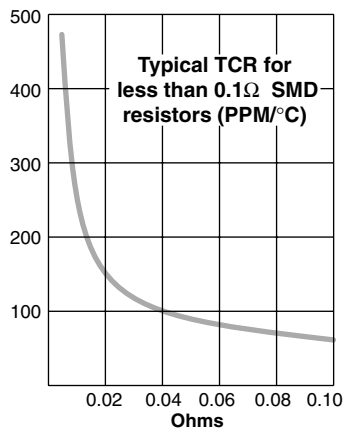


## FEATURES

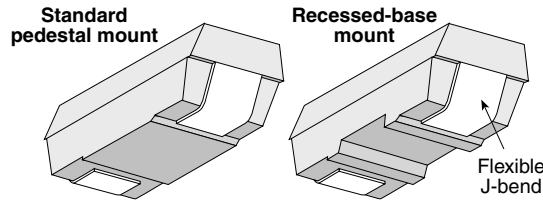
- Tolerance 1%-5% standard
- Twelve wattage ratings
- Seven package sizes
- Two mounting designs to accommodate your soldering process
- Four power resistor technologies to optimize your operating performance:
  1. Carbon and Ceramic composition for high inrush current, low inductance
  2. Metal film for high ohmic value and low T.C.
  3. Wire element for inrush current combined with low ohmic values, down to 0.005Ω and close tolerance for low T.C., low ohm values, high inrush or tight tolerance
  4. Power film for high ohmic value and high wattage
- Flexible J-bend terminations



# Surface Mount Power Resistors

RC Series: carbon composition ( $\frac{1}{4}$  &  $\frac{1}{2}$  watt)  
RC Series: ceramic composition (above  $\frac{1}{2}$  watt)

RF Series: metal film  
RW Series: wirewound  
RP Series: power film



| Series  | Wattage | Ohms       | Dimensions (in. / mm) |              |              |  | Voltage |
|---------|---------|------------|-----------------------|--------------|--------------|--|---------|
|         |         |            | Length                | Height       | Width        |  |         |
| RC0S2CA | 0.25    | 2.2–5.6M   | 0.394 / 10.01         | 0.159 / 4.04 | 0.159 / 4.04 |  | 250     |
| RC0R5DB | 0.50    | 2.2–20M    | 0.625 / 15.88         | 0.226 / 5.74 | 0.273 / 6.93 |  | 350     |
| RW0S6BB | 0.6     | 0.005–1K   | 0.202 / 5.14          | 0.135 / 3.42 | 0.1 / 2.54   |  | 50      |
| RF0S8BA | 0.80    | 1.0–10M    | 0.246 / 6.25          | 0.136 / 3.45 | 0.136 / 3.45 |  | 200     |
| RW1S0BA | 1.00    | 0.005–1K   | 0.246 / 6.25          | 0.136 / 3.45 | 0.136 / 3.45 |  | 50      |
| RF1S0CA | 1.00    | 1.0–10M    | 0.394 / 10.01         | 0.159 / 4.04 | 0.159 / 4.04 |  | 350     |
| RC1R0EA | 1.00    | 3.3–100K   | 0.811 / 20.60         | 0.273 / 6.93 | 0.273 / 6.93 |  | 500     |
| RP1S3CA | 1.25    | 1.0–1M     | 0.394 / 10.01         | 0.159 / 4.04 | 0.159 / 4.04 |  | 350     |
| RW1S5CA | 1.50    | 0.005–1.5K | 0.394 / 10.01         | 0.159 / 4.04 | 0.159 / 4.04 |  | 75      |
| RP1S5CB | 1.50    | 1.0–1M     | 0.407 / 10.34         | 0.222 / 5.64 | 0.226 / 5.74 |  | 350     |
| RP1R5CB | 1.50    | 1.0–1M     | 0.407 / 10.34         | 0.222 / 5.64 | 0.226 / 5.74 |  | 350     |
| RW2S0CB | 2.00    | 0.005–5K   | 0.407 / 10.34         | 0.222 / 5.64 | 0.226 / 5.74 |  | 100     |
| RW2R0CB | 2.00    | 0.005–5K   | 0.407 / 10.34         | 0.222 / 5.64 | 0.226 / 5.74 |  | 100     |
| RP2S0DA | 2.00    | 1.0–1M     | 0.455 / 11.56         | 0.226 / 5.74 | 0.24 / 6.10  |  | 500     |
| RP2R0DA | 2.00    | 1.0–1M     | 0.455 / 11.56         | 0.226 / 5.74 | 0.24 / 6.10  |  | 500     |
| RW2S0DA | 2.00    | 0.005–5K   | 0.455 / 11.56         | 0.226 / 5.74 | 0.24 / 6.10  |  | 100     |
| RW2R0DA | 2.00    | 0.005–5K   | 0.455 / 11.56         | 0.226 / 5.74 | 0.24 / 6.10  |  | 100     |
| RP2R5DB | 2.50    | 1.0–1M     | 0.655 / 16.64         | 0.226 / 5.74 | 0.273 / 6.93 |  | 500     |
| RW3R0DB | 3.00    | 0.005–13K  | 0.625 / 15.88         | 0.226 / 5.74 | 0.273 / 6.93 |  | 200     |
| RP3R0EA | 3.00    | 1.0–1M     | 0.811 / 20.60         | 0.273 / 6.93 | 0.273 / 6.93 |  | 750     |
| RW3R5EA | 3.50    | 0.005–25K  | 0.811 / 20.60         | 0.273 / 6.93 | 0.273 / 6.93 |  | 350     |

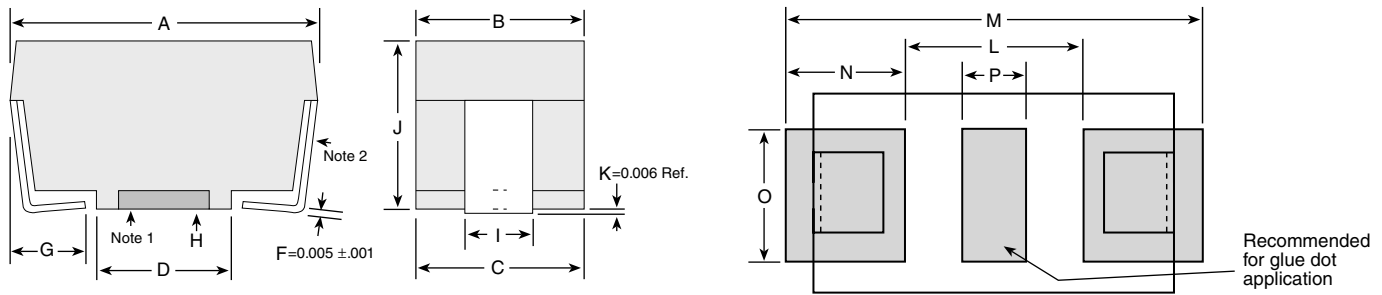
MILITARY GRADE VERSIONS AVAILABLE: CONSULT FACTORY

## PERFORMANCE SPECIFICATIONS

| Part Number* | Power (watts)* | Maximum voltage | Resistance range       |             | Temp. Coefficient |        |       | Dielectric Withstanding | Tape Size 13" reels | Quantity per reel |
|--------------|----------------|-----------------|------------------------|-------------|-------------------|--------|-------|-------------------------|---------------------|-------------------|
|              |                |                 | 1% tol.                | 5% tol.     | 0.1Ω–1Ω           | 1Ω–10Ω | 10Ω+  |                         |                     |                   |
| RC0S2CA      | 0.25           | 250             | —                      | 2.2Ω–5.6M   | —                 | ±400   | ±400  | 1000V                   | 16mm                | 1500              |
| RC0R5DB      | 0.50           | 350             | —                      | 2.2Ω–20M    | —                 | ±400   | ±400  | 1000V                   | 24mm                | 1000              |
| RW0S6BB      | 0.6            | 50              | 0.005Ω–1K              | 0.005Ω–1K   | ±90               | ±50    | ±20   | 1000V                   | 12mm                | 2500              |
| RF0S8BA      | 0.8            | 200             | 1Ω–5M                  | —           | —                 | ±100   | ±100  | 1000V                   | 12mm                | 2000              |
| RW1S0BA      | 1.0            | 50              | 0.005Ω–1K              | 0.005Ω–1K   | ±90               | ±50    | ±20   | 1000V                   | 12mm                | 2000              |
| RF1S0CA      | 1.0            | 350             | 10Ω–1M                 | 1Ω–10M      | —                 | ±200   | ±100  | 1000V                   | 16mm                | 1500              |
| RC1R0EA      | 1.0            | 500             | 3.3–100K(10% tol only) |             |                   |        | -1300 | 1000V                   | 32mm                | 750               |
| RP1S3CA      | 1.25           | 350             | —                      | 1Ω–1M       | —                 | ±250   | ±250  | 1000V                   | 16mm                | 1500              |
| RP1S5CA      | 1.5            | 75              | 0.005Ω–1.5K            | 0.005Ω–1.5K | ±90               | ±250   | ±250  | 1000V                   | 16mm                | 1500              |
| RP1S5CB      | 1.5            | 350             | —                      | 1Ω–1M       | —                 | ±250   | ±250  | 1000V                   | 16mm                | 1000              |
| RP1R5CB      | 1.5            | 350             | —                      | 1Ω–1M       | —                 | ±250   | ±250  | 1000V                   | 16mm                | 1000              |
| RW2S0CB      | 2.0            | 100             | 0.005Ω–5K              | 0.005Ω–5K   | ±90               | ±50    | ±20   | 1000V                   | 16mm                | 1000              |
| RW2R0CB      | 2.0            | 100             | 0.005Ω–5K              | 0.005Ω–5K   | ±90               | ±50    | ±20   | 1000V                   | 16mm                | 1000              |
| RP2S0DA      | 2.0            | 500             | —                      | 1Ω–1M       | —                 | ±250   | ±250  | 1000V                   | 24mm                | 1000              |
| RP2R0DA      | 2.0            | 500             | —                      | 1Ω–1M       | —                 | ±250   | ±250  | 1000V                   | 24mm                | 1000              |
| RW2S0DA      | 2.0            | 100             | 0.005Ω–5K              | 0.005Ω–5K   | ±90               | ±50    | ±20   | 1000V                   | 24mm                | 1000              |
| RW2R0DA      | 2.0            | 100             | 0.005Ω–5K              | 0.005Ω–5K   | ±90               | ±50    | ±20   | 1000V                   | 24mm                | 1000              |
| RP2R5DB      | 2.5            | 500             | —                      | 1Ω–1M       | —                 | ±250   | ±250  | 1000V                   | 24mm                | 1000              |
| RW3R0DB      | 3.0            | 200             | 0.005Ω–13K             | 0.005Ω–13K  | ±90               | ±50    | ±20   | 1000V                   | 24mm                | 1000              |
| RP3R0EA      | 3.0            | 750             | —                      | 1Ω–1M       | —                 | ±250   | ±250  | 1000V                   | 32mm                | 750               |
| RW3R5EA      | 3.5            | 350             | 0.005Ω–25K             | 0.005Ω–25K  | ±90               | ±50    | ±20   | 1000V                   | 32mm                | 750               |
| RM0R7EA      | 0.75           | 2500            | 1KΩ–1000M              | 1KΩ–1000M   | —                 | —      | ±50   | 1000V                   | 32mm                | 750               |

25°C ambient

(continued)



| Package Outline Dimensions |                  |            |           |             |            |            | PC Board Land Pattern |        |       |       |       |       |
|----------------------------|------------------|------------|-----------|-------------|------------|------------|-----------------------|--------|-------|-------|-------|-------|
| Packages                   | A                | B          | C         | D           | G          | I          | J                     | L      | M     | N     | O     | P     |
| <b>BA</b>                  | (in.) .246±.020  | .136±.005  | .133 REF  | .110±.010   | .047 Nom.  | .054±.012  | .136±.005             | .150   | .346  | .098  | .126  | .050  |
|                            | (mm) 6.248±.508  | 3.454±.127 | 3.378 REF | 2.794±.254  | 1.194 Nom. | 1.372±.305 | 3.454±.127            | 3.81   | 8.79  | 2.49  | 3.20  | 1.27  |
| <b>CA</b>                  | (in.) .394±.020  | .159±.005  | .156 REF  | .220±.010   | .062 Nom.  | .078±.012  | .159±.005             | .256   | .524  | .134  | .126  | .060  |
|                            | (mm) 10.008±.508 | 4.039±.127 | 3.962 REF | 5.588±.254  | 1.575 Nom. | 1.981±.305 | 4.038±.127            | 6.50   | 13.31 | 3.40  | 3.20  | 1.52  |
| <b>CB</b>                  | (in.) .407±.020  | .226±.005  | .222 REF  | .260±.010   | .062 Nom.  | .084±.012  | .222±.005             | .276   | .537  | .131  | .126  | .093  |
|                            | (mm) 10.338±.508 | 5.74±.127  | 5.639 REF | 6.604±.254  | 1.575 Nom. | 2.134±.305 | 5.639±.127            | 7.01   | 13.64 | 3.33  | 3.20  | 2.36  |
| <b>DA</b>                  | (in.) .455±.020  | .240±.005  | .236 REF  | .260±.010   | .062 Nom.  | .143±.012  | .226±.005             | .317   | .585  | .134  | .155  | .093  |
|                            | (mm) 11.557±.508 | 6.096±.127 | 5.994 REF | 6.604±.254  | 1.575 Nom. | 3.632±.305 | 5.740±.127            | 8.05   | 14.86 | 3.40  | 3.94  | 2.36  |
| <b>DB</b>                  | (in.) .625±.020  | .273±.005  | .268 REF  | .417±.010   | .062 Nom.  | .143±.012  | .226±.005             | .474   | .742  | .134  | .155  | .093  |
|                            | (mm) 15.875±.508 | 6.934±.127 | 6.807 REF | 10.592±.254 | 1.575 Nom. | 3.632±.305 | 5.740±.127            | 12.040 | 18.85 | 3.40  | 3.94  | 2.36  |
| <b>EA</b>                  | (in.) .811±.020  | .273±.005  | .268 REF  | .572±.010   | .093 Nom.  | .143±.012  | .273±.005             | .611   | 1.000 | .195  | .155  | .093  |
|                            | (mm) 20.599±.508 | 6.934±.127 | 6.807 REF | 14.529±.254 | 2.362 Nom. | 3.632±.305 | 6.934±.127            | 15.52  | 25.4  | 4.95  | 3.94  | 2.36  |
| <b>BB</b>                  | (in.) .202±.010  | .10±.010   | .095 REF  | .079±.010   | .050 Nom.  | .065±.012  | .135±.005             | 0.078  | 0.328 | 0.125 | 0.126 | 0.026 |
|                            | (mm) 5.140±.508  | 2.54±.127  | 2.41 REF  | 2.00±.254   | 1.280 Nom. | 1.640±.305 | 3.420±.127            | 1.98   | 8.33  | 3.18  | 3.20  | 0.66  |

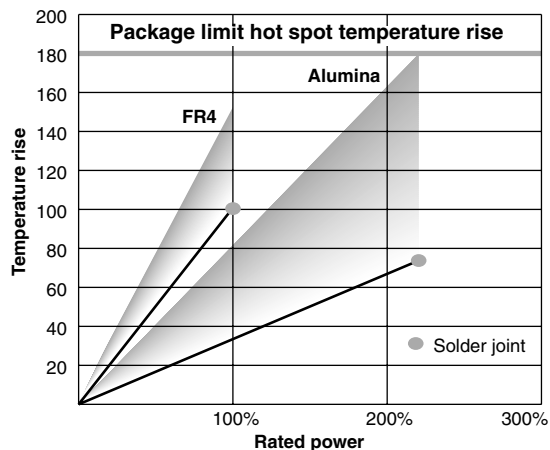
**Note 1:** Packages BA and CA are only available with a pedestal base. Packages CB and DA are available in either pedestal or recessed base. Packages DB and EA are only available in a recessed base.

**Note 2:** Test point is .020 above PCB. **Note 3:** Tape and reel dimensions per EIA 481 A except "EA" size which is 12 mm component pitch versus 16mm pitch.

\* For units where four (4) terminal Kelvin connections are required.

## EXTENSIVE ENVIRONMENTAL TESTS ENSURE OHMITE PERFORMANCE

| Construction                         | Temp. cycle<br>(-55°C to 125°C,<br>1000 cycles)                                                                                                                                                                              | Load Life<br>(1000 hours<br>at 25°C) | Immersion<br>(260°C for<br>10 sec.) | Momentary<br>Overload       |
|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------|-----------------------------|
| <b>RC</b> Carbon/Ceramic Composition | ±4.0%+.05Ω                                                                                                                                                                                                                   | ±10.0%+.05Ω                          | ±3.0%+.05Ω                          | 6.3x rated power for 5 sec. |
| <b>RF</b> Metal Film                 | ±0.5%+.05Ω                                                                                                                                                                                                                   | ±0.5%+.05Ω                           | ±0.1%+.05Ω                          | 2x rated power for 0.1 sec. |
| <b>RW</b> Wirewound                  | ±0.5%+.05Ω                                                                                                                                                                                                                   | ±3.0%+.05Ω                           | ±0.1%+.05Ω                          | 5x rated power for 5 sec.   |
| <b>RP</b> Power Film                 | ±3.0%+.05Ω                                                                                                                                                                                                                   | ±5.0%+.05Ω                           | ±0.5%+.05Ω                          | 2x rated power for 0.1 sec. |
| <b>RN</b> Wirewound, Non-inductive   | ±0.5%+.05Ω                                                                                                                                                                                                                   | ±3.0%+.05Ω                           | ±0.1%+.05Ω                          | 5x rated power for 5 sec.   |
| <b>ALL models:</b>                   | <b>Leaching</b> (260°C Solder immersion, 60 sec.)..... No visible leaching<br><b>Thermal Shock</b> (Units at -55°C, then rated power applied).. No mechanical damage<br><b>Flammability</b> ..... UL Material rating, UL94V0 |                                      |                                     |                             |



The temperature rise graph data was obtained by a selection of test substrate size and trace width for each resistor size to limit operating temperatures to safe values.

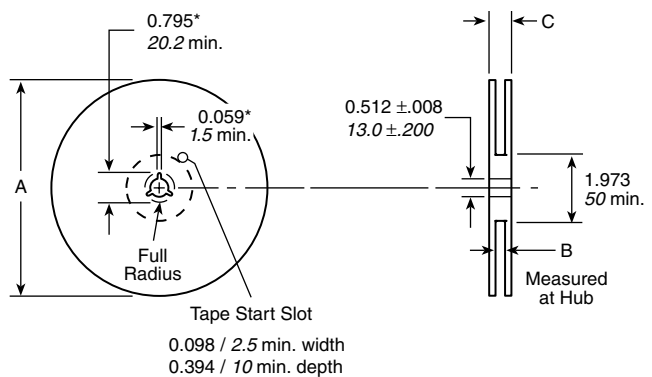
The operating temperature safe rises are either 100°C substrate temperature rise or 180°C package hot spot temperature rise at 25°C ambient.

FR4: 0.062 in. thick; 0.062 in. traces

Alumina: 0.040 in. thick; 0.010 in. traces

Engineering data available upon request.

## REEL DIMENSIONS



| Size | A nom. | B                                     | C max.       | Resistor count               |
|------|--------|---------------------------------------|--------------|------------------------------|
| 12mm | 13"    | 0.488 +0.078, -0.00 / 12.4 +2.0, -0.0 | 0.724 / 18.4 | 2000 pcs. BA or 2500 pcs. BB |
| 16mm | 13"    | 0.646 +0.078, -0.00 / 16.4 +2.0, -0.0 | 0.882 / 22.4 | 1500 pcs. CA or 1000 pcs. CB |
| 24mm | 13"    | 0.961 +0.078, -0.00 / 24.4 +2.0, -0.0 | 1.196 / 30.4 | 1000 pcs. DA or DB           |
| 32mm | 13"    | 1.276 +0.078, -0.00 / 32.4 +2.0, -0.0 | 1.52 / 38.4  | 750 pcs. EA                  |

All reels are compatible with major pick-and-place machines and made in accordance with EIA 481 A (except EA size, which is 12mm component pitch versus 16mm pitch).

# STANDARD VALUES AVAILABLE

| Wirewound                  |          |        |        |                                 |     |     |     |     |     |     |
|----------------------------|----------|--------|--------|---------------------------------|-----|-----|-----|-----|-----|-----|
| Package style              | BB       | BA     | CA     | CB                              | CB  | DA  | DA  | DB  | EA  | BB  |
| Base: standard or recessed | S        | S      | S      | S                               | R   | S   | R   | R   | R   | S   |
| Wattage                    | 0.6      | 1.0    | 1.5    | 2.0                             | 2.0 | 2.0 | 2.0 | 3.0 | 3.5 | 0.6 |
| Ohmic value                | Part No. | Prefix | Suffix | Tolerance suffix: F = 1% J = 5% |     |     |     |     |     |     |
| 0.005                      | R005     |        | J      | J                               | F/J |     |     |     |     |     |
| 0.010                      | R010     | F/J    | J      | J                               | F   | J   | J   | J   | F   |     |
| 0.015                      | R015     | F/J    | J      |                                 |     |     |     |     | F   |     |
| 0.020                      | R020     | J      | J      |                                 | F   | J   |     | J   | F   |     |
| 0.025                      | R025     | J      |        |                                 |     |     |     |     |     |     |
| 0.027                      | R027     | J      |        |                                 |     |     |     |     |     |     |
| 0.030                      | R030     | F      | J      | J                               |     |     |     | J   | F   |     |
| 0.033                      | R033     | J      |        |                                 |     |     |     |     |     |     |
| 0.036                      | R036     | J      |        |                                 |     |     |     |     |     |     |
| 0.050                      | R050     | F/J    | J      |                                 | J   | F   | J   | J   | F   |     |
| 0.056                      | R056     | J      |        |                                 |     |     |     |     |     |     |
| 0.075                      | R075     | J      |        |                                 |     |     |     |     | F   |     |
| 0.080                      | R080     |        | J      |                                 |     |     |     | J   |     |     |
| 0.100                      | R100     | J      | F/J    | J                               | J   | F   | J   | J   | F   |     |
| 0.150                      | R150     |        | J      | J                               | J   | J   |     |     |     |     |
| 0.200                      | R200     |        | J      | J                               |     |     |     | J   |     |     |
| 0.220                      | R220     |        |        | J                               |     |     |     |     |     |     |
| 0.240                      | R240     | J      | J      | J                               |     |     |     |     | F   |     |
| 0.300                      | R300     | J      | J      |                                 | J   |     |     |     |     |     |
| 0.330                      | R330     |        |        | J                               |     |     |     |     |     |     |
| 0.400                      | R040     |        | J      |                                 |     |     |     |     |     |     |
| 0.400                      | R400     |        |        | J                               |     |     |     |     |     |     |
| 0.470                      | R470     | J      | J      | J                               |     | J   |     |     | F   |     |
| 0.500                      | R500     | J      | J      |                                 | J   |     |     | J   |     |     |
| 0.750                      | R750     | J      | J      |                                 |     |     |     |     | F   |     |

| Wirewound                  |          |        |        |                                 |     |     |     |     |     |     |
|----------------------------|----------|--------|--------|---------------------------------|-----|-----|-----|-----|-----|-----|
| Package style              | BB       | BA     | CA     | CB                              | CB  | DA  | DA  | DB  | EA  | BB  |
| Base: standard or recessed | S        | S      | S      | S                               | R   | S   | R   | R   | R   | S   |
| Wattage                    | 0.6      | 1.0    | 1.5    | 2.0                             | 2.0 | 2.0 | 2.0 | 3.0 | 3.5 | 0.6 |
| Ohmic value                | Part No. | Prefix | Suffix | Tolerance suffix: F = 1% J = 5% |     |     |     |     |     |     |
| 1.00                       | 1R00     | J      | F/J    | J                               | J   |     | J   | J   |     | F   |
| 2.00                       | 2R00     |        |        |                                 |     |     |     |     |     | F   |
| 2.20                       | 2R20     |        |        |                                 |     |     |     |     |     |     |
| 3.01                       | 3R01     |        |        |                                 |     |     |     |     |     |     |
| 5.00                       | 5R00     |        |        |                                 |     |     |     |     |     | F   |
| 5.60                       | 5R60     | J      | J      |                                 |     |     |     |     |     |     |
| 6.80                       | 6R80     |        |        |                                 |     |     |     |     |     |     |
| 7.50                       | 7R50     |        |        |                                 |     |     |     |     | J   | F   |
| 10.00                      | 10R0     | J      | J      | J                               |     | J   |     |     | F   | F   |
| 11.00                      | 11R0     |        |        |                                 |     |     |     |     |     |     |
| 15.00                      | 15R0     | J      | J      | J                               |     |     |     |     | F   |     |
| 20.00                      | 20R0     |        |        | J                               |     |     |     |     |     |     |
| 24.90                      | 24R9     |        |        |                                 |     |     |     |     | F   | F   |
| 36.00                      | 36R0     |        |        |                                 |     |     |     |     | F   | F   |
| 47.00                      | 47R0     | J      | J      |                                 |     |     |     | J   | F   |     |
| 49.90                      | 49R9     |        |        |                                 |     |     |     |     |     |     |
| 50.00                      | 50R0     |        |        |                                 |     |     |     |     | J   |     |
| 51.00                      | 51R0     | J      | J      |                                 |     |     |     |     |     |     |
| 51.10                      | 51R1     |        |        |                                 |     |     |     |     |     |     |
| 68.00                      | 68R0     |        |        |                                 |     |     |     |     |     |     |
| 82.00                      | 82R0     |        |        |                                 | J   |     |     |     |     |     |
| 100.00                     | 100R     |        |        | J                               |     |     |     |     | F   |     |
| 120.00                     | 120R     |        |        | J                               |     |     |     |     |     |     |
| 158.00                     | 158R     |        |        |                                 |     |     |     |     |     |     |
| 180.00                     | 180R     | J      | J      |                                 |     |     |     |     |     |     |
| 182.00                     | 182R     |        |        |                                 |     |     |     |     |     |     |
| 200.00                     | 200R     |        |        |                                 |     |     |     |     |     |     |
| 300.00                     | 300R     |        | J      |                                 |     |     |     |     |     |     |
| 392.00                     | 392R     |        |        |                                 |     |     |     |     |     |     |
| 470.00                     | 470R     |        |        |                                 |     | J   |     |     |     |     |
| 499.00                     | 499R     |        |        |                                 |     |     |     |     |     |     |
| 511.00                     | 511R     |        |        |                                 |     |     |     |     |     |     |
| 1K                         | 1K00     |        |        |                                 |     |     |     | J   |     |     |
| 1.82K                      | 1K82     |        |        |                                 |     |     |     |     |     |     |
| 2K                         | 2K00     |        |        |                                 |     |     |     |     |     |     |
| 4.7K                       | 4K70     |        |        |                                 | J   |     |     |     |     |     |
| 4.99K                      | 4K99     |        |        |                                 |     |     |     |     |     |     |
| 5K                         | 5K00     |        |        |                                 |     |     |     |     | J   |     |
| 10K                        | 10K0     |        |        |                                 |     |     |     |     |     |     |
| 49.9K                      | 49K9     |        |        |                                 |     |     |     |     |     |     |
| 100K                       | 100K     |        |        |                                 |     |     |     |     |     |     |
| 360K                       | 360K     |        |        |                                 |     |     |     |     |     |     |
| 499K                       | 499K     |        |        |                                 |     |     |     |     |     |     |
| 1M                         | 1M00     |        |        |                                 |     |     |     |     |     |     |

## General Notes

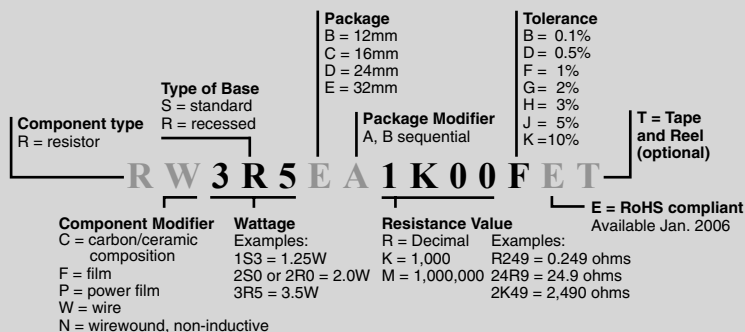
Other ratings under development.

Molding material rated at 205°C continuous.

Ohmite reserves the right to make changes in product specifications and availability without notice or liability.

The information in this brochure is based on data obtained by our own research and is considered accurate. However, no warranty is expressed or implied regarding the accuracy of those data, the results to be obtained from the use thereof, or that any such use will infringe on any patent. This information is furnished upon the condition that the person receiving it shall make their own tests to determine the suitability thereof for their particular purpose.

## ORDERING INFORMATION



(For example, the part number shown is a wirewound resistor, 3.5 watt, recessed base, 32mm tape size, first case size [A], 1000 ohms 1% tolerance.)