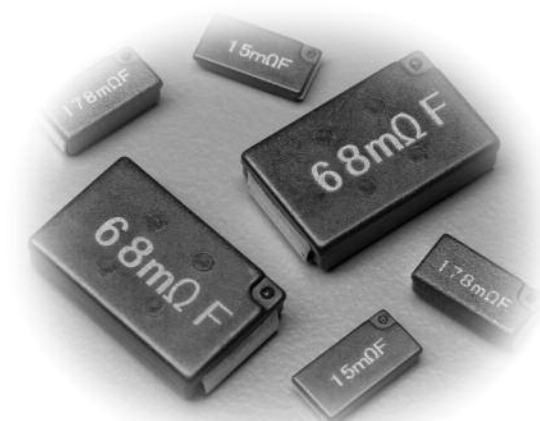
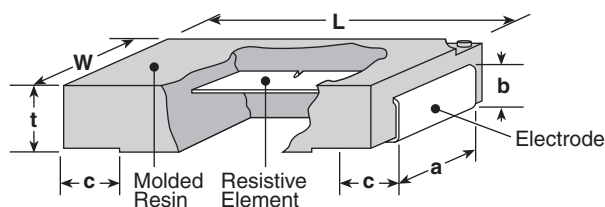




### features

- Surface mount type
- Flameproof UL94V0 molded polymer case
- Excellent dimension accuracy, mountability and shock resistance
- Low profile type available (TSL)
- Marking: Black body color with white marking or laser marking
- 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                       |
| SL07/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)  |
| SL1/SLW1, SLZ1 (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)  |
| SL2/SL3 (4528)        | .453±.012<br>(11.5±0.3) | .276±.008<br>(7.0±0.2) | .098±.008<br>(2.5±0.2) | .197±.008<br>(5.0±0.2) | .067±.008<br>(1.7±0.2) | .102±.02<br>(2.6±0.5)   |
| SLN2/SLN3 (4528)      | .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) |
| TSL1 (2512)           | .248±.012<br>(6.3±0.3)  | .122±.008<br>(3.1±0.2) | .039±.008<br>(1.0±0.2) | .094±.008<br>(2.4±0.2) | .028±.008<br>(0.7±0.2) | .047±.012<br>(1.2±0.3)  |

### ordering information

New Part #

| SL                      | 1                                                              | T                                                                     | TE                                                                                                                                                                                      | 20L0                                                                                                                                                                                                                                                                                                         | F                                      |
|-------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| Type                    | Size & Power Ratings                                           | Termination Material                                                  | Packaging                                                                                                                                                                               | Nominal Resistance                                                                                                                                                                                                                                                                                           | Tolerance                              |
| SL<br>SLZ<br>SLN<br>TSL | 07: 0.75W<br>W07: 1W*<br>1: 1W<br>W1: 1.5W*<br>2: 2W<br>3: 3W* | T: Sn<br>L: SnPb only<br>SL1:<br>105mΩ ~ 22MΩ<br>SL2:<br>365mΩ ~ 22MΩ | SL07, SLW1, SL1, SLZ1, TSL-<br>(TE: 7" embossed plastic)<br>SL2, SLN2, SLN3, SL3-<br>TED: 10" embossed plastic<br>For further information on<br>packaging please refer to<br>Appendix A | ±2%, ±5%: 2 significant<br>figures + 1 multiplier "R"<br>indicates decimal on<br>value <10Ω<br>±0.5%, ±1%: 3 significant<br>figures + 1 multiplier "R"<br>indicates decimal on<br>value <100Ω<br>All values less than 0.1Ω<br>(100mΩ) are expressed in<br>mΩ with "L" as decimal<br>Example: 20mΩ, 1% = 20L0 | D: ±0.5%<br>F: ±1%<br>G: ±2%<br>J: ±5% |

\* Please ask us separately about Ratings and Performance

### applications and ratings

|     | Part Designation | Power Rating | T.C.R.<br>(ppm/°C)<br>Max.***    | Resistance Range               | Resistance Tolerance<br>E-24*                  | Absolute Maximum Working Voltage               | Absolute Maximum Overload Voltage | Operating Temperature Range |
|-----|------------------|--------------|----------------------------------|--------------------------------|------------------------------------------------|------------------------------------------------|-----------------------------------|-----------------------------|
| NEW | SL07             | 0.75W        | 0~200: R=<10mΩ<br>0~150: R=>11mΩ | 5mΩ - 100mΩ                    | (F: ±1%)<br>(J: ±5%)                           | —                                              | —                                 | -55°C to +180°C             |
|     | SLW07            | 1W           | 0~200: R=<10mΩ<br>0~150: R=>11mΩ | 5mΩ - 100mΩ                    | (F: ±1%)<br>(J: ±5%)                           | —                                              | —                                 |                             |
|     | SL1              | 1W           | ±180: R=<13mΩ<br>±100: R=>15mΩ   | 10mΩ - 1MΩ                     | (D: ±0.5%)                                     | 200V                                           | 400V                              |                             |
|     |                  |              |                                  | 5mΩ - 1MΩ                      | (F: ±1%)                                       |                                                |                                   |                             |
|     |                  |              |                                  | 3mΩ, 4mΩ                       | (G: ±2%)                                       |                                                |                                   |                             |
|     |                  |              |                                  | 3mΩ ~ 22MΩ                     | (J: ±5%)                                       |                                                |                                   |                             |
| NEW | SLW1             | 1.5W         | ±180: R=<13mΩ<br>±100: R=>15mΩ   | 10mΩ - 100mΩ                   | (D: ±0.5%)                                     | —                                              | —                                 |                             |
|     |                  |              |                                  | 5mΩ - 100mΩ                    | (F: ±1%)                                       |                                                |                                   |                             |
|     |                  |              |                                  | 3mΩ, 4mΩ                       | (G: ±2%)                                       |                                                |                                   |                             |
|     |                  |              |                                  | 3mΩ ~ 100mΩ                    | (J: ±5%)                                       |                                                |                                   |                             |
|     | SL2              | 2W           | ±180: R=<10mΩ<br>±100: R=>11mΩ   | 10mΩ - 200mΩ                   | (D: ±0.5%)                                     | 500V                                           | 1000V                             |                             |
|     |                  |              |                                  | 5mΩ ~ 1MΩ                      | (F: ±1%)                                       |                                                |                                   |                             |
|     |                  |              |                                  | 3mΩ, 4mΩ                       | (G: ±2%)                                       |                                                |                                   |                             |
|     |                  |              |                                  | 3mΩ - 22MΩ                     | (J: ±5%)                                       |                                                |                                   |                             |
|     | SLN2             | 2W           | ±110: R<10mΩ<br>±75: R=>10mΩ     | 5mΩ - 200mΩ                    | (D: ±0.5%)<br>(F: ±1%)<br>(G: ±2%)<br>(J: ±5%) | —                                              | —                                 |                             |
|     | NEW              | SLN3         | 3W                               | ±110: R<10mΩ<br>±75: R=>10mΩ   | 5mΩ - 110mΩ                                    | (D: ±0.5%)<br>(F: ±1%)<br>(G: ±2%)<br>(J: ±5%) | —                                 |                             |
|     |                  | SL3          | 3W                               | ±180: R=<10mΩ<br>±100: R=>11mΩ | 10mΩ - 100mΩ                                   | (D: ±0.5%)                                     | —                                 |                             |
|     | 5mΩ - 100mΩ      |              |                                  |                                | (F: ±1%)                                       |                                                |                                   |                             |
|     | 5mΩ - 100mΩ      |              |                                  |                                | (J: ±5%)                                       |                                                |                                   |                             |
|     | SLZ1**           | —            | 4000 Max.                        | 0.5mΩ Max.                     | —                                              | —                                              | —                                 |                             |
|     | TSL1             | 1W           | ±180: R=<13mΩ<br>±100: R=>15mΩ   | 10mΩ - 100mΩ                   | (D: ±0.5%)                                     | —                                              | —                                 |                             |
|     |                  |              |                                  | 5mΩ - 100mΩ                    | (F: ±1%)                                       |                                                |                                   |                             |
|     |                  |              |                                  | 5mΩ - 100mΩ                    | (J: ±5%)                                       |                                                |                                   |                             |

\* 3m, 4m, 5m, 6m, 7m, 8m, 9m also available inside resistance range

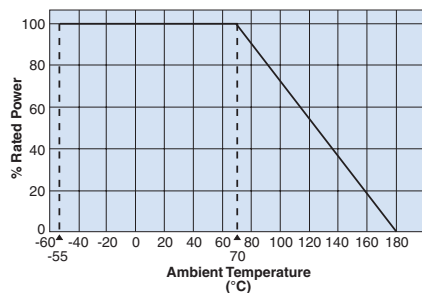
\*\* SLZ1: Current rating: 44A

\*\*\* Please contact factory for T.C.R.: ±50ppm/°C and ±75ppm/°C

### environmental applications

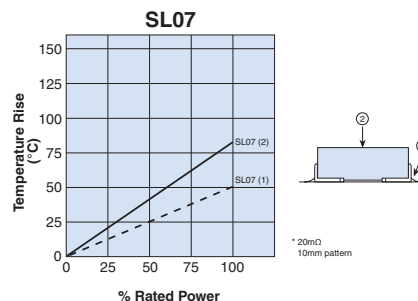
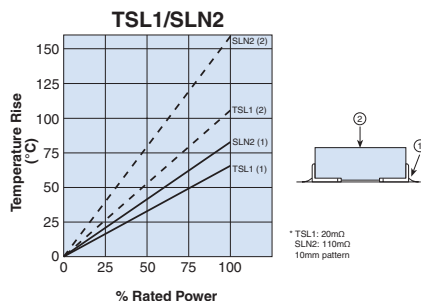
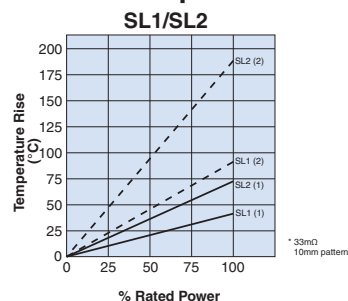
#### Derating Curve

(SL07, SL1, SL2, SLN2, TSL1)



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.  
(Please ask separately us about Derating Curve for SLW07, SLW1, SL3, SLN3, SLZ1).

#### Surface Temperature Rise



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.

#### Performance Characteristics

| Parameter                   | Requirement $\Delta R \pm\%$<br>Limit               | Typical                                              | Test Method                                                                                                                |
|-----------------------------|-----------------------------------------------------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Resistance                  | Within specified tolerance                          | —                                                    | 25°C                                                                                                                       |
| T.C.R.                      | Within specified T.C.R.                             | —                                                    | +25°C/+125°C                                                                                                               |
| Overload (Short time)       | SL07, TSL1,SL1, SL2: $\pm 1\%$<br>SLN2: $\pm 0.5\%$ | SL07, TSL1,SL1, SL2: $\pm 1\%$<br>SLN2: $\pm 0.25\%$ | SL07: Rated power x 4 for 5 seconds, TSL1: Rated power x 2.5 for 5 seconds, SL1, SL2, SLN2: Rated power x 5 for 5 seconds, |
| Resistance to Solder Heat   | SL07, TSL1,SL1, SL2: $\pm 1\%$                      | SL07, TSL1,SL1, SL2: $\pm 1\%$                       | 260°C $\pm 5^\circ\text{C}$ , 10 $\pm 1$ second                                                                            |
|                             | SLN2: $\pm 0.5\%$                                   | SLN2: $\pm 0.5\%$                                    | 260°C $\pm 5^\circ\text{C}$ , 10~12 seconds                                                                                |
| Rapid Change of Temperature | SL07, TSL1,SL1, SL2: $\pm 1\%$                      | SL07, TSL1,SL1, SL2: $\pm 0.5\%$                     | -55°C (30 minutes), +150°C (30 minutes), 100 cycles                                                                        |
|                             | SLN2: $\pm 0.5\%$                                   | SLN2: $\pm 0.25\%$                                   | -55°C (15 minutes), +150°C (15 minutes), 1000 cycles                                                                       |
| Moisture Resistance         | SL07, TSL1,SL1, SL2: $\pm 2\%$                      | SL07, TSL1,SL1, SL2: $\pm 0.5\%$                     | 40°C $\pm 2^\circ\text{C}$ , 90%~95%RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle                                            |
|                             | SLN2: $\pm 0.5\%$                                   | SLN2: $\pm 0.25\%$                                   | 85°C $\pm 2^\circ\text{C}$ , 85% $\pm 3\%$ RH, 1000 hours, Rated power x 0.1                                               |
| Endurance at 70°C           | SL07, TSL1,SL1, SL2: $\pm 2\%$<br>SLN2: $\pm 1\%$   | $\pm 0.5\%$                                          | 70°C $\pm 2^\circ\text{C}$ , 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle                                                       |
| Low Temperature Exposure    | $\pm 0.5\%$                                         | $\pm 0.25\%$                                         | SL07, TSL1, SL1, SL2: -55°C, 1 hour; SLN2: -65°C, 24 hours                                                                 |

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