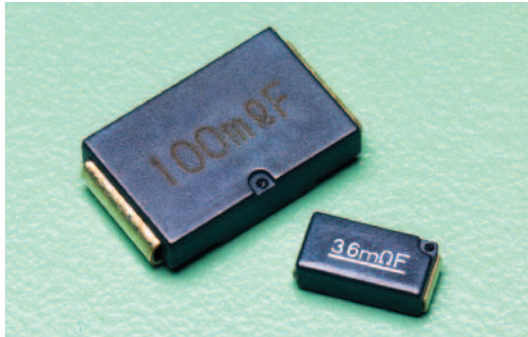
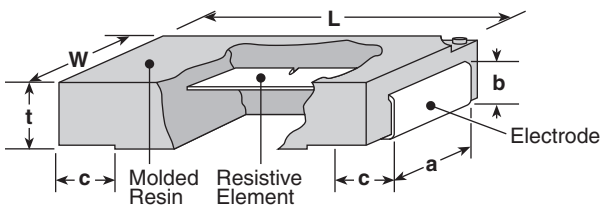




### features

- Surface mount type
- Flameproof UL94V0 molded polymer case
- Excellent dimension accuracy, mountability and shock resistance
- 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 Qualified

### dimensions and construction



| Size Code    | Dimensions inches (mm)  |                        |                        |                        |                        |                         |
|--------------|-------------------------|------------------------|------------------------|------------------------|------------------------|-------------------------|
|              | L                       | W                      | t                      | a                      | b                      | c                       |
| SLW07 (2010) | .197±.012<br>(5.0±0.3)  | .098±.008<br>(2.5±0.2) | .067±.008<br>(1.7±0.2) | .079±.008<br>(2.0±0.2) | .047±.008<br>(0.9±0.2) | .035±.012<br>(1.2±0.3)  |
| SLW1 (2512)  | .248±.012<br>(6.3±0.3)  | .122±.008<br>(3.1±0.2) | .075±.008<br>(1.9±0.2) | .094±.008<br>(2.4±0.2) | .047±.008<br>(1.2±0.2) | .047±.012<br>(1.2±0.3)  |
| SLN3 (4527)  | .453±.012<br>(11.5±0.3) | .276±.008<br>(7.0±0.2) | .094±.008<br>(2.4±0.2) | .217±.008<br>(5.5±0.2) | .063±.008<br>(1.6±0.2) | .100±.016<br>(2.55±0.4) |
| SLN5 (4527)  | .453±.012<br>(11.5±0.3) | .276±.008<br>(7.0±0.2) | .098±.008<br>(2.5±0.2) | .217±.008<br>(5.5±0.2) | .075±.008<br>(1.9±0.2) | .100±.016<br>(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 <sup>-4</sup> /K)                                                                      |
| SL<br>SLN | W07: 1W<br>W1: 1.5W<br>3: 3W<br>5: 7W | T: Sn                | TE: Embossed plastic<br>TED: 10" embossed plastic (SLN5 only)<br>For further information on packaging please refer to Appendix A | ±0.5%, ±1%: 4 digits<br>±5%: 3 digits<br>All values less than 0.1Ω (100m) are expressed in mW with "L" as decimal<br>Ex: 2mΩ = 2L00 | D: ±0.5%<br>F: ±1%<br>J: ±5% | Nil: 0-150<br>0-200<br>±75 (SLN3/SLN5)<br>±100<br>±110<br>±180<br>50: ±50 (SLW1)<br>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<br>0~150: R=>11mΩ                                             | 125°C                           | -55°C to +180°C             |
| SLW1             | 1.5W         | 10m - 100m            | 5m - 100m          |            | ±180: R=<13mΩ<br>±100: R=>15mΩ<br>±75: 20m=<R=<100mΩ<br>±50: 34.8m=<R=<100mΩ | 120°C                           |                             |
| SLN3             | 3W           |                       | 5m - 110m          |            | ±110: R<10mΩ<br>±75: R=>10mΩ                                                 | 105°C                           |                             |
| SLN5             | 7W (5W)**    | 3m - 200m             | —                  |            | ±110: R<10mΩ<br>±75: R=>10mΩ                                                 | 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

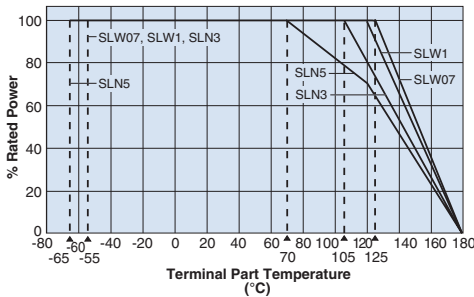
\*\*\* SLW07 offers only E24 series

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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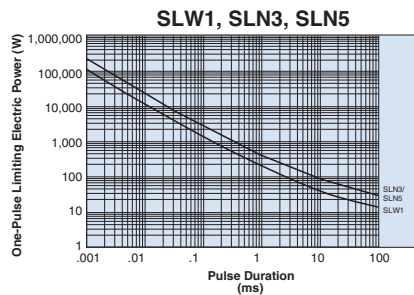
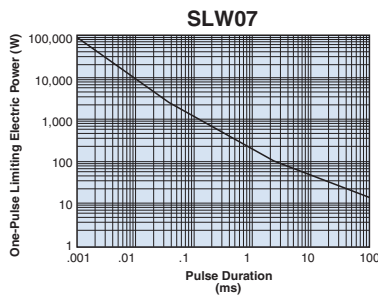
### environmental applications

#### 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



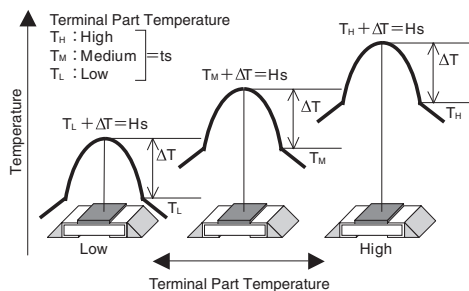
The maximum applicable voltage is equal to the max. overload voltage. Please ask us about the resistance characteristic of continuous applied pulse. The pulse endurance values are not assured values, so be sure to check the products on actual equipment when you use them.

#### Thermal Resistance

| Type  | Resistance (Ω) | Rth (°C/W) |
|-------|----------------|------------|
| SLW07 | 5m             | 26         |
|       | 22m            | 48         |
|       | 100m           | 78         |
| SLW1  | 5m             | 16         |
|       | 20m            | 39         |
|       | 100m           | 59         |
| SLN3  | 5m             | 11         |
|       | 11m            | 19         |
| SLN5  | 5m             | 11         |
|       | 200m           | 15         |

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

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°C                                                                                                                                                |
| T.C.R.                                       | Within specified T.C.R.                                           | —                                                                    | +25°C/+125°C                                                                                                                                        |
| Overload (Short time)                        | $\pm 1\%$ : SLW07, SLW1<br>$\pm 0.5\%$ : SLN3<br>$\pm 2\%$ : SLN5 | $\pm 1\%$ : SLW07, SLW1<br>$\pm 0.25\%$ : SLN3<br>$\pm 0.5\%$ : SLN5 | SLW07: 3W for 5 seconds, SLW1: 5W for 5 seconds, SLW1 (T.C.R: $\pm 50/\pm 75$ ): 4W for 5 seconds, SLN3: 10W for 5 seconds, SLN5: 15W for 5 seconds |
| Resistance to Solder Heat                    | $\pm 1\%$ : SLW07, SLW1                                           | $\pm 1\%$ : SLW07, SLW1                                              | 260°C $\pm 5^\circ\text{C}$ , 10 $\pm 1$ second                                                                                                     |
|                                              | $\pm 0.5\%$ : SLN3, SLN5                                          | $\pm 0.5\%$ : SLN3, SLN5                                             | 260°C $\pm 5^\circ\text{C}$ , 10~12 seconds                                                                                                         |
| Rapid Change of Temperature                  | $\pm 1\%$ : SLW07, SLW1                                           | $\pm 0.5\%$ : SLW07, SLW1                                            | -55°C (30 minutes), +150°C (30 minutes), 100 cycles                                                                                                 |
|                                              | $\pm 0.5\%$ : SLN3, SLN5                                          | $\pm 0.3\%$ : SLN3, SLN5                                             | -55°C (15 minutes), +150°C (15 minutes), 1000 cycles                                                                                                |
| Moisture Resistance                          | $\pm 2\%$ : SLW07, SLW1                                           | $\pm 1\%$ : SLW07, SLW1                                              | 40°C $\pm 2^\circ\text{C}$ , 90%~95%RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle                                                                     |
|                                              | $\pm 0.5\%$ : SLN3, SLN5                                          | $\pm 0.35\%$ : SLN3, SLN5                                            | SLN3: 85°C $\pm 2^\circ\text{C}$ , 85% RH, 1000 hours, 0.3W<br>SLN5: 85°C $\pm 2^\circ\text{C}$ , 85% RH, 1000 hours, 0.7W                          |
| Endurance of Rated Terminal Part Temperature | $\pm 2\%$                                                         | $\pm 1\%$<br>$\pm 1.2\%$ : SLN5                                      | Terminal part temperature: 125°C (SLW07), 120 °C (SLW1, SLN5: 5W), 105°C (SLN3), 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle, 70°C (SLN5: 7W)           |
| Low Temperature Exposure                     | $\pm 0.5\%$                                                       | $\pm 0.25\%$                                                         | SLW07, SLW1: -55°C, 1 hour; SLN3, SLN5: -65°C, 24 hours                                                                                             |

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