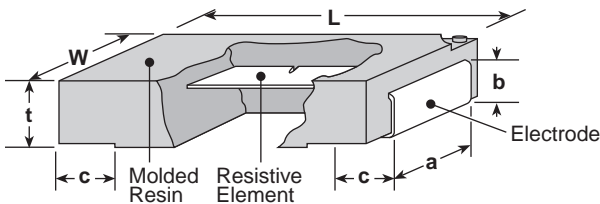


features

- SMD type of small size, ultra-low resistance (3mΩ~) and high accuracy (±0.5%) resistor for current sensing
- Flameproof UL94V0 molded polymer case
- Excellent dimension accuracy, mountability and shock resistance
- Excellent terminal strength and solderability due to structure of a metal plate terminal electrode
- Easy to absorb the thermal expansion and shrinkage because of a metal plate terminal structure
- Suitable for flow, reflow and iron solderings
- Products with lead-free terminations meet EU RoHS requirements. EU RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.
- AEC-Q200 Tested

current sense

dimensions and construction



Size Code	Dimensions inches (mm)					
	L	W	t	a	b	c
SLW07 (2010)	.197±.012 (5.0±0.3)	.098±.008 (2.5±0.2)	.067±.008 (1.7±0.2)	.079±.008 (2.0±0.2)	.047±.008 (0.9±0.2)	.035±.012 (1.2±0.3)
SLW1 (2512)	.248±.012 (6.3±0.3)	.122±.008 (3.1±0.2)	.075±.008 (1.9±0.2)	.094±.008 (2.4±0.2)	.047±.008 (1.2±0.2)	.047±.012 (1.2±0.3)
SLN3 (4527)	.453±.012 (11.5±0.3)	.276±.008 (7.0±0.2)	.094±.008 (2.4±0.2)	.217±.008 (5.5±0.2)	.063±.008 (1.6±0.2)	.100±.016 (2.55±0.4)
SLN5 (4527)	.453±.012 (11.5±0.3)	.276±.008 (7.0±0.2)	.098±.008 (2.5±0.2)	.217±.008 (5.5±0.2)	.075±.008 (1.9±0.2)	.100±.016 (2.55±0.4)

ordering information

SL	1	T	TE	10L0	F	75
Type	Size & Power Ratings	Termination Material	Packaging	Nominal Resistance	Tolerance	T.C.R. (x10⁻⁴/K)
SL SLN	W07: 1W W1: 1.5W 3: 3W 5: 7W	T: Sn	TE: SLW07 & SLW1 TED: SLN3 & SLN5 For further information on packaging please refer to Appendix A	±0.5%, ±1%: 4 digits ±5%: 3 digits All values less than 0.1Ω (100m) are expressed in mΩ with "L" as decimal Ex: 2mΩ = 2L00	D: ±0.5% F: ±1% J: ±5%	Nil: 0-150 0-200 ±75 (SLN3/SLN5) ±100 ±110 ±180 50: ±50 (SLW1) 75: ±75 (SLW1)

applications and ratings

Part Designation	Power Rating	Resistance Range (Ω)*			T.C.R. (ppm/°C) Max.	Rated Terminal Part Temperature	Operating Temperature Range
		D: ±0.5% E24, E96***	F: ±1% E24, E96***	J: ±5% E24			
SLW07	1W	—	5m - 100m		0~200: R≤10mΩ 0~150: R≥11mΩ	145°C	-55°C to +180°C
SLW1	1.5W	10m - 100m	5m - 100m	3m - 100m	±180: R < 15mΩ ±100: R ≥ 15mΩ ±75: 20m ≤ R ≤ 100mΩ ±50: 34.8m ≤ R ≤ 100mΩ	120°C	
SLN3	3W	5m - 200m			±180: 2.2m ≤ R < 3mΩ ±110: 3m ≤ R < 10mΩ ±75: R ≥ 10mΩ	105°C	
SLN5	7W (5W)**	3m~200m	2.2m~200m	—		70°C (120°C)**	

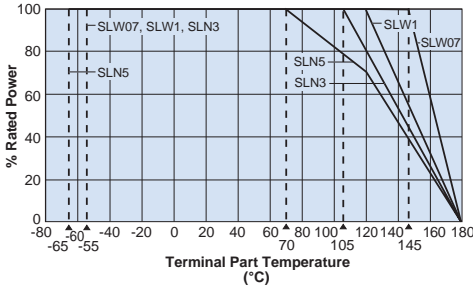
* 5m, 6m, 7m, 8m, 9mΩ also available inside resistance range

** In case the rated terminal part temperature of 120°C, the rated power shall be 5W

*** SLW07 and SLN5 (3m~4.7mΩ) offer only E24 series

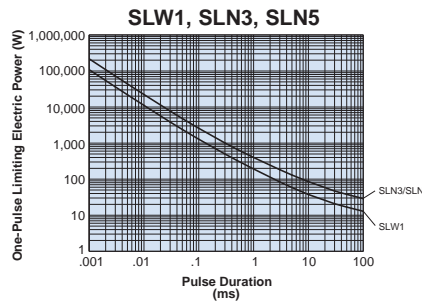
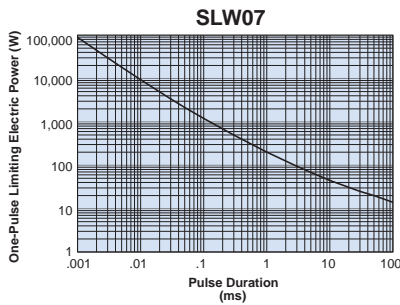
environmental applications

Derating Curve



For resistors operated at a terminal part temperature of described for each size or above, a power rating shall be derated in accordance with the derating curve. Please refer to "Introduction of the derating curve based on the terminal part temperature" in the beginning of our catalog before use.

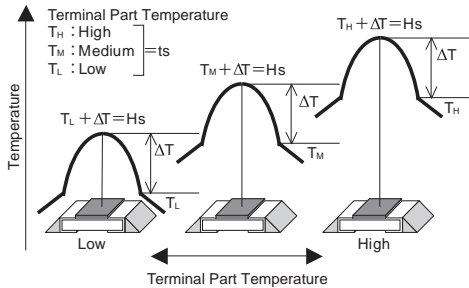
One-Pulse Limiting Electric Power



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 (°C/W)
SLW07	5m	26
	22m	48
	100m	78
SLW1	5m	16
	20m	39
	100m	59
SLN3	5m	19
	11m	24
	200m	46
SLN5	5m	11
	30m	19
	200m	15



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.

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

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.

Performance Characteristics

Parameter	Requirement $\Delta R \pm\%$		Test Method
	Limit	Typical	
Resistance	Within specified tolerance	—	25°C
T.C.R.	Within specified T.C.R.	—	+25°C/+125°C
Overload (Short time)	±1%: SLW07, SLW1 ±0.5%: SLN3 ±2%: SLN5	±1%: SLW07, SLW1 ±0.25%: SLN3 ±0.5%: SLN5	SLW07: 3W for 5 seconds, SLW1: 5W for 5 seconds, SLW1 (T.C.R: ±50/±75): 4W for 5 seconds, SLN3: 10W for 5 seconds, SLN5: 15W for 5 seconds
Resistance to Solder Heat	±1%: SLW07, SLW1	±1%: SLW07, SLW1	260°C ± 5°C, 10 ± 1 second
	±0.5%: SLN3, SLN5	±0.5%: SLN3, SLN5	260°C ± 5°C, 10–12 seconds
Rapid Change of Temperature	±1%: SLW07, SLW1	±0.5%: SLW07, SLW1	-55°C (30 minutes) / +150°C (30 minutes), 1000 cycles
	±0.5%: SLN3, SLN5	±0.3%: SLN3, SLN5	-55°C (15 minutes) / +150°C (15 minutes), 1000 cycles
Moisture Resistance	±2%: SLW07, SLW1	±1%: SLW07, SLW1	40°C ± 2°C, 90%–95%RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
	±0.5%: SLN3, SLN5	±0.35%: SLN3, SLN5	SLN3: 85°C ± 2°C, 85% RH, 1000 hours, 0.3W SLN5: 85°C ± 2°C, 85% RH, 1000 hours, 0.7W
Endurance of Rated Terminal Part Temperature	±2%	±1% ±1.2%: SLN5	Terminal part temperature: 145°C (SLW07), 120°C (SLW1, SLN5: 5W), 105°C (SLN3), 70°C (SLN5: 7W), 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle,
Low Temperature Exposure	±0.5%	±0.25%	SLW07, SLW1: -55°C, 1 hour; SLN3, SLN5: -65°C, 24 hours

Specifications given herein may be changed at any time without prior notice. Please confirm technical specifications before you order and/or use.

11/26/24