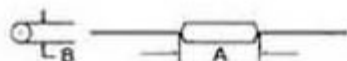


## SM041 .125W Wire Wound Precision Power Axial Resistor

# SM041



### Electrical & Physical Specifications:

<b>A-Length:</b>	6.35 mm (.250")
<b>B-Diameter:</b>	1.52mm (.060")
<b>Lead Dimensions:</b>	.020" dia. X 1.500" long (min.)
<b>Max Watts @ 1% Tol:</b>	.125
<b>Max Volts @ 1% Tol:</b>	25
<b>Temperature Range:</b>	-55°C. to +275°C
<b>Resistance Range (Ω):</b>	1.0 Min to 10K Max

### SM Series Engineering Attributes:

#### **RESISTANCE RANGE**

PRC's sub-miniature (SM) type precision power resistors offer the widest range of Ohmic values anywhere. You can select any Ohmic value or decimal part of an Ohm from .02Ω to 4MΩ (MegaOhm or MEG)

#### **CUSTOM TOLERANCES**

±1% (Std) Also available: ±.5%, ±.25%, ±.1%, ±.05%

#### **TCR CHARACTERISTICS**

##### **Standard:**

For 100Ω & Above: 0±10ppm/°C.

For values below 100Ω: 0±15ppm/°C.

##### **Special:**

To 0±2ppm/°C.

\*Please specify temperature span of operation.

#### **INDUCTANCE**

All standard SM series resistors are inductively wound. Non-inductive windings are available upon request, simply add suffix letter "N" to the part name when ordering.

#### **TERMINALS**

Solderable hot tinned pure copper leads are standard at PRC.

#### **PROTECTIVE SEAL**

SM type resistors are coated in a tough solvent resistant high temperature silicone formulation with indelible marking.

#### **PRECISION POWER RATINGS**

All standard ±1% tolerance type SM resistors are designed for continuous full load operation at +25°C Derating to zero wattage at +275°C. Derating is required for any tolerance below 1%. Refer to Derating Table seen here & Figure # 5 at the bottom of the page.

#### **Type SM Derating Table:\***

For ± 1% resistance tolerance apply up to 100% of rated power at +25 Degrees Celsius, derated to zero power at +275 Degrees Celsius.

For ± ½% (0.5%) resistance tolerance apply up to 80% of rated power at +25 Degrees Celsius, derated to zero power at +225 Degrees Celsius.

For ± ¼% (0.25%) resistance tolerance apply up to 60% of rated power at +25 Degrees Celsius, derated to zero power at +175 Degrees Celsius.

For ± 1/10% (0.1%) resistance tolerance apply up to 40% of rated power at +25 Degrees Celsius, derated to zero power at +125 Degrees Celsius.

For  $\pm 1/20\%$  (0.05%) resistance tolerance apply up to 20% of rated power at +25 Degrees Celsius, derated to zero power at +75 Degrees Celsius.

\* Percent of Rated Power vs. Combined Temp. of Self-Heating and Ambient (in °C.).

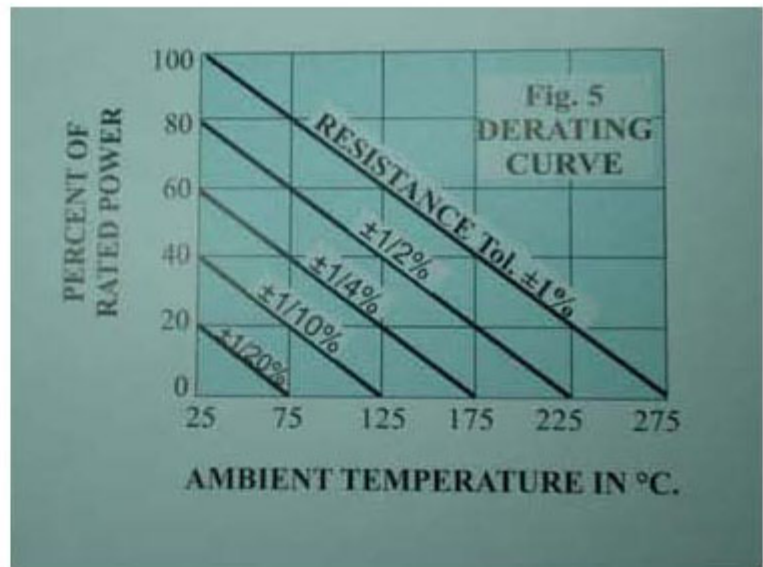
#### DC (PEAK) VOLTAGE RATING

The secret to our vast success with the SM series is we have implemented high operating voltage winding patterns into our unique design, aided by over 75 years of experience in design & manufacturing. This is done to eliminate dangerous crossovers & potential problems that are usually associated with standard style bobbins & mandrel designs. To calculate the safe operating voltage for resistance values below the maximum we have listed, you must utilize Ohm's Law by applying the formula displayed below the ordering procedure.

#### Detailed Images

$$E = \sqrt{PR}$$

**You can solve for Volts (E=Volts) by calculating the square root of the product of Power (P=Power/Watts) multiplied by the Resistance value (R=Resistance/ $\Omega$ )**



#### Derating Information

#### Details

SKU	SM041
Type	Axial
Length	6.35mm (.250")
Lead Dimensions	.020" dia. X 1.5" long (min.)
Diameter	1.52mm (.060")
TCR Char.	0 $\pm$ 10ppm/°C (between +25°C. and +100°C.)
Temperature	-65°C. to +275°C.
Resistance	1 $\Omega$ to 10K $\Omega$
Tolerance	to $\pm$ .05%
Stability	to $\pm$ .01% per year at +25°C
Max Watts	.125
Max Volts	25
Lead Free	Yes