

## Type SM Series

### Key Features

- Low Profile Design
- Available on Tape
- Very Wide Value Range
- Ideal for Power Circuitry
- Available in 2,3 or 5 Watts
- Flameproof Coating UL94V0



TE Connectivity (TE) introduces a surface mount power resistor suited to meet today's circuit design needs. Each size offers low profile case design with flexible tinned copper terminations for reliable solder joints. All styles utilize a fully welded construction technique, unlike other designs that rely solely on tinned termination connections. These features allow the SM Series to withstand the higher temperatures associated with reflow, vapour phase, or infrared (IR) manufacturing processes without degradation.

### Characteristics - Electrical

|                             | SM (Wire)       | SM (Metal Film) |
|-----------------------------|-----------------|-----------------|
| Values SM_2:                | R10 – 200R      | 201R – 2M       |
| Values SM_3:                | R10 – 300R      | 301R – 2M       |
| Values SM_5:                | R10 – 500R      | 501R – 2M       |
| Value Grid:                 | E24             |                 |
| Resistance Tolerance:       | 1% or 5%        |                 |
| Power Rating @ 25°C SM_2:   | 2.0 Watts       |                 |
| Power Rating @ 25°C SM_3:   | 3.0 Watts       |                 |
| Power Rating @ 25°C SM_5:   | 5.0 Watts       |                 |
| Derating:                   | See Curve Below |                 |
| Max Operating Voltage SM_2: | 300 Volts       |                 |
| Max Operating Voltage SM_3: | 500 Volts       |                 |
| Max Operating Voltage SM_5: | 500 Volts       |                 |

### Characteristics - Environmental

| Test                                   | Condition   | SM (Wire)                           | SM (Metal Film) |
|--|---|-------------------------------------|-----------------|
| Temperature Coefficient of Resistance: | -55°C – +200°C  | ± 200ppm /°C                        | ± 100ppm /°C    |
| Short Time Overload:                   | 5 times of rated wattage for 5 sec.                     | ± 1%                                | ± 0.5%          |
| Rated Load:                            | Rated voltage for 30 minutes                            | ± 1%                                | ± 0.5%          |
| Insulation Resistance:                 | 500VDC  | 10,000 MΩ                           | 10,000 MΩ       |
| Load Life:                             | 70°C 1.5 hrs on 0.5 hrs off for 1000 hrs                | ± 2%                                | ± 1%            |
| Humidity Load Life:                    | 40°C ±2°C @ 90-95% RH 500 hrs<br>1.5 hrs on 0.5 hrs off | ± 2%                                | ± 1%            |
| Voltage Withstand:                     | 500VAC for 60 seconds                                   | No Physical damage                  |                 |
| Solderability:                         | 235°C ±5°C for 2 seconds                                | 95% coverage                        |                 |
| Resistance to Soldering Heat:          | 270°C ±5°C for 10 ±1seconds                             | Resistance value change within ± 1% |                 |

## Type SM Series

### Power Derating



### Maximum Allowable Body Temperature



### Dimensions



|      | A ±0.3 | B ±0.3 | C ±0.3 | D ±0.3 | E max | F±0.3 | Qty Per Reel |
|------|--------|--------|--------|--------|-------|-------|--------------|
| SM_2 | 4.0    | 6.7    | 1.4    | 3.55   | 7.9   | 1.5   | 2000         |
| SM_3 | 5.5    | 10.5   | 1.7    | 5.0    | 12.0  | 2.3   | 1000         |
| SM_5 | 7.3    | 13.5   | 1.7    | 6.8    | 17.0  | 2.5   | 1000         |

## Type SM Series

### Recommended Pad Dimensions



|      | W Nom. | H Nom. | L Nom. |
|------|--------|--------|--------|
| SM_2 | 2.6    | 2.9    | 2.8    |
| SM_3 | 4.0    | 3.4    | 6.0    |
| SM_5 | 4.5    | 3.4    | 11.0   |

### How to Order

| SMW                                 | 2   | 1R0  | F                  | T          |
|-------------------------------------|---|--|--------------------|------------|
| Common Part                         | Case Size                                 | Resistance Value   | Tolerance          | Pack Style |
| SMW – Wirewound<br>SMF – Metal Film | 2 – 2 Watts<br>3 – 3 Watts<br>5 – 5 Watts | 0.1 ohm<br>(100 milli ohms)<br>R10<br>1 ohm<br>(1000 milli ohms)<br>1R0<br>100 ohm<br>(100 ohms)<br>100R<br>1K ohm<br>(1000 ohms)<br>1K0<br>100K ohm<br>(100,000 ohms)<br>100K | J – ±5%<br>F – ±1% | T – Taped  |

TE Connectivity, TE connectivity (logo) and TE (logo) are trademarks.  
Other logos, product and Company names mentioned herein may be trademarks of their respective owners.

While TE has made every reasonable effort to ensure the accuracy of the information in this datasheet, TE does not guarantee that it is error-free, nor does TE make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. TE reserves the right to make any adjustments to the information contained herein at any time without notice. TE expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions in this datasheet are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult TE for the latest dimensions and design specifications.