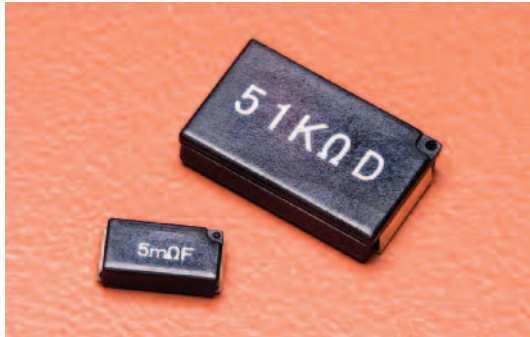


**SL1 recommended replacement**  
 $105\text{m}\Omega \leq R \leq 300\text{m}\Omega$ : SL1T (75ppm) (lead-free)  
 $301\text{m}\Omega \leq R \leq 1\text{M}\Omega$ : SLR1T (lead-free)  
 $1\text{M}\Omega < R \leq 22\text{M}\Omega$ : No production alternative

**SL2 recommended replacement**  
 $365\text{m}\Omega \leq R \leq 1\text{M}\Omega$ : WK73S/R3AT  
 $1.1\text{M}\Omega < R \leq 22\text{M}\Omega$ : No production alternative



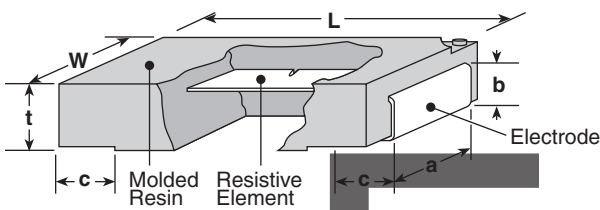
current sense



### features

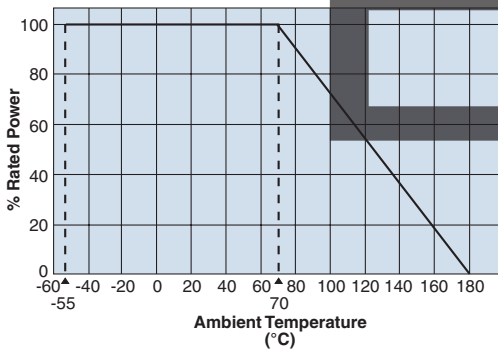
- Surface mount type of small size, high accuracy ( $\pm 0.5\%$ ) with low resistance to high resistance
- Flameproof UL94V0 molded polymer case
- Excellent dimension accuracy, mountability and shock resistance
- Suitable for flow, reflow, and iron solderings
- Products with lead-free terminations meet EU RoHS requirements. EU RoHS regulation is not intended for Pb-glass contained in electrode, resistor element and glass.
- AEC-Q200 Tested

### dimensions and construction

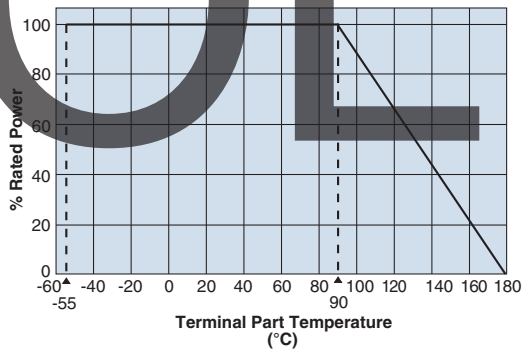


Size Code	Dimensions inches (mm)					
	L	W	t	a	b	c
SL1 (2512)	.248±.012 (6.3±0.3)	.122±.008 (3.1±0.2)	.075±.008 (1.9±0.2)	.094±.008 (2.4±0.2)	.047±.008 (1.2±0.2)	.047±.012 (1.2±0.3)
SL2 (4527)	.453±.012 (11.5±0.3)	.276±.008 (7.0±0.2)	.098±.008 (2.5±0.2)	.197±.008 (5.0±0.2)	.067±.008 (1.7±0.2)	.102±.02 (2.6±0.5)

### Derating Curve



For resistors operated at an ambient temperature of 70°C or above, a power rating shall be derated in accordance with the above 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.

### ordering information

SL	1	T	TE	10L0	F
Type	Power Rating	Termination Material	Packaging	Nominal Resistance	Tolerance
SL	1: 1W 2: 2W	T: Sn	TE: 7" embossed plastic For further information on packaging please refer to Appendix A	$\pm 0.5\%$ , $\pm 1\%$ : 4 digits $\pm 2\%$ , $\pm 5\%$ : 3 digits All values less than 0.1 $\Omega$ (100m) are expressed in m $\Omega$ with "L" as decimal Ex: 2m $\Omega$ = 2L00 0.1 $\Omega$ : R100; 5m $\Omega$ : 5L0	D: $\pm 0.5\%$ F: $\pm 1\%$ J: $\pm 5\%$

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

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**SL1 recommended replacement**  
 $105\text{m}\Omega \leq R \leq 300\text{m}\Omega$ : SL1T (75ppm) (lead-free)  
 $301\text{m}\Omega \leq R \leq 1\text{M}\Omega$ : SLR1T (lead-free)  
 $1\text{M}\Omega < R \leq 22\text{M}\Omega$ : No production alternative

**SL2 recommended replacement**  
 $365\text{m}\Omega \leq R \leq 1\text{M}\Omega$ : WK73S/R3AT  
 $1.1\text{M}\Omega < R \leq 22\text{M}\Omega$ : No production alternative

### applications and ratings

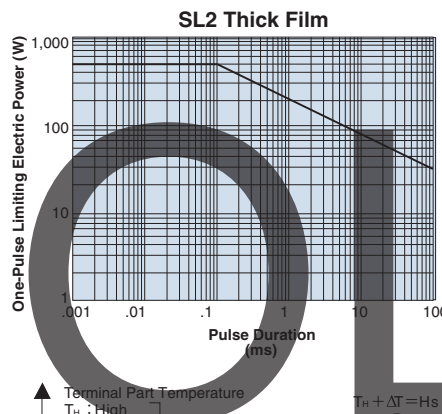
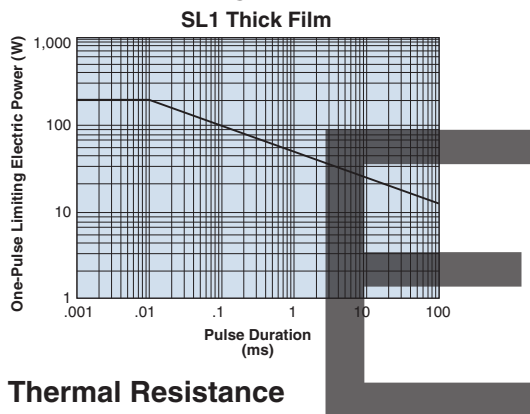
Part Designation	Power Rating	Rated Ambient Temp.	Rated Terminal Part Temperature	Resistance Range ( $\Omega$ )*			T.C.R. (ppm/ $^{\circ}\text{C}$ ) Max.	Absolute Maximum Working Voltage	Absolute Maximum Overload Voltage	Operating Temp. Range
				D: $\pm 0.5\%$ E24, E96***	F: $\pm 1\%$ E24, E96***	J: $\pm 5\%$ E24				
SL1	1W	70 $^{\circ}\text{C}$	90 $^{\circ}\text{C}$	105m - 1M	105m - 1M	110m - 22M	$\pm 100$	200V	400V	-55 $^{\circ}\text{C}$ to +180 $^{\circ}\text{C}$
SL2	2W		90 $^{\circ}\text{C}$	365m ~ 1M	365m ~ 1M	390m ~ 22M	$\pm 100$	500V	1000V	

Rated voltage =  $\sqrt{\text{Power Rating} \times \text{Resistance Value}}$  or Max. working voltage, whichever is lower

If any questions should arise whether to use the “Rated Ambient Temperature” or the “Rated Terminal Part Temperature,” please give priority to the “Rated Terminal Part Temperature.” Prior to use and for more details refer to “Introduction of the derating curves on the terminal part temperature” in the beginning of the catalog.

### environmental applications

#### One-Pulse Limiting Electric Power



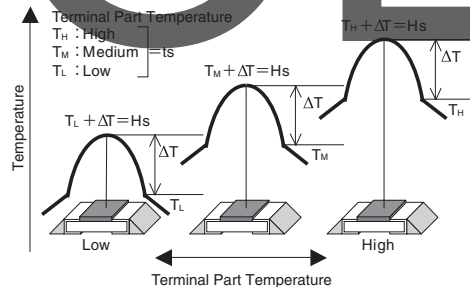
The maximum applicable voltage is equal to the max. overload voltage.  
 Please ask us about the resistance characteristic of continuous applied pulse.  
 The pulse endurance values are not assured values, so be sure to check the products on actual equipment when you use them.

#### Thermal Resistance

Type	Rth ( $^{\circ}\text{C}/\text{W}$ )
SL1 (Thick film)	14
SL2 (Thick film)	6

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

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  $\Delta T$  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 Characteristics

Parameter	Requirement $\Delta R \pm\%$		Test Method
	Limit	Typical	
Resistance	Within specified tolerance	—	25 $^{\circ}\text{C}$
T.C.R.	Within specified T.C.R.	—	+25 $^{\circ}\text{C}/+125^{\circ}\text{C}$
Overload (Short time)	$\pm 1\%$	$\pm 1\%$	Rated power x 5 for 5 seconds
Resistance to Solder Heat	$\pm 1\%$	$\pm 1\%$	260 $^{\circ}\text{C} \pm 5^{\circ}\text{C}$ , 10 $\pm 1$ second
Rapid Change of Temperature	$\pm 1\%$	$\pm 1\%$	-55 $^{\circ}\text{C}$ (30 minutes), +150 $^{\circ}\text{C}$ (30 minutes), 100 cycles
Moisture Resistance	$\pm 2\%$	$\pm 0.5\%$	40 $^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , 90%~95%RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Endurance at 70 $^{\circ}\text{C}$	$\pm 2\%$	$\pm 0.5\%$	70 $^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle
Low Temperature Exposure	$\pm 0.5\%$	$\pm 0.25\%$	-55 $^{\circ}\text{C}$ , 1 hour

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