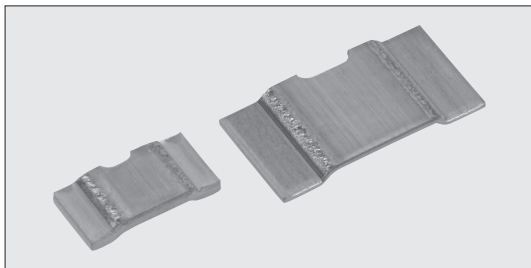


CURRENT SENSING (FOR HIGH POWER)

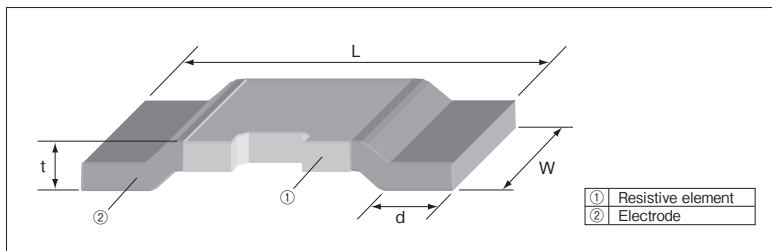


PSJ2 · PSL2 Chip Type Power Shunt

Current Sensing Resistors



Construction



Features

- Ultra low resistance, suitable for large current sensing.
- Automatic mounting machines are applicable.
- Suitable for reflow soldering. (Not suitable for flow soldering.)
- Products meet EU-RoHS requirements.
- AEC-Q200 qualified.

Applications

- Current sensing for module of Automobiles, Inverter power supplies etc.

Reference Standards

IEC 60115-1
JIS C 5201-1

Dimensions

Type (Inch Size Code)	Resistance (Ω)	Dimensions (mm)				Weight (g) (1000pcs)
		L	W	d	t	
PSJ2 (3920)	0.2m	10.0 \pm 0.25	5.2 \pm 0.25	2.0 \pm 0.25	1.98 \pm 0.2	655
	0.5m				1.27 \pm 0.2	346
	1m				0.89 \pm 0.2	176
	2m				1.17 \pm 0.2	296
	3m				0.95 \pm 0.2	199
	4m				0.84 \pm 0.2	152
PSL2 (2512)	0.2m	6.3 \pm 0.15	3.15 \pm 0.15	1.15 \pm 0.15	1.40 \pm 0.15	181
	0.3m				1.32 \pm 0.15	161
	0.5m				1.12 \pm 0.15	128

Type Designation

Example

PS	J	2	N	TEB	L500	F
Product Code	Style & Power Rating	Terminal Number	Terminal Surface Material	Taping	Nominal Resistance	Resistance Tolerance
	J(0.2m) : 12W J(0.5m) : 10W J(1m) : 8W J(2m) : 6W J(3m) : 5W J(4m) : 5W L(0.2m) : 9W L(0.3m) : 8W L(0.5m) : 8W		N: No surface treatment	TEB: 8mm pitch plastic embossed BK: Bulk	4 digits L200: 0.2m Ω L300: 0.3m Ω L500: 0.5m Ω 1L00: 1m Ω 2L00: 2m Ω 3L00: 3m Ω 4L00: 4m Ω	F: \pm 1%

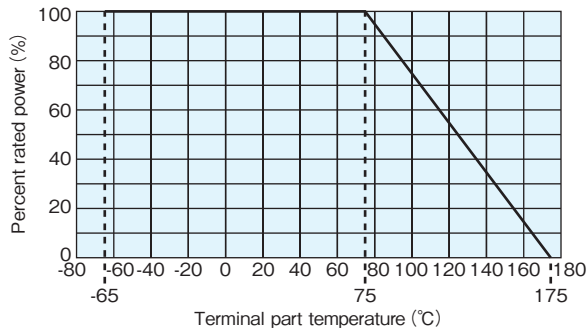
Contact us when you have control request for environmental hazardous material other than the substance specified by EU-RoHS.

For further information on taping, please refer to APPENDIX C on the back pages.

Ratings

Type	Power Rating (Current Rating)	T.C.R. ($\times 10^{-5}/K$)	Resistance Range (Ω)	Resistance Tolerance	Rated Terminal Part Temp.	Operating Temp. Range	Taping & Q'ty/Reel (pcs)
							TEB
PSJ2	12W(244A)	\pm 200	0.2m	F: \pm 1%	75 $^{\circ}$ C	-65~+175 $^{\circ}$ C	3,000
	10W(141A)	\pm 100	0.5m				
	8W(89A)	\pm 75	1m				
	6W(54A)	\pm 75	2m				
	5W(41A)	\pm 50	3m				
	5W(35A)		4m				
PSL2	9W(212A)	250 \pm 100	0.2m	F: \pm 1%	75 $^{\circ}$ C	-65~+175 $^{\circ}$ C	5,000
	8W(163A)	\pm 175	0.3m				
	8W(126A)	\pm 115	0.5m				

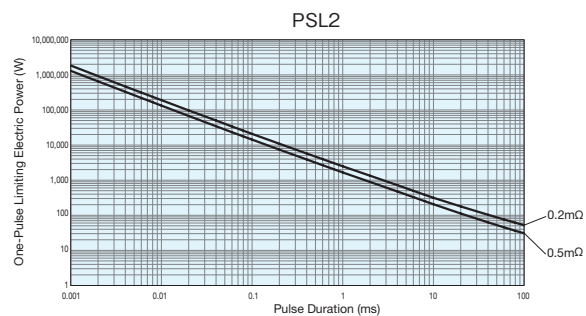
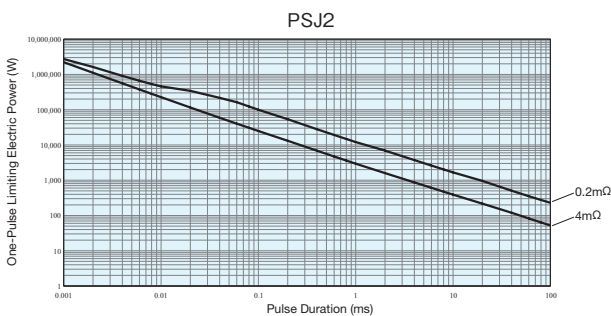
Derating Curve



When the terminal part temperature of the resistor exceeds the rated terminal part temperature shown above, the power shall be derated according to the derating curve.
 ※Please refer to "Introduction of the derating curves based on the terminal part temperature" on the beginning of catalog before use.

One-Pulse Limiting Electric Power

※The maximum applicable voltage is equal to the max. overload voltage.
 Please ask us about the resistance characteristic of continuous applied pulse.
 The pulse endurance values are not assured values, so be sure to check the products on actual equipment when you use them.



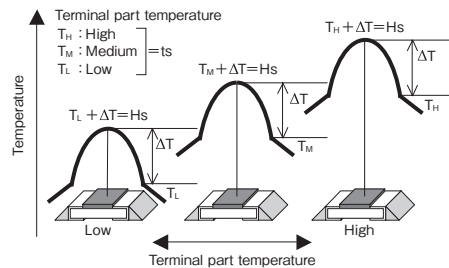
Thermal Resistance

Type	Resistance (Ω)	Rth (°C/W)
PSJ2	0.2m	4
	4m	27
PSL2	0.2m	3.2
	0.5m	6.7

$$R_{th} = (H_s - t_s) / \text{Power}$$

Regarding the temperature rise, the value of the temperature varies per conditions and board for use since the temperature is measured under our measuring conditions. Please refer to us before use.

The temperature of the resistor will increase the same ΔT from the standard terminal part temperature regardless of the ambient temperature when the same power is applied. This is because there is hardly any heat dissipation from the resistor surface to the ambient air.



Performance

Test Items	Performance Requirements		Test Methods
	Limit	Typical	
Resistance	Within specified tolerance	—	25°C
T.C.R	Within specified T.C.R	—	+25°C / +125°C
Overload (Short time)	0.5	0.1	PSJ (0.2mΩ) : 36W for 5s. PSJ (0.5mΩ) : 30W for 5s. PSJ (1mΩ) : 20W for 5s. PSJ (2mΩ) : 18W for 5s. PSJ (3mΩ) : 12.5W for 5s. PSJ (4mΩ) : 10W for 5s. PSL (0.2mΩ) : 27W for 5s. PSL (0.3mΩ, 0.5mΩ) : 24W for 5s.
Resistance to soldering heat	0.5	0.1	260°C ± 5°C, 15s ± 1s
Rapid change of temperature	0.5	0.1	-55°C (30min.) / +150°C (30min.) 1000 cycles
Moisture resistance	0.5	0.05	85°C ± 3°C, 85% ± 3%RH, 1000h, 10% Bias
Endurance at 75°C and less of terminal part temperature	1.0	0.3	Terminal part temp. : 75°C ± 3°C, 1000h, 1.5h ON/0.5h OFF cycle
Low temperature exposure	0.5	0.02	-65°C, 1000h
High temperature exposure	1.0	0.5	+175°C, 1000h

Precautions for Use

- In case of using the low ohm resistors as shunt resistors, please lay out a pattern considering the electromagnetic induction with surrounding inductors.
- For resistance values of PSJ2/PSL2 the resistance the resistance value after soldering may change depending on the size of pad pattern or solder amount. Make sure the effect of decline/increase of resistance value before designing.