



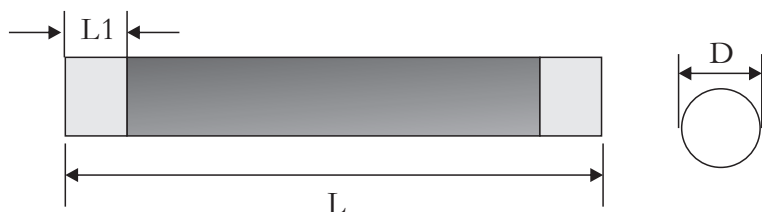
● Features

- I .The SPER resistors are highly resistant to heat, compact, yet capable of withstanding high power. Additionally, these resistors are solid, which means they provide superior frequency characteristics and high resistance to overloading.
- II .Furthermore, the SPER resistors can be used in water, which makes them ideal for use in high-frequency circuits and for other applications that require a large current.

● Applications

- I .Power supply circuits
- II .Dummy loads
- III .Circuits for protecting against parasitic oscillation
- IV .PT protection
- V .High-frequency circuits
- VI .Accelerators
- VII .Other high-current circuits
- VIII .Ultrasonic devices
- IX .Other applications: far-infrared heaters, microwave absorbers

● Dimensions



Type	Power	Dimensions(mm)		
		L ± 10	L1 ± 20	D ± 1.0
SPER	3W	20	6.0	5.0
	5W	25	6.0	9.0
	10W	40	6.0	9.0
	20W	60	6.0	14.0
	30W	80	8.0	14.0
	50W	100	8.0	20.0

● Ordering Information

Example:

SPER	10W	100R	K
(1)	(2)	(3)	(4)
Series Name	Power	Resistance	Resistance Tolerance

(1)Series Name: SPER

(2)Power: 3W=3W,5W=5W,10W=10W,20W=20W,30W=30W,50W=50W

(3)Resistance: 0R100=1Ω,10R00=10Ω,100R000=100Ω,330R00=330Ω

(4)Resistance Tolerance: K= ± 10%

● Applications And Ratings

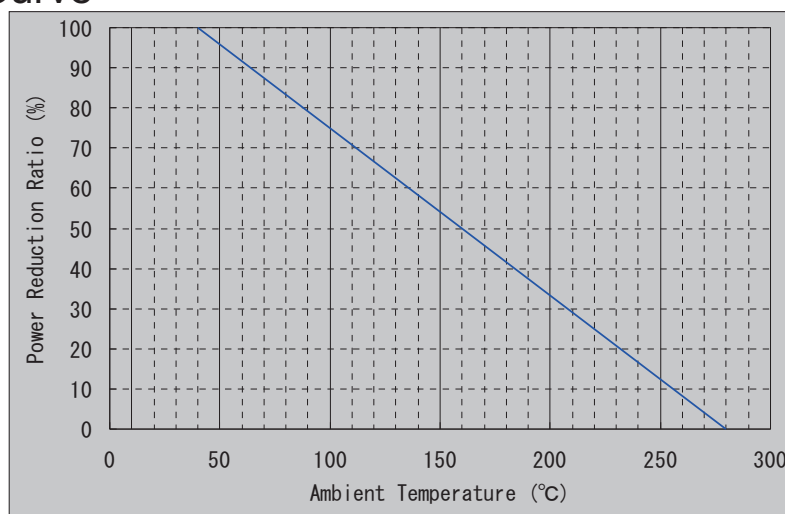
Type	Power	Resistance Range(Ω)	Maximum Operating Impulse Voltage (kV) 1.2x50 μ s	Allowable Energy Injected(J)	Resistance Rolerances
SPER	3W	1.0~10K Ω	0.9	27	K= \pm 10%
	5W	1.0~20K Ω	0.9	63	
	10W	1.0~100K Ω	1.5	110	
	20W	0.33~1M Ω	1.5	290	
	30W	0.47~1M Ω	2.6	430	
	50W	0.47~1M Ω	3.5	830	

● Performance

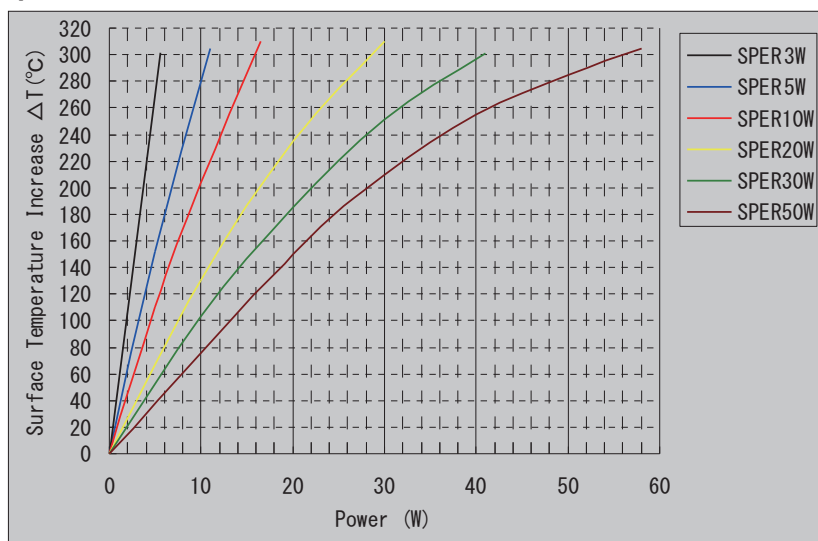
Item	Characteristic Value
Normal operating temperature	300 $^{\circ}$ C
Maximum operating temperature	350 $^{\circ}$ C
Temperature coefficient	\pm 0.15%/ $^{\circ}$ C
Withstand voltage (1.2/50 μ s)	0.9kV/cm
Rate of change of resistance when current is applied (rated time of 500 h)	\pm 10%
Short-time overloading (10 times \times 5 sec)	\pm 2% (MAX)
Short-time injection capacity	70J/cm ³
Bulk specific gravity	2.0~2.4
Specific heat	630J/(kg \cdot K)
Thermal expansion coefficient	3~5 \times 10 ⁻⁶ (/ $^{\circ}$ C)

● Characteristic Data

Derating Curve



Surface Temperature Increase vs. Power



Temperature Coefficient of Resistance vs.

