

# RW Series

## High Power SMD Wirewound Resistors 5 and 7 watt



Ohmite has used its thermal management expertise to produce a unique resistor design. The resistor body incorporates fins identical to a heatsink. These fins, as with a heatsink, increase the surface area of the part and allow for greater power dissipation. This unique design allows a small footprint for the SMD device and a high power dissipation. These 5 and 7 watt resistors are extremely stable with a load life drift of only 1%. A special flat has been designed in to the part for pick and place operations.

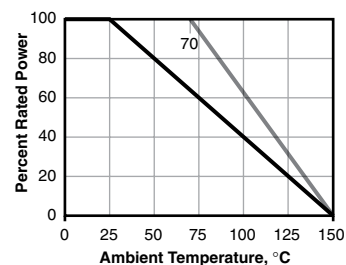
### FEATURES

- Finned design facilitates cooling
- High Power Density
- Wide Resistance Range
- Tight Tolerance
- Low TCR

### CHARACTERISTICS

|                                | RW5S0  | RW7S0       |          |
|--------------------------------|--|-------------|----------|
| <b>Power</b>                   | at 25°C  | 7 watts     | 10 watts |
|                                | at 70°C  | 5 watts     | 7 watts  |
| <b>Resistance range</b>        | 0.1Ω ~ 50K   | 0.1Ω ~ 100K |          |
| <b>Non-inductive range</b>     | 0.1Ω ~ 12.5K   | 0.1Ω ~ 20K  |          |
| <b>Tolerance</b>               | 0.5%, 1%, 5%   |             |          |
| <b>Temperature Coefficient</b> | 0.1Ω ~ 0.99Ω: ±90ppm<br>1Ω ~ 10Ω: ±50ppm<br>10Ω+: ±20ppm |             |          |
| <b>Operating temp. range</b>   | -55°C ~ +155°C   |             |          |
| <b>Max. working voltage</b>    | $(P \times R)^{1/2}$                                     |             |          |
| <b>Weight</b>                  | 5.67g  | 11.34g      |          |

### Derating



### PERFORMANCE DATA

|                      |  |                      |
|----------------------|--|----------------------|
| <b>Temp. cycle</b>   | (-55°C to 125°C, 1000 cycles)              | ±0.5%+.05Ω           |
| <b>Load Life</b>     | (1000 hours at 25°C)                       | ±1.0%+.05Ω           |
| <b>Immersion</b>     | (260°C for 10 sec.)                        | ±0.1%+.05Ω           |
| <b>Leaching</b>      | (260°C Solder immersion, 60 sec.)          | No visible leaching  |
| <b>Thermal Shock</b> | (Units at -55°C, then rated power applied) | No mechanical damage |
| <b>Flammability</b>  | UL Material rating                         | UL94V0               |

(continued)

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### DIMENSIONS

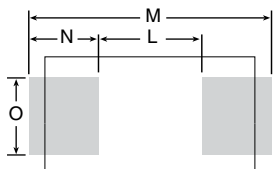
±0.020 in. / ±0.51 mm

#### Overall Dimensions

|       | Length        | Width         | Height        |
|-------|---------------|---------------|---------------|
| RW5S0 | 0.806 / 20.47 | 0.365 / 9.27  | 0.406 / 10.31 |
| RW7S0 | 1.128 / 28.65 | 0.471 / 11.96 | 0.51 / 12.95  |

#### Land Pattern

|          | L             | M             | N            | O             |
|----------|---------------|---------------|--------------|---------------|
| 5S0 (FA) | 0.600 / 15.24 | 1.000 / 25.40 | 0.200 / 5.08 | 0.450 / 11.43 |
| 7S0 (FB) | 0.890 / 22.61 | 1.330 / 29.59 | 0.220 / 5.59 | 0.520 / 13.21 |

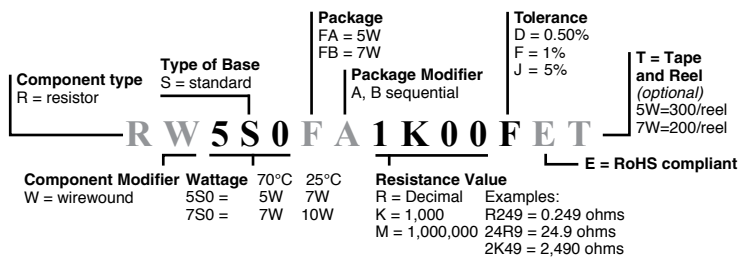


Power Rating and Temperature Rise data based on the recommended Land Patterns using 10 oz. copper PCB. FR-4 material. 0.062" thick. 4 layer.

#### Tape and Reel

|                     | FA (5S0) | FB (7S0) |
|---------------------|----------|----------|
| Reel Hub Diameter   | 77mm     | 77mm     |
| Reel Outer Diameter | 560mm    | 560mm    |
| Reel Width          | 46mm     | 46mm     |
| Tape Width          | 44mm     | 44mm     |
| Pitch               | 20mm     | 24mm     |

### ORDERING INFORMATION



#### Standard part numbers For RW Series

| Resistance | Tolerance | Part Number   |
|------------|-----------|---------------|
| 0.10       | 1%        | RW5S0FAR100FE |
| 1.0        | 1%        | RW5S0FA1R00FE |
| 10         | 5%        | RW5S0FA10R0JE |
| 20         | 5%        | RW5S0FA20R0JE |
| 47         | 5%        | RW5S0FA47R0JE |
| 100        | 5%        | RW5S0FA100RJE |
| 470        | 5%        | RW5S0FA470RJE |
| 1000       | 5%        | RW5S0FA1K00JE |
| 4700       | 5%        | RW5S0FA4K70JE |
| 10,000     | 5%        | RW5S0FA10K0JE |
| 1.0        | 1%        | RW7S0FB1R00FE |
| 10         | 1%        | RW7S0FB10R0FE |
| 100        | 1%        | RW7S0FB100RFE |
| 1000       | 1%        | RW7S0FB1K00FE |
| 10,000     | 1%        | RW7S0FB10K0FE |
| 100,000    | 1%        | RW7S0FB100KFE |