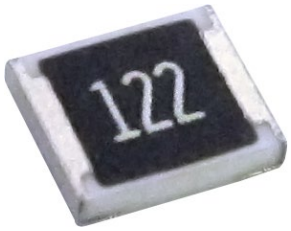
Thick Film Chip Resistor- JZC

APPLICATION

- Entertainment: Stereo, TV tuners, Tape recorder
- Appliance: Air conditioner, Refrigerator
- Computer & relative products: Main board, PDA
- Communication equipment: Cell phone, Fax machine
- Power equipment: Power supply, II illumination equipment
- Measuring instrument: Electric meter, Navigation equipment

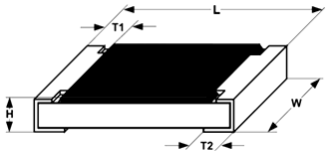


FEATURES

- Small size and light weight
- Reliability, high quality

Dimension

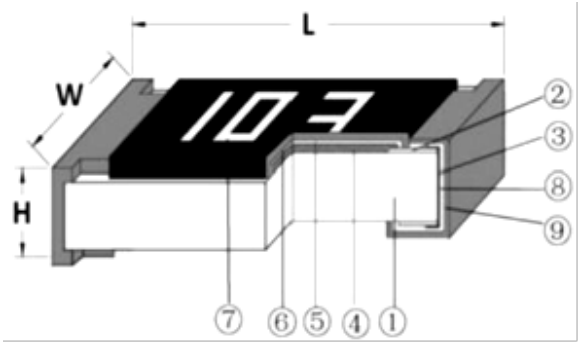
Dimension



(unit):mm

(Type)	L	W	H	T1	T2
1210	3.10±0.10	2.50±0.15	0.55±0.10	0.45±0.15	0.50±0.20
1218	3.10±0.10	4.60±0.10	0.55±0.10	0.45±0.20	0.40±0.20
1812	4.50±0.20	3.10±0.20	0.55±0.10	0.55±0.20	0.70±0.20
2010	5.00±0.10	2.50±0.15	0.55±0.10	0.45±0.15	0.50±0.20
2512	6.35±0.10	3.10±0.15	0.55±0.10	0.60±0.20	0.90±0.20

Construction



NO.	construction	Major material
1	Ceramic substrate	Al_2O_3
2	Conductive layer（Top）	Ag
3	Side conductive layer	Nicr
4	Resistive layer	RuO_2+glass
5	Inner protective layer	Glass
6	Outer Protective layer	Epoxy
7	Marking	Epoxy
8	Ni plating layer	Ni
9	Sn plating layer	Matte Tin
10	Conductive layer (Back)	Ag

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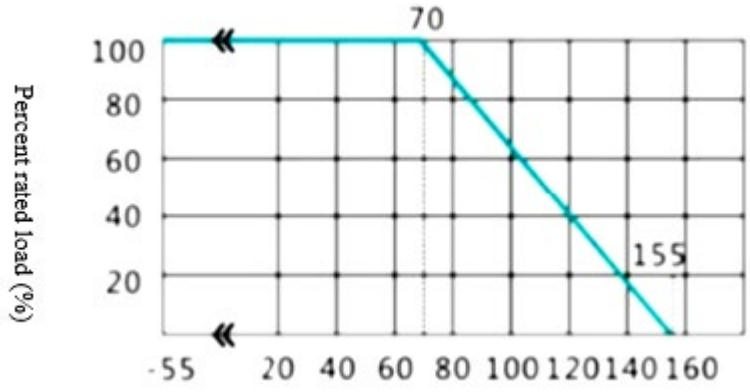
Derating Curve

Temperature usage rang	-55℃~+155℃
Describe	If the ambient temperature exceeds 70°C to 155℃, the power can be revised according to the curve in the following figure.
Power Attenuation curve	

Electrical characteristics

Type	1210	1218	1812	2010	2512
Rated power	1/2W	1W	3/4W	3/4W	1W
Max Working Voltage	200V	200V	200V	200V	200V
Max Overload Voltage	400V	500V	400V	400V	400V
Dielectric Withstanding Voltage	500V	500V	500V	500V	500V
Resistance Value of Jumper ±1%	<30mΩ	<30mΩ	<30mΩ	<30mΩ	<30mΩ
Resistance Value of Jumper ±5%	<50mΩ	<50mΩ	<50mΩ	<50mΩ	<50mΩ
Rated Current of Jumper	2A	6A	2A	2A	2A
Max Current of Jumper	10A	10A	10A	10A	10A

Remark: The rated voltage is calculated by the following formula

E= $\sqrt{RP}$

E:（Rated Voltage） (V)

P:（Rated Power ） (W)

R:（Resistance ） (ohm)

In case the value calculated by the formula exceed the maximum working voltage as above table 8, the maximum working voltage shall be regarded as rated voltage.

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Standard Electrical Specifications

Type	(Power Rating at 70℃)	Max. RCWV	Max. Overload Voltage	T.C.R. (PPM℃)	Resistance Range
1210	1/2W	200V	400V	± 200	1Ω~10Ω
					10MΩ~22MΩ
				± 100	10Ω~10MΩ
1218	1W	200V	500V	± 200	1Ω~10Ω
				± 100	10Ω~1MΩ
1812	3/4W	200V	400V	± 200	1Ω~10Ω
				± 100	10Ω~10MΩ
2010	3/4W	200V	400V	± 200	1Ω~10Ω
					10MΩ~22MΩ
				± 100	10Ω~10MΩ
2512	1W	200V	400V	± 200	1Ω~10Ω
					10MΩ~22MΩ
				± 100	10Ω~10MΩ

Performance Specifications

Item	Test Methods	Test Conditions	Specification
Temperature Coefficient	JIS C 5201 4.8 IEC60115-1-4.8	TCR= $(R-R_0) / (t-t_0) R_0 \times 10^6$ (ppm) R_0: Resistance at room temperature R : Resistance at 125℃ or -55℃, t_0: room temperature t : test temperature 125℃ or -55℃	As SPEC
Short-time overload	JIS C 5201 4.13 IEC60115-1-4.13	Applied 2.5 times of rated voltage for 5 second. Measure the variation of resistance.	0.5%、1%: ±(1.0%+0.05Ω) 5%: ±(2.0%+0.05Ω)
Solderability	JIS C 5201 4.17 IEC60115-1-4.17	Dip the terminal in a flux and then dip into a soldering bath at 245±5℃ for 3±0.5sec.	(＞95% coverage)
Resist to soldering heat	JIS C 5201 4.18 IEC 60115-1-4.18	Dip the terminal in a flux and then dip into a soldering bath at 260±5℃ for 10±0.5sec. Measure the variation of resistance.	± (1.00% +0.05Ω)
Insulation resistance	JIS C 5201 4.6 IEC60115-1-4.6	Applied the dielectric withstanding voltage on the center of body for 60±5seconds. Then measure insulation resistance.	>10GΩ

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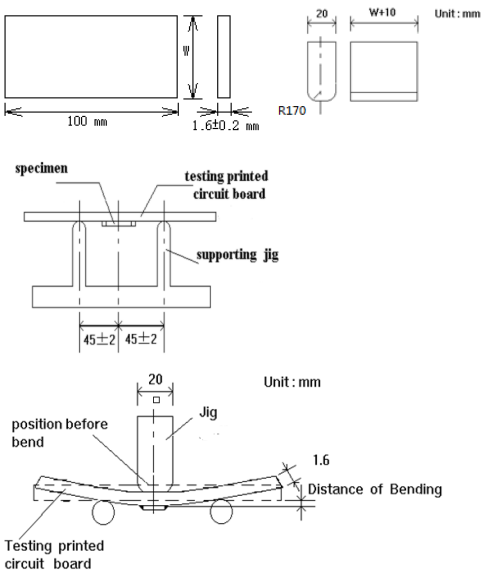
Performance Specifications

Item	Test Methods	Test Conditions	Specification
Dielectric withstanding voltage	JIS C 5201 4.7 IEC60115-1-4.7	Applied the dielectric withstanding voltage on the center of body for60±5seconds.	No evidence of flashover, mechanical damage arcing or insulation breakdown
Terminal bending	JIS C 5201 4.33 IEC60115-1-4.33	Specimen shall be mounted on test board, then bend the board and maintained for 20±1s. the distance of bending is 5+0.2/0 mm for resistors which size no larger than 1206 or 2+0.2/0 mm which size larger than 1206. Measure the variation of resistance. (test board) (jig) 	±(1.00% +0.05Ω)
Rapid temperature changes	JIS C 5201 4.19 IEC60115-1-4.19	Put specimen in a chamber which temperature can be T1: -55±3℃; T2: 155±3℃/125±3℃, 30min, repeated 300 cycles. Measure the variation of resistance.	0.5%、1%: ±(1.0%+0.05Ω) 5%: ±(2.0%+0.05Ω)
Humidity	JIS C 5201 4.24 IEC60115-1-4.24	Put the specimen in a chamber at 40±2℃ temperature and 90~95% relative humidity, then applied rated voltage for1.5H and rested for 0.5H repeatedly till total test time is $1000^{+48}/_{-0}$ H. Measure the variation of resistance.	0.5%、1%: ±(1.0%+0.05Ω) 5%: ±(2.0%+0.05Ω)

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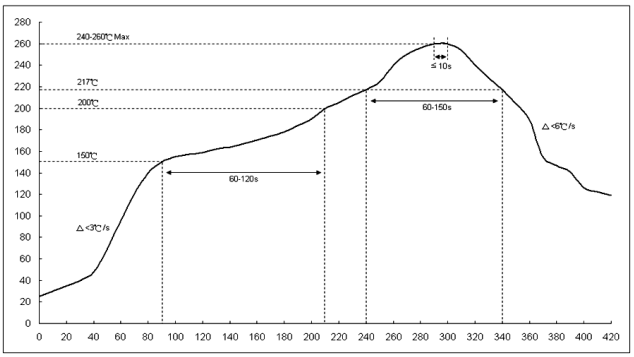
Performance Specifications

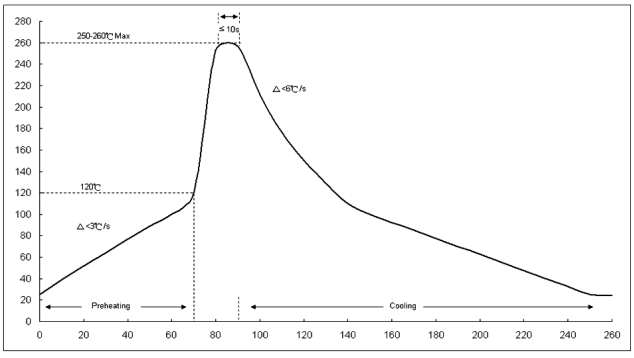
Item	Test Methods	Test Conditions	Specification
Load life	JIS C 5201 4.25.1 IEC 60115-1-4.25.1	Put the specimen in a chamber at 70±2℃ temperature, ON TIME:1.5H , OFF TIME:0.5H, and applied rated voltage for 1000 $^{+24}/_{-0}$H. Measure the variation of resistance.	0.5% 、 1% : ±(1.0%+0.05Ω) 5%: ±(2.0%+0.05Ω)
Moisture resistance	MIL-STD-202 METHOD 106	25°C~65°C,90~100%RH, 2.5H; 65°C 90~100%RH, 3H; 65°C~25°C 80~100%RH, 2.5H, 10 cycles, Measurement at 24±4 hours after test conclusion.	0.5% 、 1% : ±(1.0%+0.05Ω) 5%: ±(2.0%+0.05Ω)

Soldering

Recommend reflow soldering profile



Recommend wave soldering profile



Hand soldering temperature

The iron temperature is 350±10℃, hand soldering time less than 3S. Avoid solder iron tip direct touch the components body

Please visit our website to get more update data, those data & specification are subject to change without notice.