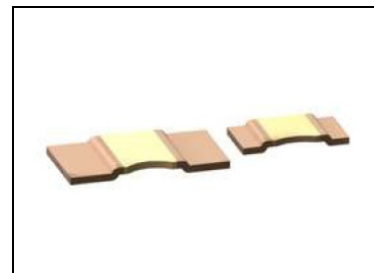


● Features

- 1) High power max 15W
- 2) Ultra low resistance range(0.1mΩ or more).
- 3) Excellent TCR characteristic
- 4) Convex structure
- 5) ROHM resistors have obtained ISO9001 / IATF16949 certification.
- 6) Corresponds to AEC Q-200.



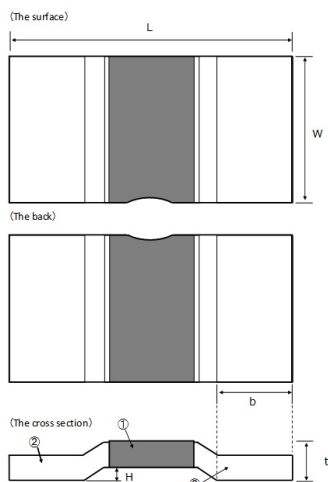
● Products list

Part No.	Size		Resistance (mΩ)	Tolerance	Special code	Rated power (Terminal temperature T _k)		Temperature coefficient* (ppm/°C)	Operating temperature range (°C)	Automotive grade available
	(mm)	(inch)				Low temperature rating P	High temperature rating P			
PSR100	6432	2512	0.3	F (±1%)	D	8W(75°C)	4W(140°C)	0 ~ +150	-65 ~ +175	Yes
			0.5		F	8W(75°C)	4W(140°C)	0 ~ +100		
			1.0		H	8W(75°C)	4W(140°C)	0 ~ +50		
			2.0		J	6W(75°C)	4W(140°C)			
			3.0		L	4W(75°C)	3W(140°C)			
PSR400	10×5.2	3921	0.2	F (±1%)	C	12W(75°C)	5W(130°C)	125 ±50	-65 ~ +175	Yes
			0.3		D	10W(75°C)	5W(130°C)	0 ~ +100		
			0.5		F	10W(75°C)	5W(130°C)			
			1.0		H	8W(75°C)	5W(130°C)	0 ~ +75		
			2.0		J	6W(75°C)	4W(115°C)			
			3.0		L	5W(70°C)	3W(115°C)			
PSR500	15×7.75	5931	0.1	F (±1%)	B	15W(75°C)	10W(120°C)		200 ±50	-65 ~ +175
			0.2		C	15W(75°C)	10W(120°C)	0 ~ +150		
			0.3		D	10W(75°C)	7W(120°C)	0 ~ +150		
			0.4		E	10W(75°C)	7W(120°C)			
			0.5		F	10W(75°C)	7W(120°C)			
			1.0		H	10W(75°C)	6W(120°C)	0 ~ +75		
			2.0		J	7W(70°C)	4W(115°C)			

* (+20°C to +175°C)

● Chip resistor dimensions and materials

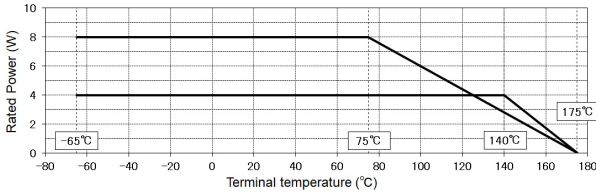
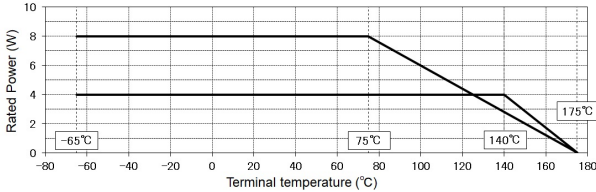
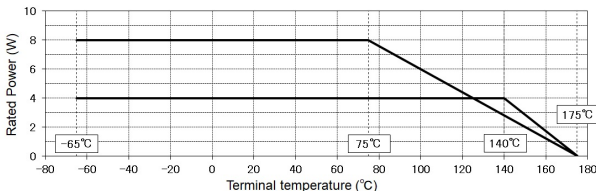
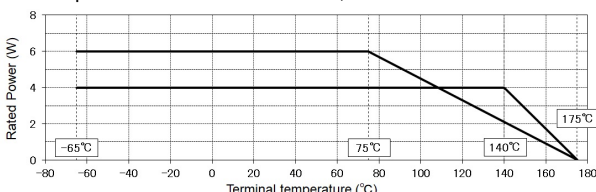
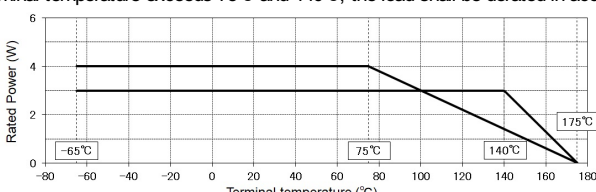
(Unit : mm)



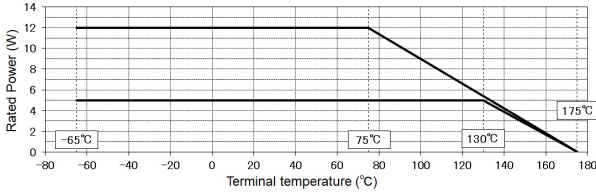
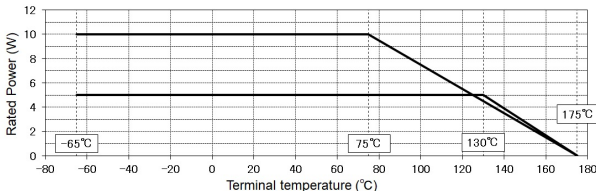
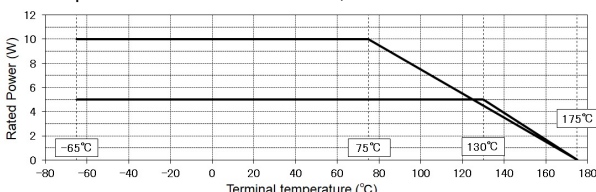
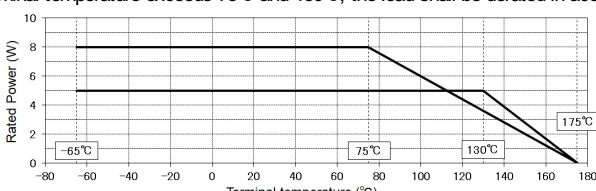
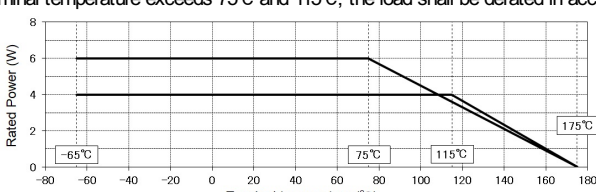
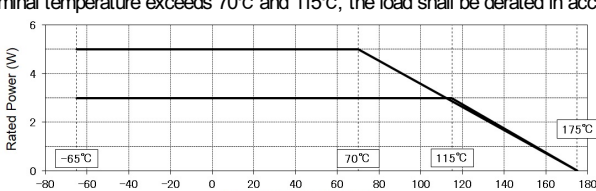
Part No.	Resistance	L	W	t	H	b	Material
PSR100	0.3 mΩ	6.35 ±0.15	3.05 ±0.25	1.45 ±0.15	0.35 ±0.15	1.12 ±0.3	Cu/Mh
	0.5 mΩ			1.15 ±0.15			
	1.0 mΩ			0.75 ±0.15			N/Cr
	2.0 mΩ			1.00 ±0.15			
	3.0 mΩ			0.75 ±0.15			
PSR400	0.2 mΩ	10.0 ±0.3	5.2 ±0.3	1.90 ±0.15	0.5 ±0.15	2.0 ±0.6	Cu/Mh
	0.3 mΩ			1.85 ±0.15			
	0.5 mΩ			1.30 ±0.15			
	1.0 mΩ			0.90 ±0.15			N/Cr
	2.0 mΩ			1.10 ±0.15			
	3.0 mΩ			0.90 ±0.15			
PSR500	0.1 mΩ	15.0 ±0.3	7.75 ±0.3	1.96 ±0.15	0.5 ±0.15	4.0 ±0.6	Cu/Mh
	0.2 mΩ			1.85 ±0.15			
	0.3 mΩ			1.40 ±0.15			
	0.4 mΩ			1.15 ±0.15			
	0.5 mΩ			1.05 ±0.15			
	1.0 mΩ			1.35 ±0.15			N/Cr
	2.0 mΩ			0.90 ±0.15			

● Derating Curve

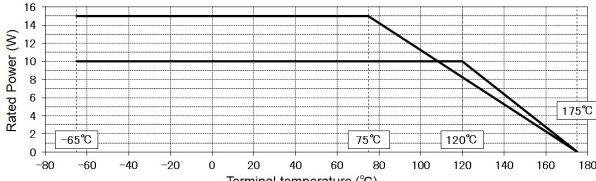
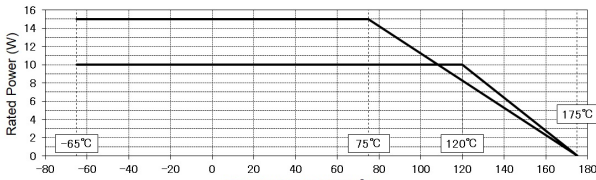
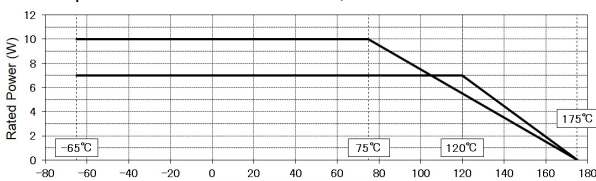
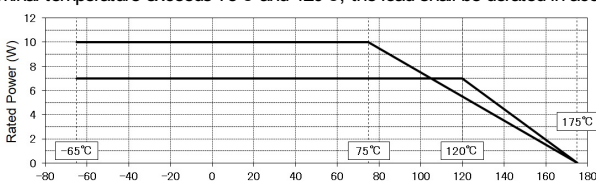
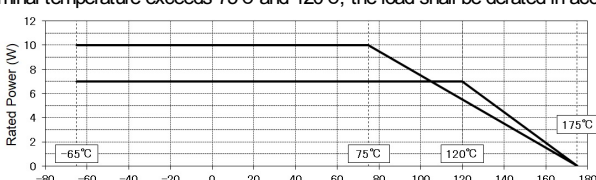
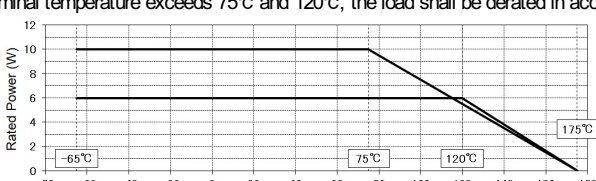
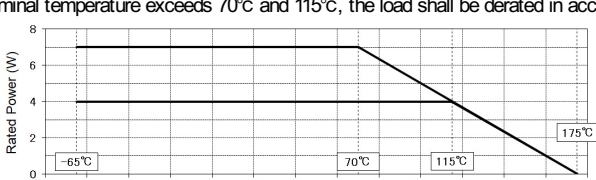
■ PSR100

Items	Conditions	Specifications
Rated power 0.3mΩ	When the terminal temperature exceeds 75°C and 140°C, the load shall be derated in accordance with Fig.1 	$P_{75^{\circ}\text{C}}=8\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{140^{\circ}\text{C}}=4\text{W}$ at -65 ~ 140°C (Terminal temperature)
Rated power 0.5mΩ	When the terminal temperature exceeds 75°C and 140°C, the load shall be derated in accordance with Fig.2 	$P_{75^{\circ}\text{C}}=8\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{140^{\circ}\text{C}}=4\text{W}$ at -65 ~ 140°C (Terminal temperature)
Rated power 1.0mΩ	When the terminal temperature exceeds 75°C and 140°C, the load shall be derated in accordance with Fig.3 	$P_{75^{\circ}\text{C}}=8\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{140^{\circ}\text{C}}=4\text{W}$ at -65 ~ 140°C (Terminal temperature)
Rated power 2.0mΩ	When the terminal temperature exceeds 75°C and 140°C, the load shall be derated in accordance with Fig.4 	$P_{75^{\circ}\text{C}}=6\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{140^{\circ}\text{C}}=4\text{W}$ at -65 ~ 140°C (Terminal temperature)
Rated power 3.0mΩ	When the terminal temperature exceeds 75°C and 140°C, the load shall be derated in accordance with Fig.5 	$P_{75^{\circ}\text{C}}=4\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{140^{\circ}\text{C}}=3\text{W}$ at -65 ~ 140°C (Terminal temperature)
Rated voltage Rated current	Rated voltage and current are determined by the following formula. $E = \sqrt{P \times R}$ $I = \sqrt{P / R}$ E : Rated voltage (V) I : Rated current (A) P : Rated power (W) R : Resistance (Ω)	
Resistance	See P1	
Temperature		-65°C ~ +175°C

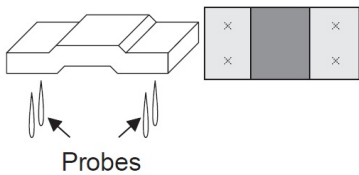
■ PSR400

Items	Conditions	Specifications
Rated power 0.2mΩ	When the terminal temperature exceeds 75°C and 130°C, the load shall be derated in accordance with Fig.6 	$P_{75^{\circ}\text{C}}=12\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{130^{\circ}\text{C}}=5\text{W}$ at -65 ~ 130°C (Terminal temperature)
Rated power 0.3mΩ	When the terminal temperature exceeds 75°C and 130°C, the load shall be derated in accordance with Fig.7 	$P_{75^{\circ}\text{C}}=10\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{130^{\circ}\text{C}}=5\text{W}$ at -65 ~ 130°C (Terminal temperature)
Rated power 0.5mΩ	When the terminal temperature exceeds 75°C and 130°C, the load shall be derated in accordance with Fig.8 	$P_{75^{\circ}\text{C}}=10\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{130^{\circ}\text{C}}=5\text{W}$ at -65 ~ 130°C (Terminal temperature)
Rated power 1.0mΩ	When the terminal temperature exceeds 75°C and 130°C, the load shall be derated in accordance with Fig.9 	$P_{75^{\circ}\text{C}}=8\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{130^{\circ}\text{C}}=5\text{W}$ at -65 ~ 130°C (Terminal temperature)
Rated power 2.0mΩ	When the terminal temperature exceeds 75°C and 115°C, the load shall be derated in accordance with Fig.10 	$P_{75^{\circ}\text{C}}=6\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{115^{\circ}\text{C}}=4\text{W}$ at -65 ~ 115°C (Terminal temperature)
Rated power 3.0mΩ	When the terminal temperature exceeds 70°C and 115°C, the load shall be derated in accordance with Fig.11 	$P_{70^{\circ}\text{C}}=5\text{W}$ at -65 ~ 70°C (Terminal temperature) $P_{115^{\circ}\text{C}}=3\text{W}$ at -65 ~ 115°C (Terminal temperature)
Rated voltage Rated current	Rated voltage and current are determined by the following formula. $E = \sqrt{P \times R}$ $I = \sqrt{P / R}$ E : Rated voltage (V) I : Rated current (A) P : Rated power (W) R : Resistance (Ω)	
Resistance	See P1	
Temperature		-65°C ~ +175°C

■ PSR500

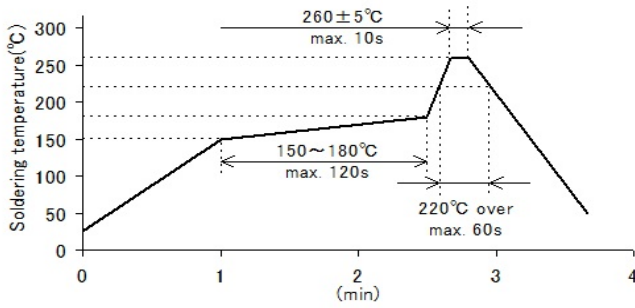
Items	Conditions	Specifications
Rated power 0.1mΩ	When the terminal temperature exceeds 75°C and 120°C, the load shall be derated in accordance with Fig.12 	$P_{75^{\circ}\text{C}}=15\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{120^{\circ}\text{C}}=10\text{W}$ at -65 ~ 120°C (Terminal temperature)
Rated power 0.2mΩ	When the terminal temperature exceeds 75°C and 120°C, the load shall be derated in accordance with Fig.13 	$P_{75^{\circ}\text{C}}=15\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{120^{\circ}\text{C}}=10\text{W}$ at -65 ~ 120°C (Terminal temperature)
Rated power 0.3mΩ	When the terminal temperature exceeds 75°C and 120°C, the load shall be derated in accordance with Fig.14 	$P_{75^{\circ}\text{C}}=10\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{120^{\circ}\text{C}}=7\text{W}$ at -65 ~ 120°C (Terminal temperature)
Rated power 0.4mΩ	When the terminal temperature exceeds 75°C and 120°C, the load shall be derated in accordance with Fig.15 	$P_{75^{\circ}\text{C}}=10\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{120^{\circ}\text{C}}=7\text{W}$ at -65 ~ 120°C (Terminal temperature)
Rated power 0.5mΩ	When the terminal temperature exceeds 75°C and 120°C, the load shall be derated in accordance with Fig.16 	$P_{75^{\circ}\text{C}}=10\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{120^{\circ}\text{C}}=7\text{W}$ at -65 ~ 120°C (Terminal temperature)
Rated power 1.0mΩ	When the terminal temperature exceeds 75°C and 120°C, the load shall be derated in accordance with Fig.17 	$P_{75^{\circ}\text{C}}=10\text{W}$ at -65 ~ 75°C (Terminal temperature) $P_{120^{\circ}\text{C}}=6\text{W}$ at -65 ~ 120°C (Terminal temperature)
Rated power 2.0mΩ	When the terminal temperature exceeds 70°C and 115°C, the load shall be derated in accordance with Fig.18 	$P_{70^{\circ}\text{C}}=7\text{W}$ at -65 ~ 70°C (Terminal temperature) $P_{115^{\circ}\text{C}}=4\text{W}$ at -65 ~ 115°C (Terminal temperature)
Rated voltage Rated current	Rated voltage and current are determined by the following formula. $E = \sqrt{P \times R}$ $I = \sqrt{P / R}$ E : Rated voltage (V) I : Rated current (A) P : Rated power (W) R : Resistance (Ω)	
Resistance	See P1	
Temperature		-65°C ~ +175°C

● Characteristics

Items	Guaranteed value	Specifications
Resistance	F (±1%)	Measuring method : 4probe per Bottom terminal  Probes
Variation of resistance with temperature	See P1	Measurement: +20 / +175°C
Overload	±0.5%	Rated power $P_{70^{\circ}\text{C},75^{\circ}\text{C}} \times 5$, 5s
Solderability	A new uniform coating of minimum of 95% of the surface being immersed and no soldering damage.	Flux: Rosin- Ethanol solution(25%weight) with diethylamine hydrochloride(3%weight) Soldering condition: 245±5°C Duration of immersion: 2.0±0.5s
Resistance to soldering heat	±1.0% No remarkable abnormality on the appearance.	Soldering condition: 260±5°C Duration of immersion: 10±1s
Rapid change of temperature	±1.0%	Test temp: -55°C~+155°C 1000cycles
Damp heat, steady state	±0.5%	85 °C, 85%(Relative humidity) Test time: 1,000h
Endurance (terminal temperature)	±1.0%	<ul style="list-style-type: none"> ■ PSR100 Tk = 75°C, Rated power$P_{75^{\circ}\text{C}}$ Tk = 140°C, Rated power$P_{140^{\circ}\text{C}}$ ■ PSR400 0.2 ~ 2.0mΩ: Tk = 75°C, Rated power$P_{75^{\circ}\text{C}}$ 3.0mΩ: Tk = 70°C, Rated power$P_{70^{\circ}\text{C}}$ 0.2 ~ 1.0mΩ: Tk = 130°C, Rated power$P_{130^{\circ}\text{C}}$ 2.0,3.0mΩ: Tk = 115°C, Rated power$P_{115^{\circ}\text{C}}$ ■ PSR500 0.1 ~ 1.0mΩ: Tk = 75°C, Rated power$P_{75^{\circ}\text{C}}$ 2.0mΩ: Tk = 70°C, Rated power$P_{70^{\circ}\text{C}}$ 0.1 ~ 1.0mΩ: Tk = 120°C, Rated power$P_{120^{\circ}\text{C}}$ 2.0mΩ: Tk = 115°C, Rated power$P_{115^{\circ}\text{C}}$ 1.5h:ON – 0.5h:OFF Test time: 1,000h
Endurance (Ambient temperature)	±1.0%	175°C Test time: 1,000h
Component solvent resistance	±0.5%	23±5°C, Immersion cleaning, 5±0.5min Solvent: 2-Propanol
Bend strength of the end face plating	Without open	-

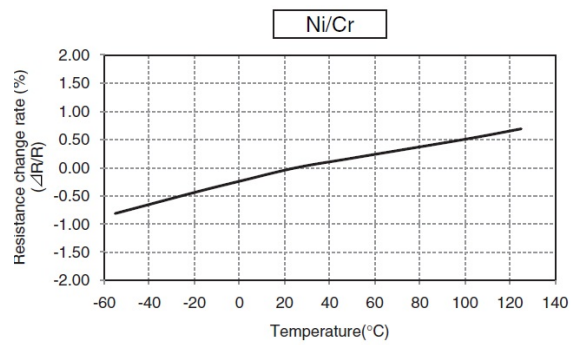
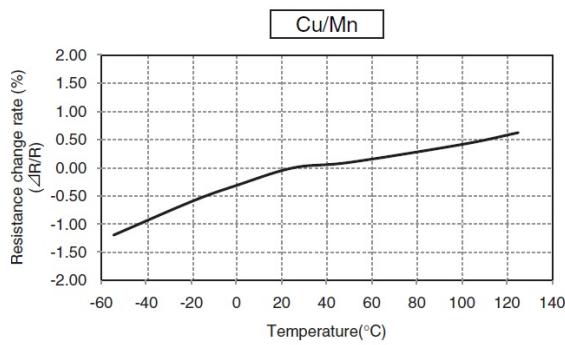
Compliance Standard(s) : IEC60115-1 / IEC60115-8
JIS C 5201-1 / JIS C 5201-8

● Solder conditions

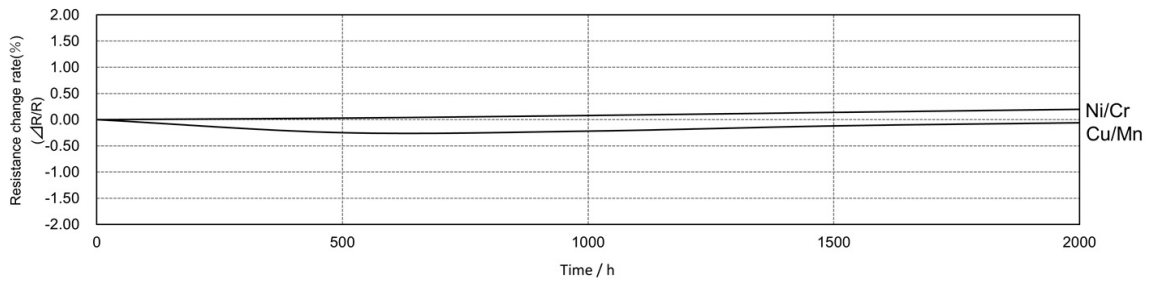


Recommended solder profile			
Reflow			
Temperature(°C)	260	220	150~180
Time(s)	Peak 10s Max.	60s	120s

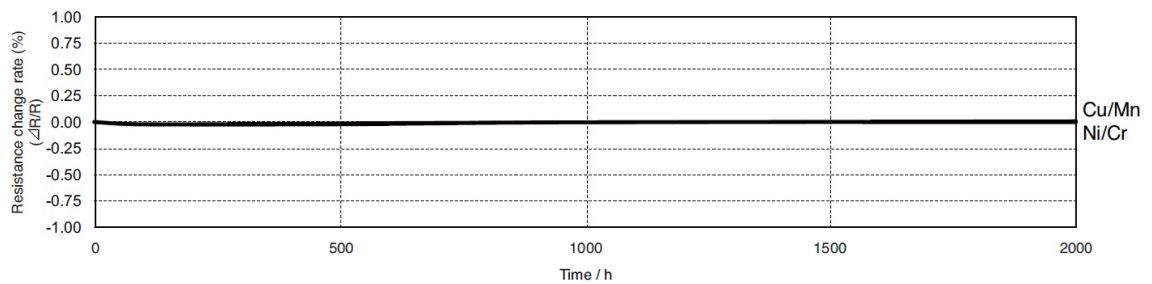
● Variation of resistance with temperature (Reference temperature is 20°C)



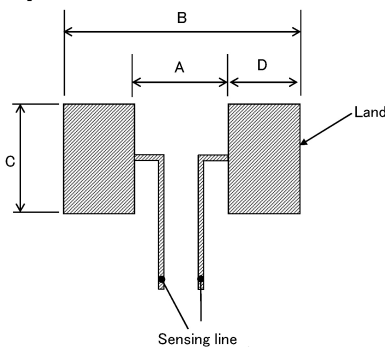
● Endurance (175°C with no load)



● Low temperature exposure



● Land pattern

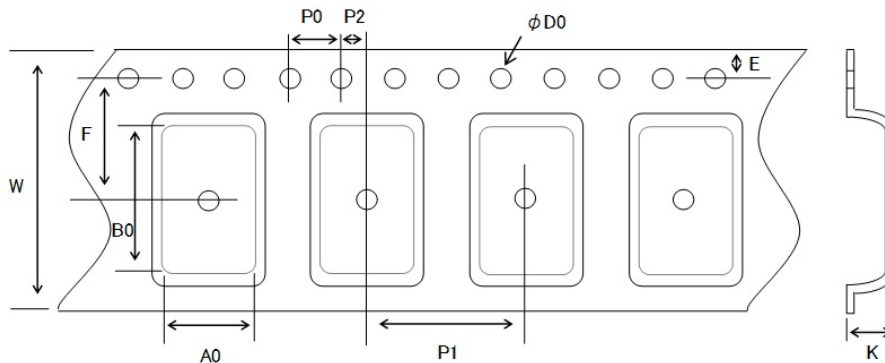


Type	A	B	C	D
PSR100	3.40	7.00	3.40	1.80
PSR400	5.60	11.00	6.20	2.70
PSR500	5.60	16.00	8.75	5.20

● Part number description

PSR	100	KTQ	F	H	1L00		
Part No.	Size mm(inch)	Packaging specifications code		Tolerance	Special part code	Nominal resistance	
PSR High power metal plate shunt resistors <Ultra low ohmic>	100 6432 (2512)	KTQ	F (±1%)	B	Resistance code, 4 digits.	Resistance code, 4 digits.	
	400 10×5.2 (3921)	ITQ		C		Resistance	4 digits
	500 15×7.75 (5931)	HTQ		D		0.1mΩ	0L10
				E		0.2mΩ	0L20
				F		0.3mΩ	0L30
				H		0.4mΩ	0L40
				J		0.5mΩ	0L50
				L		1.0mΩ	1L00
						2.0mΩ	2L00
						3.0mΩ	3L00

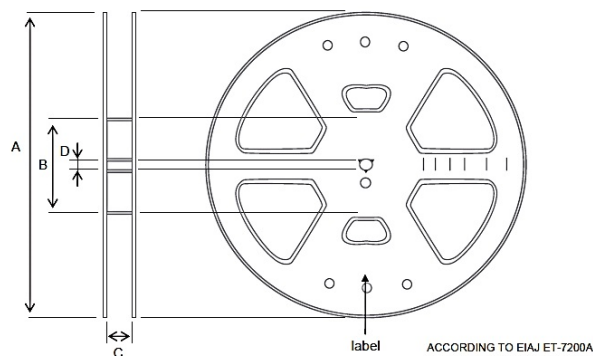
● Tape dimensions



(Unit : mm)

Part No.	W	F	E	A0	B0	D0	F0	P1	P2	K
PSR100	12.0±0.2	5.5±0.05	1.75±0.1	3.5±0.1	6.6±0.1	Φ1.5 ^{+0.1} ₀	4.0±0.1	8.0±0.1	2.0±0.05	1.6±0.1
PSR400	16.0±0.2	7.5±0.1	1.75±0.1	5.7±0.2	10.5±0.2	Φ1.5 ^{+0.1} ₀	4.0±0.1	8.0±0.1	2.0±0.1	2.3±0.1
PSR500	24.0±0.2	11.5±0.1	1.75±0.1	8.3±0.2	15.6±0.2	Φ1.5 ^{+0.1} ₀	4.0±0.1	12.0±0.1	2.0±0.1	2.3±0.1

● Reel dimensions



(Unit : mm)

Part No.	A	B	C	D
PSR100	Φ330±2.0	Φ100±1.0	13.4±1.0	Φ13.0±0.2
PSR400			17.4±1.0	
PSR500			25.4±1.0	