

# TWM/TWW Series



## Ceramic Housed Radial Terminal Power

The TWM/TWW series radial terminal power resistors offer significant board space savings over axial terminal products. Generated heat is also kept away from the circuit board.

They are recommended for commercial applications requiring low cost.



### FEATURES

- Economical Commercial Grade for general purpose use
- Wirewound and Metal Oxide construction
- Wide resistance range
- Flameproof inorganic construction

### SERIES SPECIFICATIONS

| Series | Wattage | Resistance | Voltage | Element     |
|--------|---------|------------|---------|-------------|
| TWW3   | 3       | 0.01-39Ω   | 250     | Wire        |
| TWW5   | 5       | 0.01-47Ω   | 350     | Wire        |
| TWW10  | 10      | 0.04-990Ω  | 750     | Wire        |
| TWW15  | 15      | 0.1Ω-560Ω  | 700     | Wire        |
| TWW20  | 20      | 0.1Ω-560Ω  | 750     | Wire        |
| TWM3   | 3       | 43-50KΩ    | 250     | Metal oxide |
| TWM5   | 5       | 51-50KΩ    | 350     | Metal oxide |
| TWM10  | 10      | 1000-50KΩ  | 750     | Metal oxide |
| TWM15  | 15      | 561Ω-200KΩ | 700     | Metal oxide |
| TWM20  | 20      | 561Ω-200KΩ | 750     | Metal oxide |

### CHARACTERISTICS

|  |  |
|--|--|
| <b>Housing</b>                         | Ceramic  |
| <b>Core</b>                            | Fiberglass   |
| <b>Filling</b>                         | Cement based   |
| <b>Tolerance</b>                       | 5% standard  |
| <b>Temperature coefficient</b>         | 0.01-20Ω ±400ppm/°C;<br>>20-10Ω ±350ppm/°C   |
| <b>Dielectric withstanding voltage</b> | 1,000VAC   |
| <b>Short time overload</b>             | TWW: 10x rated power for 5 sec.;<br>TWM: 5x rated power for 5 sec.<br>15 & 20 watt: 2.5x RCWV for 5 sec. |
| <b>Operating Temperature</b>           | -55°C to 275°C   |
| <b>Storage Temperature</b>             | 15°C-35°C, humidity: 25%-75%   |

### Derating



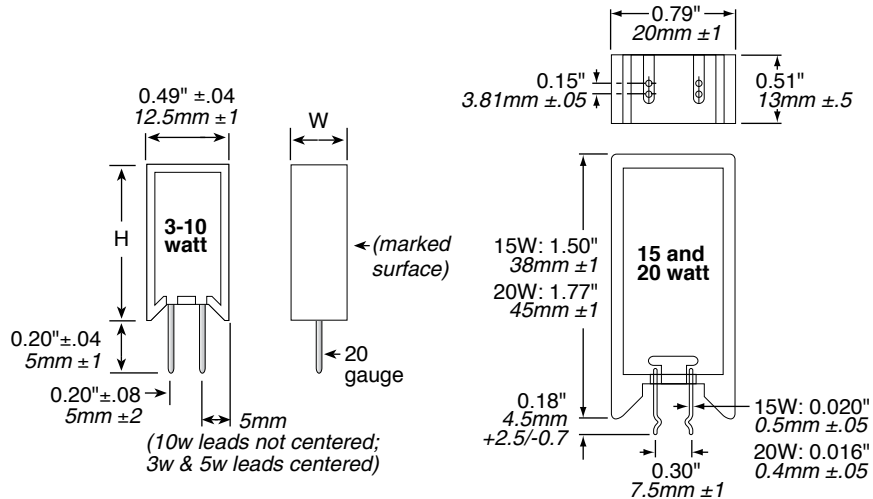
(continued)

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### DIMENSIONS

| 3-10 watt Series | Height (in./mm) ±1mm | Width (in./mm) ±1mm |
|------------------|----------------------|---------------------|
| TWW3             | 0.98 / 25            | 0.33 / 8.5          |
| TWW5             | 0.98 / 25            | 0.35 / 9            |
| TWM10            | 1.97 / 50            | 0.35 / 9            |
| TWM3             | 0.98 / 25            | 0.33 / 8.5          |
| TWM5             | 0.98 / 25            | 0.35 / 9            |
| TWM10            | 1.97 / 50            | 0.35 / 9            |



### HOW TO ORDER



#### Standard part numbers for TWW series

| Ohmic value | Part No. Prefix Suffix | Wattage |   |    |    |    | Ohmic value | Part No. Prefix Suffix | Wattage |   |    |    |    |
|-------------|------------------------|---------|---|----|----|----|-------------|------------------------|---------|---|----|----|----|
|             |                        | 3       | 5 | 10 | 15 | 20 |             |                        | 3       | 5 | 10 | 15 | 20 |
| 0.01        | R01E                   | ✓       | ✓ |    |    |    | 47          | 47RE                   | ✓       | ✓ | ✓  |    |    |
| 0.02        | R02E                   | ✓       | ✓ |    |    |    | 51          | 51RE                   | ✓       |   |    |    | ✓  |
| 0.03        | R03E                   | ✓       | ✓ |    |    |    | 56          | 56RE                   | ✓       |   |    |    | ✓  |
| 0.04        | R04E                   | ✓       | ✓ | ✓  |    |    | 68          | 68RE                   | ✓       |   |    |    | ✓  |
| 0.05        | R05E                   | ✓       | ✓ | ✓  |    |    | 75          | 75RE                   | ✓       |   |    |    | ✓  |
| 0.10        | R10E                   | ✓       | ✓ | ✓  | ✓  |    | 82          | 82RE                   | ✓       |   |    |    | ✓  |
| 0.15        | R15E                   | ✓       | ✓ | ✓  | ✓  |    | 100         | 100E                   | ✓       |   |    | ✓  | ✓  |
| 0.20        | R20E                   | ✓       | ✓ | ✓  | ✓  |    | 150         | 150E                   | ✓       |   |    | ✓  | ✓  |
| 0.27        | R27E                   | ✓       | ✓ | ✓  | ✓  |    | 200         | 200E                   | ✓       |   |    | ✓  | ✓  |
| 0.30        | R30E                   | ✓       | ✓ | ✓  | ✓  |    | 270         | 270E                   | ✓       |   |    | ✓  | ✓  |
| 0.33        | R33E                   | ✓       | ✓ | ✓  | ✓  |    | 300         | 300E                   | ✓       |   |    |    | ✓  |
| 0.39        | R39E                   | ✓       | ✓ | ✓  | ✓  |    | 330         | 330E                   | ✓       |   |    |    | ✓  |
| 0.43        | R43E                   | ✓       | ✓ | ✓  | ✓  |    | 390         | 390E                   | ✓       |   |    |    | ✓  |
| 0.47        | R47E                   | ✓       | ✓ | ✓  | ✓  |    | 430         | 430E                   | ✓       |   |    |    | ✓  |
| 0.56        | R56E                   | ✓       | ✓ | ✓  | ✓  |    | 470         | 470E                   | ✓       |   |    |    | ✓  |
| 0.68        | R68E                   | ✓       | ✓ | ✓  | ✓  |    | 500         | 500E                   | ✓       |   |    |    | ✓  |
| 0.75        | R75E                   | ✓       | ✓ | ✓  | ✓  |    | 560         | 560E                   | ✓       |   |    |    | ✓  |
| 0.82        | R82E                   | ✓       | ✓ | ✓  | ✓  |    | 680         | 680E                   | ✓       |   |    |    | ✓  |
| 1.0         | R10E                   | ✓       | ✓ | ✓  | ✓  |    | 750         | 750E                   | ✓       |   |    |    | ✓  |
| 1.5         | R15E                   | ✓       | ✓ | ✓  | ✓  |    | 820         | 820E                   | ✓       |   |    |    | ✓  |
| 2.0         | R20E                   | ✓       | ✓ | ✓  | ✓  |    |             |                        |         |   |    |    |    |
| 2.7         | R27E                   | ✓       | ✓ | ✓  | ✓  | ✓  |             |                        |         |   |    |    |    |
| 3.0         | R30E                   | ✓       | ✓ | ✓  | ✓  |    |             |                        |         |   |    |    |    |
| 3.3         | R33E                   | ✓       | ✓ | ✓  | ✓  |    |             |                        |         |   |    |    |    |
| 3.9         | R39E                   | ✓       | ✓ | ✓  | ✓  |    |             |                        |         |   |    |    |    |
| 4.3         | R43E                   | ✓       | ✓ | ✓  | ✓  |    |             |                        |         |   |    |    |    |
| 4.7         | R47E                   | ✓       | ✓ | ✓  | ✓  |    |             |                        |         |   |    |    |    |
| 5.6         | R56E                   | ✓       | ✓ | ✓  | ✓  |    |             |                        |         |   |    |    |    |
| 6.8         | R68E                   | ✓       | ✓ | ✓  | ✓  |    |             |                        |         |   |    |    |    |
| 7.5         | R75E                   | ✓       | ✓ | ✓  | ✓  |    |             |                        |         |   |    |    |    |
| 8.2         | R82E                   | ✓       | ✓ | ✓  | ✓  |    |             |                        |         |   |    |    |    |
| 10          | R10E                   | ✓       | ✓ | ✓  | ✓  | ✓  |             |                        |         |   |    |    |    |
| 15          | R15E                   | ✓       | ✓ | ✓  | ✓  | ✓  |             |                        |         |   |    |    |    |
| 20          | R20E                   | ✓       | ✓ | ✓  | ✓  |    |             |                        |         |   |    |    |    |
| 22          | R22E                   | ✓       | ✓ | ✓  | ✓  |    |             |                        |         |   |    |    |    |

#### Standard part numbers for TWM series

| Ohmic value | Part No. Prefix Suffix | Wattage |   |    |    |    | Ohmic value | Part No. Prefix Suffix | Wattage |   |    |    |    |
|-------------|------------------------|---------|---|----|----|----|-------------|------------------------|---------|---|----|----|----|
|             |                        | 3       | 5 | 10 | 15 | 20 |             |                        | 3       | 5 | 10 | 15 | 20 |
| 43          | 43RE                   | ✓       |   |    |    |    | 1000        | 1K0                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 47          | 47RE                   | ✓       |   |    |    |    | 1500        | 1K5                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 56          | 56RE                   | ✓       | ✓ |    |    |    | 2000        | 2K0                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 68          | 68RE                   | ✓       | ✓ | ✓  |    |    | 2700        | 2K7                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 75          | 75RE                   | ✓       | ✓ | ✓  |    |    | 3000        | 3K0                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 82          | 82RE                   | ✓       | ✓ | ✓  |    |    | 3300        | 3K3                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 100         | 100E                   | ✓       | ✓ | ✓  |    |    | 3900        | 3K9                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 150         | 150E                   | ✓       | ✓ | ✓  |    |    | 4300        | 4K3                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 200         | 200E                   | ✓       | ✓ | ✓  |    |    | 4700        | 4K7                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 270         | 270E                   | ✓       | ✓ | ✓  |    |    | 5600        | 5K6                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 300         | 300E                   | ✓       | ✓ | ✓  |    |    | 5100        | 5K1                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 330         | 330E                   | ✓       | ✓ | ✓  |    |    | 6800        | 6K8                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 390         | 390E                   | ✓       | ✓ | ✓  |    |    | 7500        | 7K5                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 430         | 430E                   | ✓       | ✓ | ✓  |    |    | 8200        | 8K2                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 470         | 470E                   | ✓       | ✓ | ✓  |    |    | 10000       | 10K                    | ✓       | ✓ | ✓  | ✓  | ✓  |
| 560         | 560E                   | ✓       | ✓ | ✓  |    |    | 27000       | 27K                    |         |   |    |    | ✓  |
| 680         | 680E                   | ✓       | ✓ | ✓  |    |    | 47000       | 47K                    |         |   |    |    | ✓  |
| 750         | 750E                   | ✓       | ✓ | ✓  |    |    | 51000       | 51K                    |         |   |    |    | ✓  |
| 820         | 820E                   | ✓       | ✓ | ✓  |    |    | 75000       | 75K                    |         |   |    |    | ✓  |