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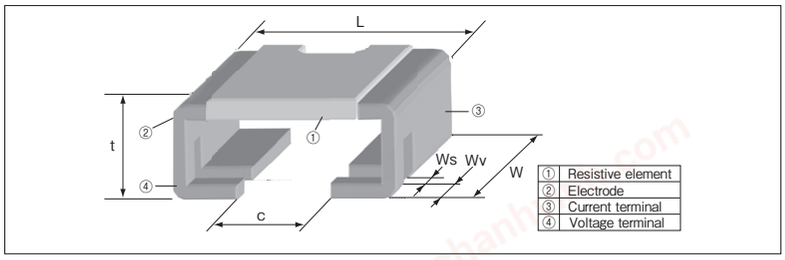
CURRENT SENSING (FOR HIGH POWER)

EU RoHS

PSF4 Chip Type Power Shunt



■Construction



■Features

- Correcter electric current detection is possible to 4-terminal Construction.
- Excellent T.C.R. achieved (±50×10⁻⁶/K)
- 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 Tested.

■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) L	W	c	Ws	Wv	t	Weight (g) (1000pcs)
PSF4 (1216)	0.5m	3.0±0.1	3.8±0.1	0.95±0.15	0.7±0.05	0.5±0.05	1.8±0.1	70
	1m							45

■Type Designation

Example

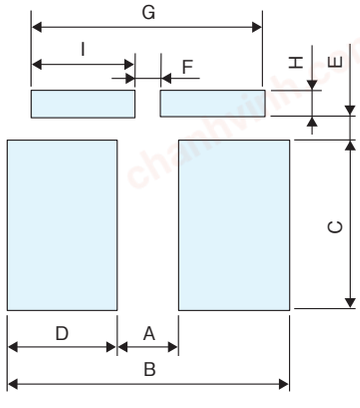
PS	F	4	N	TEB	L500	F
Product Code	Style &Power Rating	Terminal Number	Terminal Surface Material	Taping	Nominal Resistance	Resistance Tolerance
	F(0.5m):5W F(1m):3W		N:Pure Cupper	TEB:plastic embossed BK:Bulk	4 digits L500:0.5mΩ 1L00:1mΩ	F:±1%

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. (×10⁻⁶/K)	Resistance Range (Ω)	Resistance Tolerance	Rated Terminal Part Temp.	Operating Temp. Range	Taping & Q'ty/Reel (pcs) TEB
PSF4	5W(100A)	±50	0.5m	F : ±1%	130℃	−65～+175℃	3,000
	3W(54A)		1m				

■Recommended Pad Dimensions



Type (Inch Size Code)	Dimensions (mm) A	B	C	D	E	F	G	H	I
PSF4(1216)	0.6	3.6	2.95	1.5	0.5	0.6	3.6	0.7	1.5

※These pad dimensions are only for standard pattern and the characteristics are not guaranteed, which you are suggested to confirm before use.

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.
Contact our sales representatives before you use our products for applications including automotives, medical equipment and aerospace equipment.
Malfunction or failure of the products in such applications may cause loss of human life or serious damage.

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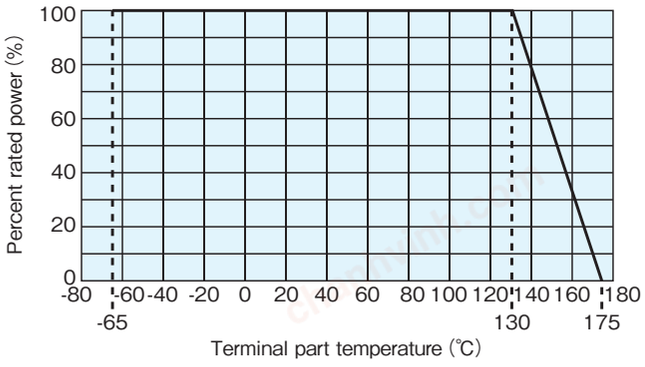
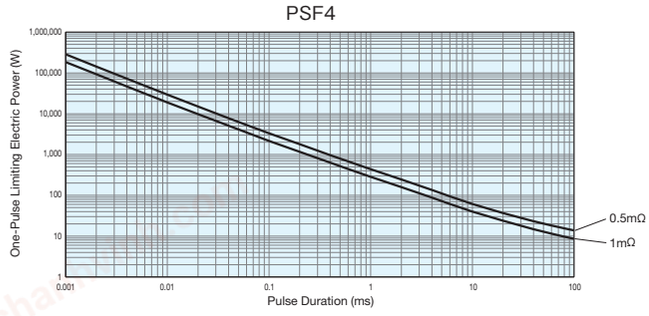
■Derating Curve



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 berofe use.

■One-Pulse Limiting Electric Power

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.



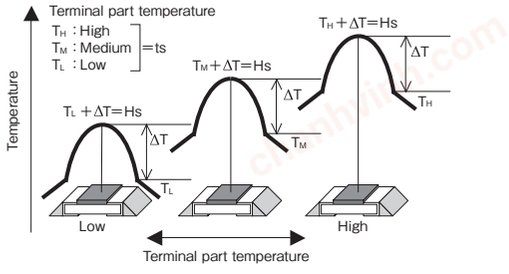
■Thermal Resistance

Type	Resistance (Ω)	Rth (℃/W)
PSF4	0.5m	8
	1m	14

Rth=(Hs-ts)/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 ⊿T from the standard terminal part temperature regardlless 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	Perfomance Requirements ΔR±%		Test Methods
	Limit	Typical	
Resistance	Within specified tolerance	—	25℃
T.C.R	Within specified T.C.R	—	+25℃/+125℃
Overload (Short time)	0.5	0.1	0.5mΩ : 15W for 5s. 1mΩ : 9W for 5s.
Resistance to soldering heat	0.5	0.1	260℃±5℃、15s±1s
Rapid change of temperature	0.5	0.1	−55℃ (30min.)/+150℃ (30min.) 1000 cycles
Moisture resistance	0.5	0.05	85℃±3℃、85%±3%RH、1000h、10% Bias
Endurance of rated terminal part temperature	1.0	0.5	Terminal part temp.:130℃±3℃、1000h、1.5h ON/0.5h OFF cycle
Low temperature exposure	0.5	0.01	−65℃、1000h
High temperature exposure	1.0	0.6	+175℃、1000h

■Precautions for Use

• In case of using the low ohm resistors as shunt resistors, please lay out a pattern considering the electromagnetic induction induction with surrounding inductors.

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