1.55
10k	1.54
100k	1.59
100k	1.58
100k	1.57
100k	1.56
1M	1.56
1M	1.55
1M	1.54
1M	1.53
10M	1.57
10M	1.56
10M	1.55
10M	1.54

JIS C 5201-1 4.4.2
SAMPLE SIZE : n=20pcs
MICROMETER

Resistance (Ω)	Thickness (mm) - Solid Circles	Thickness (mm) - Open Circles
0.1	0.56	0.55
1	0.57	0.55
10	0.58	0.55
100	0.58	0.55
1k	0.57	0.55
10k	0.57	0.55
100k	0.57	0.55
1M	0.58	0.54
10M	0.58	0.54

JIS C 5201-1 4.5
SAMPLE SIZE : n=20pcs
20°C 65%RH

DC RESISTANCE (%)

RESISTANCE (Ω)

JIS C 5201-1 4.8
 SAMPLE SIZE : n=10pcs
 ○ 25°C / -55°C
 ● 25°C / 125°C

TEMPERATURE COEFFICIENT (ppm/°C)

RESISTANCE (Ω)

JIS C 5201-1 4.13
 SAMPLE SIZE : n=10pcs
 RATED VOLTAGE×2.5TIMES : 2s
 LIMITING ELEMENT VOLTAGE×2 : 400V

RESISTANCE (Ω)	ΔR/R (%)
0.1	0.2
1	0.2
10	0.0
100	-0.1
1k	-0.1
10k	-0.1
100k	-0.4
1M	-0.2
10M	0.0

Fig.7 Overload

Resistors

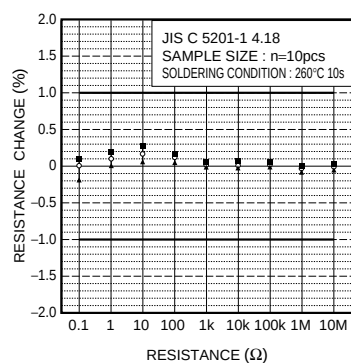


Fig.8 Resistance to soldering heat

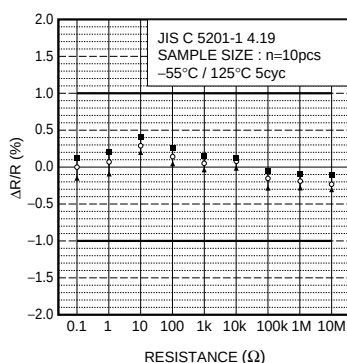


Fig.9 Rapid change of temperature

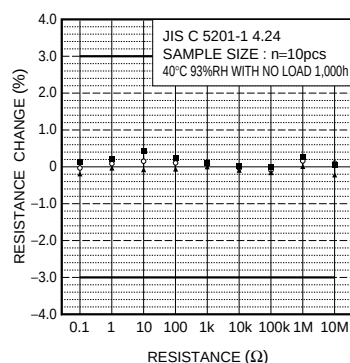


Fig.10 Damp heat, steady state

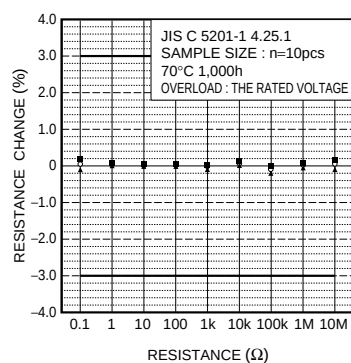


Fig.11 Endurance (at 70°C)

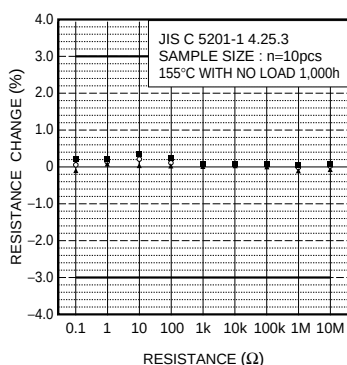


Fig.12 Endurance

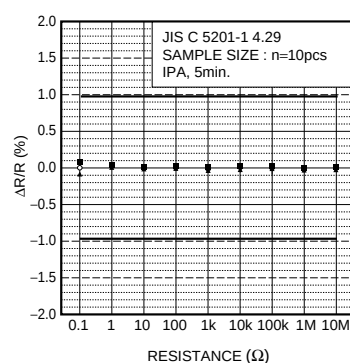


Fig.13 Resistance to solvents

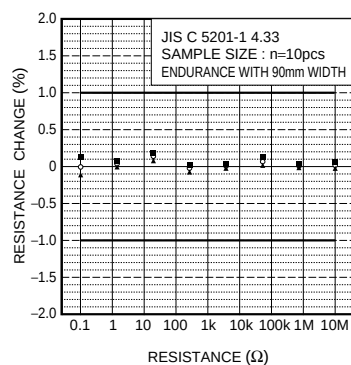


Fig.14 Bend strength of the end face plating



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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