# 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 onnections. 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 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% | |



Dimensions are in millimeters and inches unless otherwise specified. Values in brackets are standard equivalents.

Dimensions are shown for reference purposes only. Specifications subject to change.

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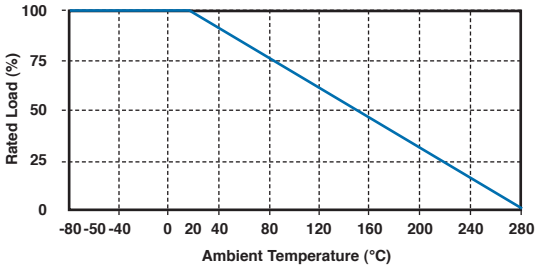
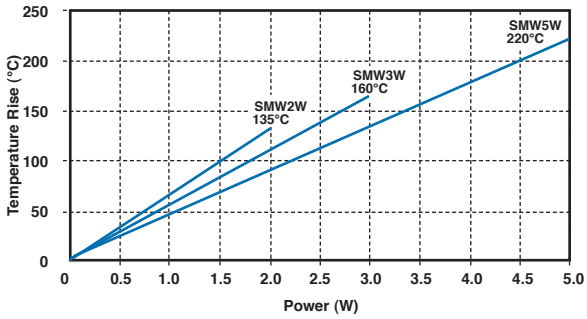
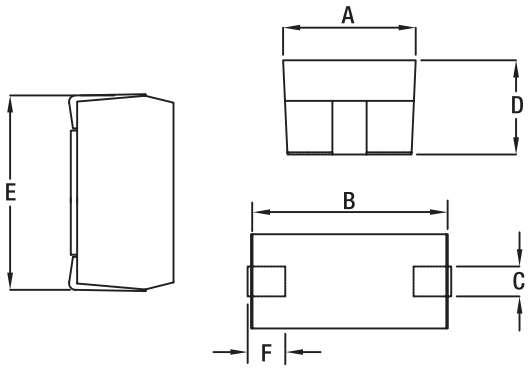
## Power Derating




## 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 |



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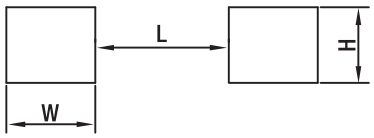
## Recommended Pad Dimensions




| | 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 (100 milli ohms) R10<br>1 ohm (1000 milli ohms) 1R0<br>100 ohm (100 ohms) 100R<br>1K ohm (1000 ohms) 1K0<br>100K ohm (100,000 ohms) 100K | J – ±5%<br>F – ±1% | T – Taped |

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