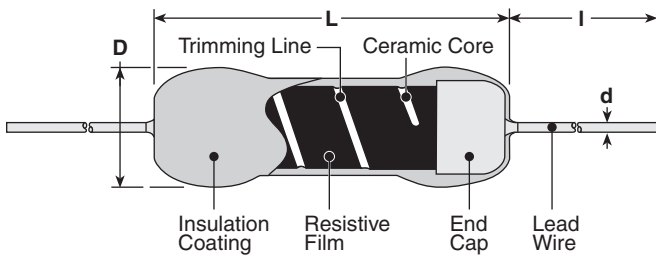


**features**

- MIL-R-10509 approved and listed on the QPL
- Suitable for automatic machine insertion
- Marking: Blue-gray body color with alpha-numeric black marking per military requirements
- Products with lead-free terminations meet EU RoHS and China RoHS requirements

**dimensions and construction**



| Type   | Dimensions inches (mm) |                       |               |               |
|--------|------------------------|-----------------------|---------------|---------------|
|        | L (ref.)               | D                     | d             | I             |
| RNS1/8 | .250±.04<br>(6.35±1)   | .091±.02<br>(2.3±0.5) | .024<br>(0.6) | 1.496<br>(38) |
| RNS1/4 | .374±.04<br>(9.5±1)    | .138±.02<br>(3.5±0.5) |               |               |
| RNS1/2 | .531±.04<br>(13.5±1)   | .138±.02<br>(3.5±0.5) |               |               |
| RNS1   | .610±.04<br>(15.5±1)   | .216±.02<br>(5.5±0.5) |               |               |

**ordering information**

|            |            |   |                                     |                      |                    |                    |  |   |
|------------|------------|---|-------------------------------------|----------------------|--------------------|--------------------|--|---|
| New Part # | <b>RNS</b> | <b>1/8</b>                                      | <b>E</b>                            | <b>C</b>             | <b>T52</b>         | <b>R</b>           | <b>1001</b>  | <b>F</b>                                      |
|            | Type       | Power Rating                                    | T.C.R.                              | Termination Material | Taping and Forming | Packaging          | Nominal Resistance   | Tolerance                                     |
|            |            | 1/8: 0.125W<br>1/4: 0.25W<br>1/2: 0.5W<br>1: 1W | Y: ±5<br>T: ±10<br>E: ±25<br>C: ±50 | C: SnCu              | T26, T52           | A: Ammo<br>R: Reel | 3 significant figures + 1 multiplier<br>"R" indicates decimal on value <100Ω | B: ±0.1%<br>C: ±0.25%<br>D: ±0.5%<br>F: ±1.0% |

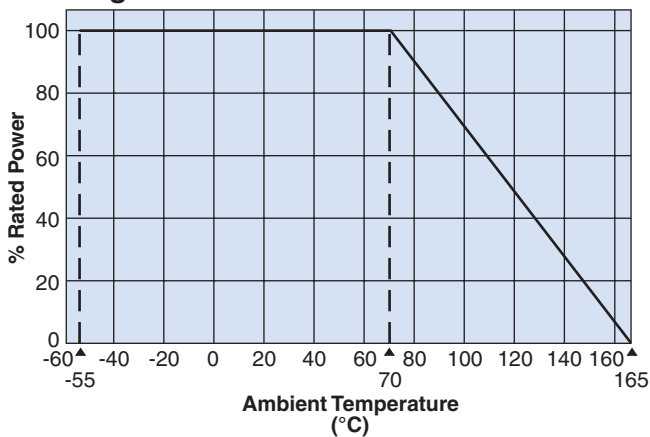
For further information on packaging, please refer to Appendix C.

## applications and ratings

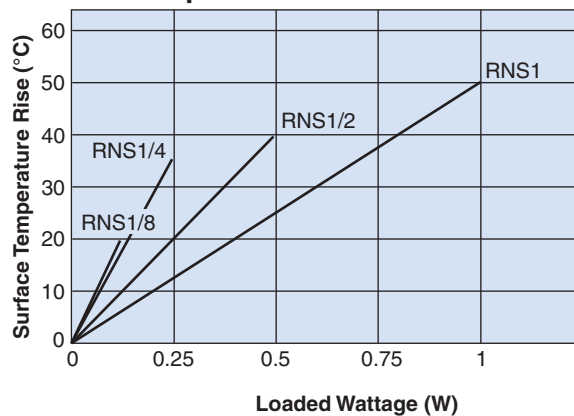
| Part Designation | Power Rating | T.C.R. (ppm/°C) Max. | Resistance Range E-24, E-192 (B±0.1%) | Resistance Range E-24, E-192 (C±0.25%) | Resistance Range E-24, E-192 (D±0.5%) | Resistance Range E-24, E-96 (F±1.0%) | Absolute Maximum Working Voltage | Absolute Maximum Overload Voltage | Minimum Dielectric Withstanding Voltage | Rated Ambient Temperature | Operating Temperature Range |      |                 |
|------------------|--------------|----------------------|---------------------------------------|--|---------------------------------------|--------------------------------------|----------------------------------|-----------------------------------|---|---------------------------|-----------------------------|------|-----------------|
| RNS1/8           | 0.125W       | Y: ±5                | 100Ω - 100kΩ                          | 100Ω - 100kΩ                           | 100Ω - 100kΩ                          | 100Ω - 100kΩ                         | 200V                             | 400V                              | 500V                                    | 70°C                      | -25°C to +85°C              |      |                 |
|                  |              | T: ±10               | 100Ω - 200kΩ                          | 100Ω - 200kΩ                           | 100Ω - 200kΩ                          | 100Ω - 200kΩ                         |                                  |                                   |   |                           |                             |      |                 |
|                  |              | E: ±25               | 5.1Ω - 750kΩ                          | 5.1Ω - 1.62MΩ                          | 0.2Ω - 2MΩ                            | 0.2Ω - 2MΩ                           |                                  |                                   |   |                           |                             |      |                 |
|                  |              | C: ±50               | 5.1Ω - 750kΩ                          | 5.1Ω - 1.62MΩ                          | 0.2Ω - 2MΩ                            | 0.2Ω - 2MΩ                           |                                  |                                   |   |                           |                             |      |                 |
| RNS1/4           | 0.25W        | E: ±25               | 5.1Ω - 1MΩ                            | 5.1Ω - 2MΩ                             | 0.2Ω - 2MΩ                            | 0.2Ω - 2MΩ                           | 250V                             | 500V                              | 700V                                    | 70°C                      | -55°C to +165°C             |      |                 |
|                  |              | C: ±50               | 5.1Ω - 1.5MΩ                          | 5.1Ω - 2MΩ                             | 0.2Ω - 5.1MΩ                          | 0.2Ω - 5.1MΩ                         |                                  |                                   |   |                           |                             |      |                 |
| RNS1/2           | 0.50W        | E: ±25               | 5.1Ω - 1.5MΩ                          | 5.1Ω - 2MΩ                             | 0.2Ω - 2.4MΩ                          | 0.2Ω - 4.7MΩ                         | 300V                             | 600V                              | 700V                                    |                           |                             | 70°C | -55°C to +165°C |
|                  |              | C: ±50               | 5.1Ω - 2MΩ                            | 5.1Ω - 2.4MΩ                           | 0.2Ω - 5.1MΩ                          | 0.2Ω - 5.1MΩ                         |                                  |                                   |   |                           |                             |      |                 |
| RNS1             | 1W           | E: ±25               | 5.1Ω - 2MΩ                            | 5.1Ω - 2.4MΩ                           | 0.2Ω - 5.1MΩ                          | 0.2Ω - 5.1MΩ                         | 350V                             | 700V                              | 1000V                                   | 70°C                      | -55°C to +165°C             |      |                 |
|                  |              | C: ±50               | 5.1Ω - 2.4MΩ                          | 5.1Ω - 2.4MΩ                           | 0.2Ω - 5.1MΩ                          | 0.2Ω - 6.8MΩ                         |                                  |                                   |   |                           |                             |      |                 |

## environmental applications

### Derating Curve



### Surface Temperature Rise



## Performance Characteristics

| Parameter                   | Requirement $\Delta R \pm(\% + 0.05\Omega)$ |         | Test Method  |
|-----------------------------|---|---------|--|
|                             | Limit                                       | Typical |  |
| Resistance                  | Within specified tolerance                  | —       | 25°C   |
| T.C.R.                      | Within specified T.C.R.                     | —       | Y, T: +25°C/+65°C; E, C: +25°C/+125°C  |
| Overload (Short time)       | ±0.25%                                      | ±0.15%  | Rated voltage x 2.5 or max. overload voltage for 5 seconds, whichever is lower |
| Resistance to Solder Heat   | ±0.2%                                       | ±0.075% | 350°C ± 10°C, 3.5 seconds ± 0.5 second   |
| Rapid Change of Temperature | ±0.2%                                       | ±0.075% | -55°C (30 minutes), +85°C (30 minutes), 5 cycles                               |
| Moisture Resistance         | ±0.75%                                      | ±0.5%   | 40°C ± 2°C, 90 - 95% RH, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle               |
| Endurance at 70°C           | ±0.5%                                       | ±0.35%  | 70°C ± 2°C, 1000 hours, 1.5 hr ON, 0.5 hr OFF cycle                            |