

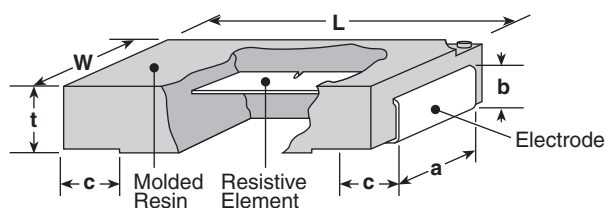
## surface mount molded current sense resistor



### features

- Surface mount power resistors
- Flame retardant type (UL94V0)
- Current detecting resistors for power supplies, etc.
- Metal plate terminals
- Marking: Black body color with teal 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.

### dimensions and construction



| Size Code | Dimensions inches (mm) |                        |                        |                        |                        |                        |
|-----------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
|           | L                      | W                      | t                      | a                      | b                      | c                      |
| NPR1      | .295±.02<br>(7.5±0.5)  | .177±.012<br>(4.5±0.3) | .079±.012<br>(2.0±0.3) | .098±.012<br>(2.5±0.3) | .051±.012<br>(1.3±0.3) | .055±.012<br>(1.4±0.3) |
| NPR2      | .472±.02<br>(12.0±0.5) | .315±.012<br>(8.0±0.3) | .157±.02<br>(4.0±0.5)  | .157±.012<br>(4.0±0.3) | .118±.02<br>(3.0±0.5)  | .059±.02<br>(1.5±0.5)  |

### ordering information

| New Part # | NPR | 1            | T  | TE  | 100   | J                           |
|------------|-----|--------------|--|---|---|-----------------------------|
| Type       |     | Power Rating | Termination Material   | Packaging                                   | Nominal Resistance  | Tolerance                   |
|            |     | 1<br>2       | T: Sn<br>(Other termination styles may be available, please contact factory for options) | TE: Embossed plastic<br>(1,000 pieces/reel) | ±1%: 3 significant figures + 1 multiplier<br>"R" indicates decimal point <100Ω<br>±5%, ±10%: 2 significant figures + 1 multiplier<br>"R" indicates decimal point <10Ω<br>All values <0.1Ω regardless of tolerance use "L" as decimal<br>Ex: 91mΩ = 91L<br>3.9mΩ = 3L9 | F: ±1%<br>J: ±5%<br>K: ±10% |

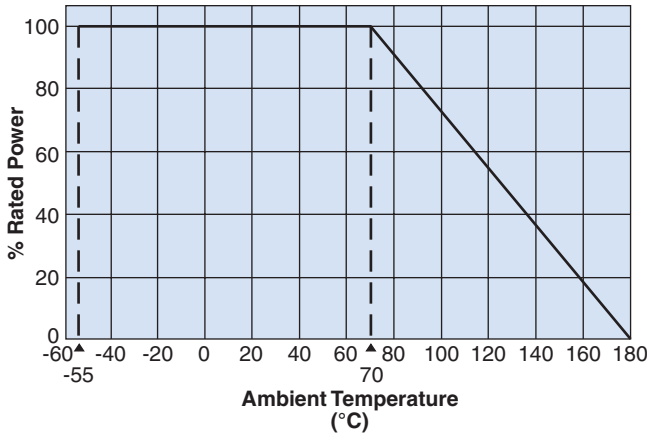
For further information on packaging, please refer to Appendix A.

### applications and ratings

| Part Designation | Power Rating | T.C.R. (ppm/°C) Max.         | Resistance Range E-24 |             |               | Absolute Maximum Working Voltage | Absolute Maximum Overload Voltage | Rated Ambient Temperature | Operating Temperature Range |
|------------------|--------------|------------------------------|-----------------------|-------------|---------------|----------------------------------|-----------------------------------|---------------------------|-----------------------------|
|                  |              |                              | (F±1%)                | (J±5%)      | (K±10%)       |                                  |                                   |                           |                             |
| NPR1             | 1W           | ±100: R≥0.1Ω<br>±200: R<0.1Ω | 0.1Ω - 10MΩ           | 10mΩ - 22MΩ | 3.9mΩ - 9.1mΩ | 350V                             | 700V                              | +70°C                     | -55°C to +180°C             |
| NPR2             | 2W           |                              |                       |             |               | 500V                             | 1000V                             |                           |                             |

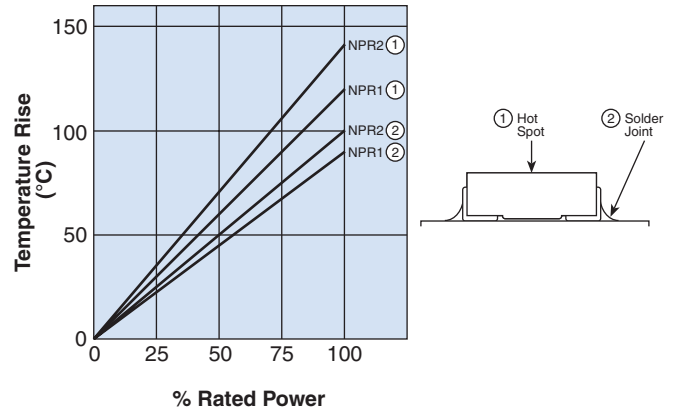
### environmental applications

#### 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.

#### 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 Δ R ±%         |         | Test Method  |
|-----------------------------|----------------------------|---------|--|
|                             | Limit                      | Typical |  |
| Resistance                  | Within regulated tolerance | —       | 25°C   |
| T.C.R.                      | Within specified T.C.R.    | —       | +25°C/+125°C   |
| Overload                    | ±1.0%                      | ±1.0%   | Rated voltage x 2.5 for 5 seconds                                |
| Resistance to Solder Heat   | ±1.0%                      | ±1.0%   | 260°C ± 5°C, 10 seconds ± 1 second                               |
| Rapid Change of Temperature | ±1.0%                      | ±1.0%   | -40°C (30 minutes), +155°C (30 minutes), 5 cycles                |
| Moisture Resistance         | ±2.0%                      | ±1.5%   | 40°C ± 2°C, 90 - 95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle |
| Endurance at 70°C           | ±2.0%                      | ±0.5%   | 70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle              |
| Low Temperature Operation   | ±0.5%                      | ±0.25%  | -55°C, 1 hour  |

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