

- Features:
- Precision metal film
  - Superior electrical, TCR performances
  - Flame-retardant coatings are standard
  - Panasert available (selected sizes: contact factory)
  - RNM (mini) an ideal choice where size constraints apply
  - RN 5% replaces MP series
  - RoHS compliant / lead-free available (RNF/RNMF)
  - Lower or higher resistance values may be possible (contact factory)

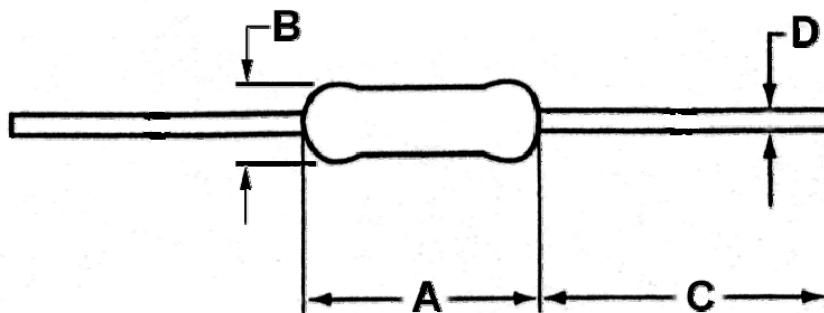


| Electrical Specifications |         |                                |                                       |                                       |                                          |                               |            |             |             |         |         |
|---------------------------|---------|--------------------------------|---------------------------------------|---------------------------------------|------------------------------------------|-------------------------------|------------|-------------|-------------|---------|---------|
| Type / Code               | Mil Ref | Power Rating<br>(Watts) @ 70°C | Maximum<br>Working<br>Voltage (Vrms)① | Maximum<br>Overload<br>Voltage (Vrms) | Resistance<br>Temperature<br>Coefficient | Ohmic Range (Ω) and Tolerance |            |             |             |         |         |
|                           |         |                                |                                       |                                       |                                          | 0.1%                          | 0.25%      | 0.5%        | 1%          | 2%      | 5%      |
| RN 1/8                    | RN 50   | 0.125W                         | 200V                                  | 400V                                  | ±25 ppm/°C                               | 100 - 100K                    | 100 - 100K | 49.9 - 499K | 49.9 - 499K | -       | -       |
|                           |         |                                |                                       |                                       | ±50 ppm/°C                               | 100 - 100K                    | 100 - 100K | 10 - 499K   | 10 - 1M     | -       | -       |
|                           |         |                                |                                       |                                       | ±100 ppm/°C                              | 100 - 100K                    | 100 - 100K | 10 - 511K   | 1 - 22M     | 1 - 22M | 1 - 22M |
| RN 1/4                    | RN 55   | 0.250W                         | 250V                                  | 500V                                  | ±10 ppm/°C                               | 100 - 100K                    | -          | -           | -           | -       | -       |
|                           |         |                                |                                       |                                       | ±25 ppm/°C                               | 10 - 2.2M                     | 10 - 2.2M  | 10 - 2.2M   | 10 - 1M     | -       | -       |
|                           |         |                                |                                       |                                       | ±50 ppm/°C                               | 10 - 2.2M                     | 10 - 2.2M  | 10 - 2.2M   | 10 - 1M     | -       | -       |
|                           |         |                                |                                       |                                       | ±100 ppm/°C                              | 10 - 2.2M                     | 10 - 2.2M  | 10 - 2.2M   | 10 - 1M     | 1 - 10M | 1 - 10M |
| RN 1/2                    | RN 60   | 0.500W                         | 350V                                  | 700V                                  | ±25 ppm/°C                               | 100 - 100K                    | 100 - 100K | 49.9 - 499K | 49.9 - 499K | -       | -       |
|                           |         |                                |                                       |                                       | ±50 ppm/°C                               | 100 - 100K                    | 100 - 100K | 10 - 511K   | 10 - 1M     | -       | -       |
|                           |         |                                |                                       |                                       | ±100 ppm/°C                              | 100 - 100K                    | 100 - 100K | 10 - 511K   | 1 - 5.1M    | 1 - 10M | 1 - 10M |
| RN 1                      | RN 65   | 1.000W                         | 350V                                  | 700V                                  | ±25 ppm/°C                               | -                             | -          | 10 - 511K   | 10 - 1M     | -       | -       |
|                           |         |                                |                                       |                                       | ±50 ppm/°C                               | -                             | -          | 10 - 511K   | 10 - 1M     | -       | -       |
|                           |         |                                |                                       |                                       | ±100 ppm/°C                              | -                             | -          | 10 - 511K   | 10 - 1M     | -       | -       |
| RN 2                      | -       | 2.000W                         | 350V                                  | 800V                                  | ±25 ppm/°C                               | -                             | -          | 10 - 511K   | 10 - 1M     | -       | -       |
|                           |         |                                |                                       |                                       | ±50 ppm/°C                               | -                             | -          | 10 - 511K   | 10 - 1M     | -       | -       |
|                           |         |                                |                                       |                                       | ±100 ppm/°C                              | -                             | -          | 10 - 511K   | 10 - 1M     | -       | 10 - 1M |
| RNM 1/4                   | -       | 0.250W                         | 200V                                  | 400V                                  | ±25 ppm/°C                               | 100 - 100K                    | 100 - 100K | 49.9 - 499K | 49.9 - 499K | -       | -       |
|                           |         |                                |                                       |                                       | ±50 ppm/°C                               | 100 - 100K                    | 100 - 100K | 10 - 511K   | 10 - 1M     | -       | -       |
|                           |         |                                |                                       |                                       | ±100 ppm/°C                              | 100 - 100K                    | 100 - 100K | 10 - 511K   | 10 - 1M     | 1 - 1M  | 1 - 1M  |
| RNM 1/2                   | RL 07   | 0.500W                         | 350V                                  | 600V                                  | ±25 ppm/°C                               | 100 - 100K                    | 100 - 100K | 49.9 - 499K | 49.9 - 499K | -       | -       |
|                           |         |                                |                                       |                                       | ±50 ppm/°C                               | 49.9 - 1M                     | 49.9 - 1M  | 10 - 1M     | 1 - 1M      | -       | -       |
|                           |         |                                |                                       |                                       | ±100 ppm/°C                              | 49.9 - 1M                     | 49.9 - 1M  | 10 - 1M     | 1 - 1M      | 1 - 1M  | 1 - 1M  |

① Lesser of √PR or maximum working voltage.

## How to Order

| SEI Type |               | Code | TCR       | Nominal Resistance | Tolerance | Packaging |                   |         |                  |
|----------|---------------|------|-----------|--------------------|-----------|-----------|-------------------|---------|------------------|
| RN       |               | 1/4  | T1        | 4.75K              | 1%        | R         |                   |         |                  |
| Type     | Description   | Code | TCR       |                    | Tolerance | Values    | SEI Types         | Pkg Qty | Code Description |
| RN       | EIA standard  | 1/8  | T1 100ppm |                    | 0.1%      | E96       | 1/8, 1/4, RNM 1/2 | 5,000   | R Reel           |
| RNM      | Mini          | 1/4  | T2 50ppm  |                    | 0.25%     | E96       | 1/2, 1            | 2,500   |                  |
| RNF      | Standard RoHS | 1/2  | T9 25ppm  |                    | 0.5%      | E96       | 1/8, 1/4, RNM 1/2 | 5,000   |                  |
| RNMF     | Mini RoHS     | 1    | TB 10ppm  |                    | 1%        | E96, E24  | 1/2               | 2,000   | T Ammo           |
| PRN      | Panasert      | 2    |           |                    | 5%        | E24       | 1                 | 1,000   |                  |
| PRNF     | Pana - RoHS   |      |           |                    |           |           | 1/8, 1/4, 1/2     | 1,000   | A Bulk           |
|          |               |      |           |                    |           |           | 2                 | 1,000   | R Reel           |
|          |               |      |           |                    |           |           |                   |         | T Ammo           |
|          |               |      |           |                    |           |           |                   |         | A Bulk           |



| Mechanical Specifications |                             |                              |                         |                              |              |
|---------------------------|-----------------------------|------------------------------|-------------------------|------------------------------|--------------|
| Type / Code               | A<br>Body Length            | B<br>Body Diameter           | C<br>Lead Length (Bulk) | D<br>Lead Diameter           | Units        |
| RN 1/8                    | 0.13 ± 0.012<br>3.3 ± 0.3   | 0.070 ± 0.012<br>1.8 ± 0.3   | 1.10 ± 0.12<br>28 ± 3   | 0.018 ± 0.003<br>0.45 ± 0.07 | inches<br>mm |
| RN 1/4                    | 0.25 ± 0.026<br>6.35 ± 0.65 | 0.093 ± 0.010<br>2.35 ± 0.25 | 1.10 ± 0.12<br>28 ± 3   | 0.022 ± 0.003<br>0.56 ± 0.08 | inches<br>mm |
| RN 1/2                    | 0.34 ± 0.030<br>8.75 ± 0.75 | 0.108 ± 0.039<br>2.75 ± 1.0  | 1.10 ± 0.197<br>28 ± 5  | 0.26 ± 0.004<br>0.65 ± 0.1   | inches<br>mm |
| RN 1                      | 0.433 ± 0.04<br>11 ± 1      | 0.177 ± 0.02<br>4.50 ± 0.5   | 1.18 ± 0.12<br>30 ± 3   | 0.030 ± 0.002<br>0.75 ± 0.05 | inches<br>mm |
| RN 2                      | 0.59 x 0.04<br>15 x 1       | 0.2 x 0.02<br>5 x 0.5        | 1.18 ± 0.12<br>30 ± 3   | 0.027 x 0.004<br>0.7 x 0.1   | inches<br>mm |
| RNM 1/4                   | 0.13 ± 0.011<br>3.3 ± 0.3   | 0.070 ± 0.003<br>1.78 ± 0.08 | 1.10 ± 0.12<br>28 ± 3   | 0.017 ± 0.002<br>0.44 ± 0.05 | inches<br>mm |
| RNM 1/2                   | 0.25 ± 0.026<br>6.35 ± 0.65 | 0.093 ± 0.010<br>2.35 ± 0.25 | 1.10 ± 0.12<br>28 ± 3   | 0.022 ± 0.003<br>0.56 ± 0.08 | inches<br>mm |

| Performance Characteristics |                         |             |
|-----------------------------|-------------------------|-------------|
| Test                        | Standard / Method       | Requirement |
| Biased Humidity             | MIL-STD 202, Method 103 | ± 1.5%      |
| Resistance to Solder Heat   | MIL-STD 202, Method 210 | ± 0.5%      |
| Insulation Resistance       | JIS C 5202 5.6          | ± 0.5%      |
| Load Life                   | MIL-STD 202, Method 208 | ± 1%        |
| Terminal Strength           | MIL-STD 202, Method 211 | ± 0.2%      |
| Temperature Cycling         | JESD22 Method JA-104    | ± 1%        |
| Moisture Resistance         | MIL-STD 202, Method 106 | ± 0.5%      |

Operating Temperature Range: -55°C to +155°C