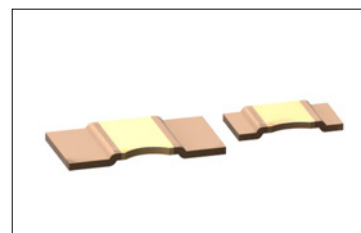


●Features

- 1) High power class up to 4 to 5W.
- 2) The lineup of ultra-low resistance value : correspondence from 0.2mΩ
- 3) Excellent temperature coefficiency.
- 4) Ideal for current detection under high current circuit.



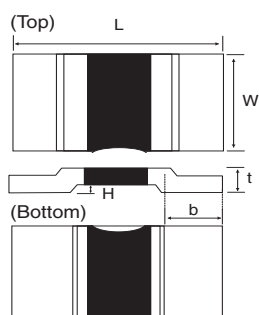
●Products List

Part No.	Size		Rated power (70°C)	Tolerance	Resistance range (mΩ)	Temperature* coefficient (ppm / °C)	Operating Temperature Range (°C)
	(mm)	(inch)					
PSR400	10×5.2	3921	4W	F (±1%)	0.3,0.5	±175	-55 to +170
					1.0,2.0,3.0	±75	
PSR500	15×7.75	5931	5W	F (±1%)	0.2	±225	
					0.3,0.4,0.5	±150	
					1.0,2.0	±75	

*(+20°C to +125°C)

●Chip Resistor Dimensions and Materials

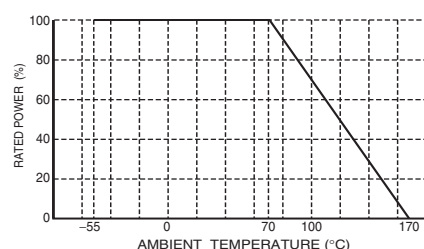
(Unit : mm)



Part No.	L	W	H	b	Resistance	t	Material
PSR400	10±0.3	5.2±0.3	0.5±0.1	2.0±0.6	0.3mΩ	1.85±0.15	Cu / Mn
					0.5mΩ	1.30±0.15	
					1.0mΩ	0.90±0.15	Ni / Cr
					2.0mΩ	1.15±0.15	
					3.0mΩ	0.90±0.15	
PSR500	15±0.3	7.75±0.3	0.5±0.1	4.0±0.6	0.2mΩ	1.85±0.15	Cu / Mn
					0.3mΩ	1.40±0.15	
					0.4mΩ	1.15±0.15	
					0.5mΩ	1.05±0.15	
					1.0mΩ	1.35±0.15	Ni / Cr
					2.0mΩ	0.90±0.15	

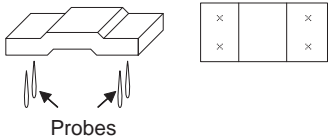
●Derating Curve

When the ambient temperature exceeds 70°C, power dissipation must be adjusted according to the derating curves below.



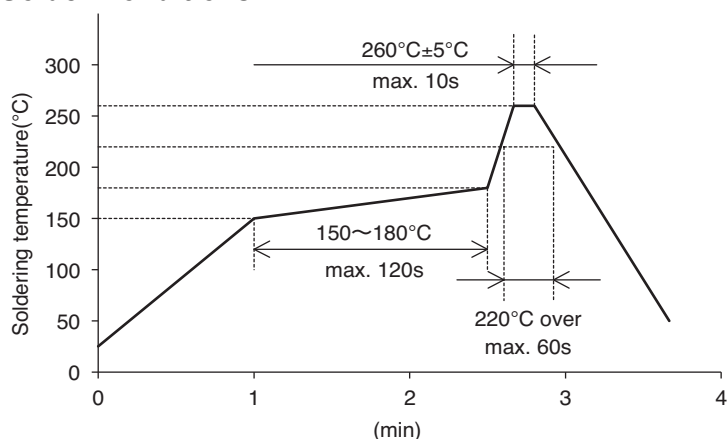
Design and specifications are subject to change without notice.
Carefully check the specification sheet supplied with the product before using or ordering it.

●Characteristics

Test Items	Guaranteed Value	Test Conditions
	Resistor Type	
Resistance	F : $\pm 1\%$	Measuring method : 2probe per terminal 
Variation of resistance with temperature	See P1	Measurement : $+20/+125$
Overload	$\pm 0.5\%$	Rated power $\times 5,5s$
Solderability	A new uniform coating of minimum of 95% of the surface being immersed an no soldering da a	Rosin- Ethanol solution(25% weight) Soldering condition : $245\pm 5^{\circ}\text{C}$ Duration of immersion : $2.0\pm 0.5s$.
Resistance to soldering heat	$\pm 1.0\%$ No remarkable abnormality on the appearance.	Soldering condition : $260\pm 5^{\circ}\text{C}$ Duration of immersion : $10\pm 1s$
Rapid change of temperature	$\pm 1.0\%$	Test temp. : -55°C to $+155^{\circ}\text{C}$ 5cycle
Damp heat, steady state	$\pm 0.5\%$	40°C , 93%RH (Relative Humidity) Test time : 1,000h to 1,048h
Endurance at 70°C	$\pm 1.0\%$	70°C Rated power 1.5h : ON – 0.5h : OFF Test time : 1,000h to 1,048h
Endurance at 170°C	$\pm 1.0\%$	70°C Test time : 1,000h to 1,048h
Component Solvent Resistance	$\pm 0.5\%$	$23\pm 5^{\circ}\text{C}$ Solvent : 2-propanol
Bend strength of the end face plating	Without open	—

Compliance Standard(s) : IEC60115-8
JISC 5201-1

●Solder Conditions



Recommended solder profile			
Reflow			
Temperature($^{\circ}\text{C}$)	260	220	150 to 180
Time(s)	Peak 10s Max.	60s	120s

(Note) About flow soldering

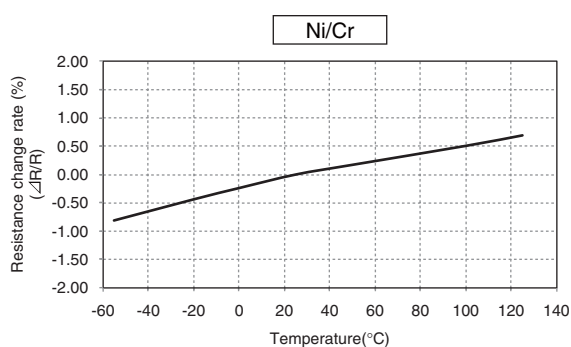
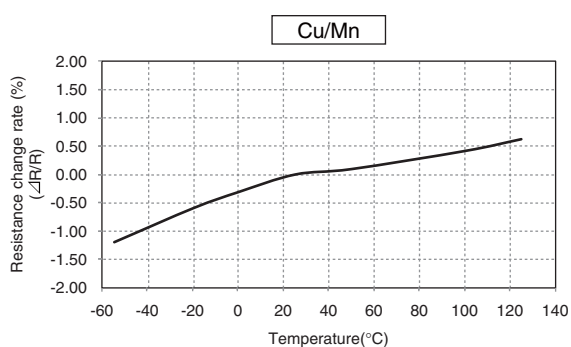
- ① This part has the structure that resistive element is exposed. Therefore, the solder may be attached to resistive element if Flow soldering is used, and resistance value may be outside of the spec.
- ② This part is ultra low ohmic resistor. If the solder is not equally attached on the whole area between the bottom electrode and land pattern, resistance value may be outside of the spec.

<Reference data>

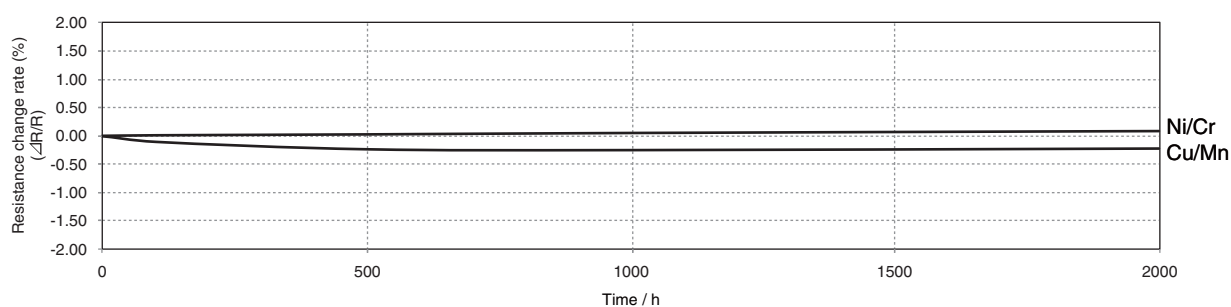
●Characteristics

Type	Resistance Value (mΩ)	Thermal resistivity of product (°C /W)	Thermal EMF (μV/°C)	Inductance (nH)
PSR400	0.3	4.5	2μV/°C Max.	< 3nH
	0.5	8		
	1	15		
	2	16		
	3	24		
PSR500	0.2	3		
	0.3	4.5		
	0.4	7		
	0.5	8		
	1	8		
	2	16		

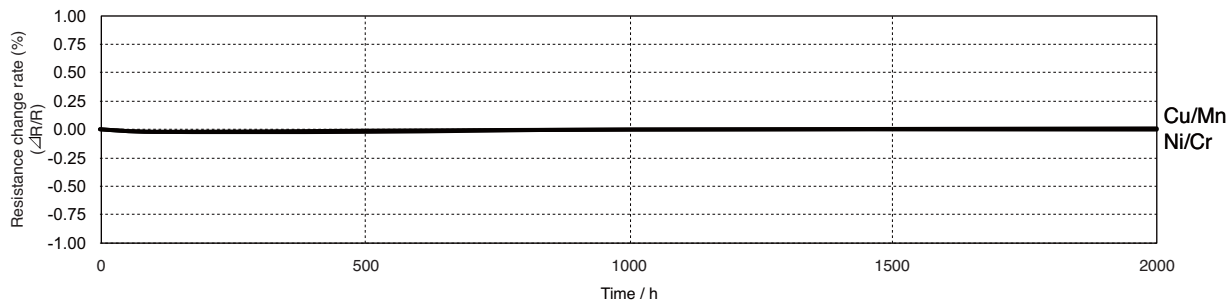
●Variation of resistance with temperature (Reference temperature is 20°C)



●Endurance (170°C with no load)

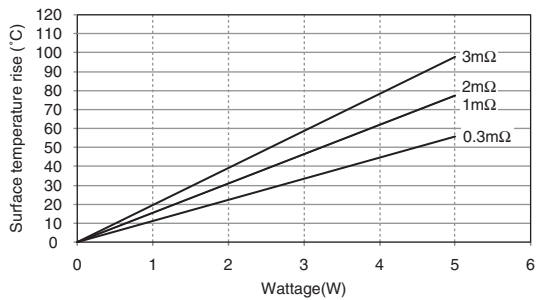


● Low Temperature exposure

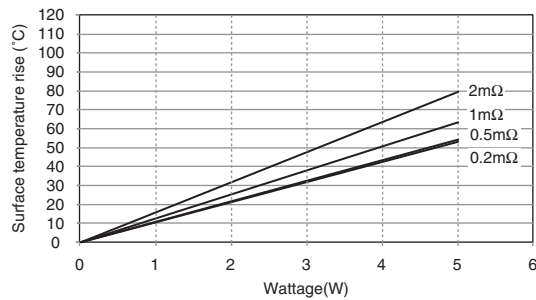


● Surface Temp Rise (Ta=25°C)

PSR400



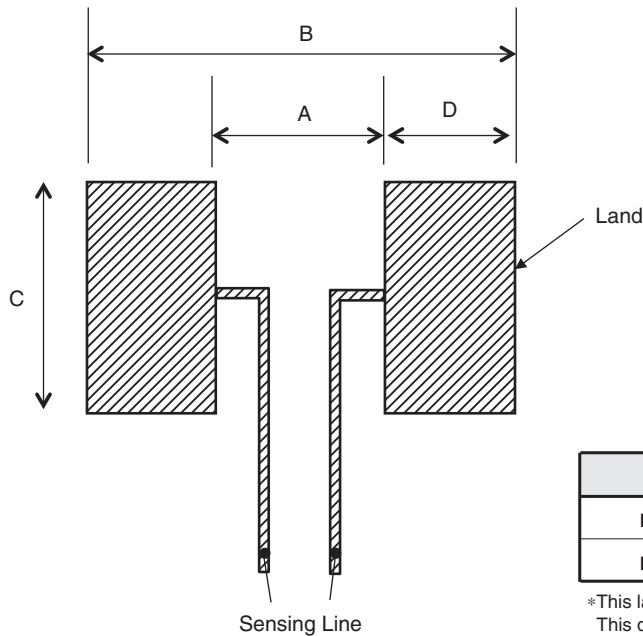
PSR500



Measurement condition of this data was taken out from board created under our regulation.
Product with highest temperature was selected for the measurement.

Please contact us about test board and test conditions.

● Land Pattern



Type	A	B	C	D
PSR500	5.60	16.00	8.75	5.20
PSR400		11.00	6.20	2.70

*This land pattern is only for standard pattern.
This does not guarantee the characteristics of the parts

●Part Number Description

Part No.

PSR

(Ultra low ohmic metal plate / High power type shunt Resistors)

Size (mm [inch])

400 (10×5.2 [3921])
500 (15×7.75 [5931])

Tolerance

F 1%

Special part code

C 0.2mΩ

D 0.3mΩ

E 0.4mΩ

F 0.5mΩ

H 1.0mΩ

J 2.0mΩ

L 3.0mΩ

Nominal Resistance

Resistance code 4 digits.

tolerance

Resistance code

F : 4 digits

Resistance

Tolerance

F

0.2mΩ 0L20

0.3mΩ 0L30

0.4mΩ 0L40

0.5mΩ 0L50

1.0mΩ 1L00

2.0mΩ 2L00

3.0mΩ 3L00

Packaging Specifications code

Part No.	Code	Packaging specifications	Basic ordering unit (pcs)
PSR400	ITQ	Embossed tape (8mm Pitch)	3,000
PSR500	HTQ	Embossed tape (12mm Pitch)	2,000

●Tape Dimensions

■Embossed Tape

(Unit : mm)

Part No.	W	F	E	A0	Bo
PSR400	16.0±0.2	7.5±0.1	1.75±0.1	5.7±0.2	10.5±0.2
PSR500	24.0±0.2	11.5±0.1	1.75±0.1	8.3±0.2	15.6±0.2

Part No.	D0	P0	P1	P2	K
PSR400	φ1.5 ^{+0.1} ₀	4.0±0.1	8.0±0.1	2.0±0.1	2.3±0.1
PSR500	φ1.5 ^{+0.1} ₀	4.0±0.1	12.0±0.1	2.0±0.1	2.3±0.1

●Reel Dimensions

label

ACCORDING TO EIAJ ET-7200A
(Unit : mm)

Part No.	A	B	C	D
PSR400	φ330±2.00	φ100±1.00	φ17.4±1.0	φ13.00±0.20
PSR500			φ25.4±1.0	

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2015.07 - Rev.E

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