

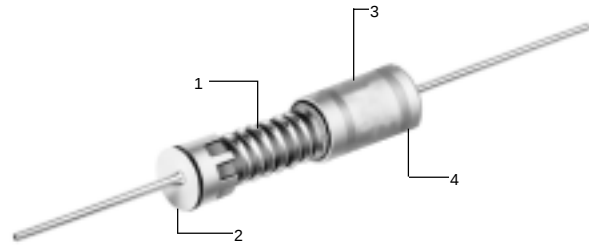


GENERAL-PURPOSE FAILSAFE MOLDED WIREWOUND RESISTOR

SPH/SPF SERIES

- Drop-in replacement for BWH/BWF
- 2 watt rated with 1 watt dimensions
- $\pm 5\%$, $\pm 10\%$ tolerance
- 0.5 ohm to 2400 ohms
- TCR's as low as ± 150 ppm/ $^{\circ}\text{C}$ std (custom TC's available)
- Weldable and solderable leads

Manufactured in Barbados.



See notes below

SPECIFICATIONS:

IRC Type		SPH	SPHF
EIA RS-344 Style		CRU 2	CRU 2
MIL-R-11 Style		RC32/RC42	RC32/RC42
Resistance - Std.		0.05 Ω to 2400 Ω	0.1 Ω to 1000 Ω
Tolerance - Std.		$\pm 5\%$, $\pm 10\%$	$\pm 5\%$, $\pm 10\%$
Power Rating		2 watt @ 70 $^{\circ}\text{C}$ 1 watt @ 115 $^{\circ}\text{C}$ Derating to 0 @ 160 $^{\circ}\text{C}$	2 watt @ 70 $^{\circ}\text{C}$ 1 watt @ 115 $^{\circ}\text{C}$ Derating to 0 @ 160 $^{\circ}\text{C}$
Max. Continuous Working Voltage		$\sqrt{\text{PR}}$	$\sqrt{\text{PR}}$
Min. Insulation Resistance	Dry Wet	10,000 Meg 100 Meg	10,000 Meg 100 Meg
Min. Dielectric Withstanding Volts (RMS)	ATM Reduced Pressure	1000 V 625V	1000 V 625V
Hotspot Temperature Rise		145 $^{\circ}\text{C}$ @ 2 watts	145 $^{\circ}\text{C}$ @ 2 watts
Typical Load Life		5%	5%
Current Noise		Negligible	Negligible

1. Resistive Element

All resistor types have resistance alloy winding on a braided fiberglass substrate. Intermediate silicone coatings are used to enhance processibility and to provide protection to the resistive element.

2. Termination

The SPH and SPF resistors are terminated using an alloy coated copper flashed steel lead welded to a cap of the same material. This termination assembly is mechanically crimped, utilizing an improved crimp design, to the resistive element.

3. Encapsulation

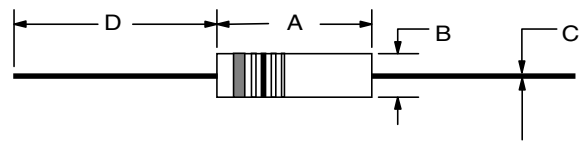
The SPH and SPF are encapsulated utilizing a compression molded phenolic plastic material. The SPF has a flame-resistance coating applied over the resistive element to provide flammability protection when destructive overloads may occur.

4. Marking

All products are marked utilizing heat and solvent resistant color code bands consistent with EIA/MIL requirements. The first band is double width to designate wirewound construction. A fifth band, blue in color, is used for flameproof identification.

DIMENSIONS (Inches and (mm)):

IRC Type		SPH	SPF
A	± 0.010 (.25)	0.562 (14.3)	0.562 (14.3)
B	± 0.008 (.20)	0.225 (5.72)	0.225 (5.72)
C	± 0.002 (.05)	0.032 (.813)	0.032 (.813)
D	± 0.126 (3.2)	1.50 (38.1)	1.50 (38.1)



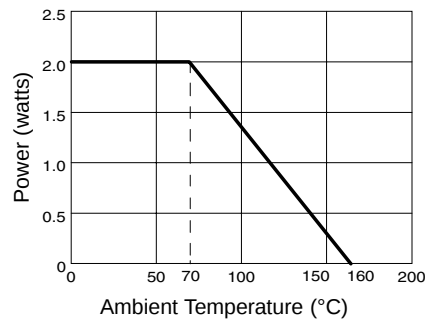


SPH/SPF CHARACTERISTICS (TYPICAL PERFORMANCE):

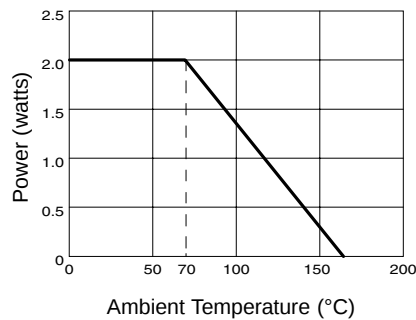
Test	SPH	SPF
Temperature Coefficient (ppm)*	0.05Ω - 0.16Ω ±1000 0.18Ω - 0.68Ω ±800 0.75Ω - 2400Ω ±400	0.10Ω ±1700 0.11Ω - 0.16Ω ±1000 0.18Ω - 0.68Ω ±800 0.75Ω - 1000Ω ±400
Dielectric Withstanding Voltage (RMS)	700V	700V
Momentary Overload	5%	5%
Low Temperature Operation	5%	5%
Temperature Cycle	5%	5%
Humidity	5%	5%
Load Life	5%	5%
Terminal Strength	5%	5%
Resistance to Solder Heat	5%	5%
Solderability	No Failures	No Failures

*All ppm levels listed are maximum.

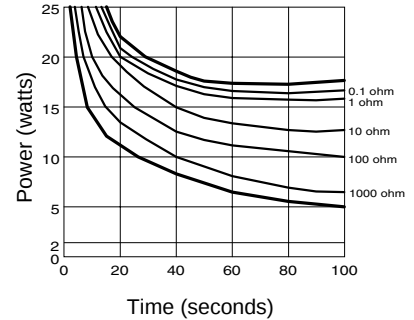
SPH POWER DERATING:



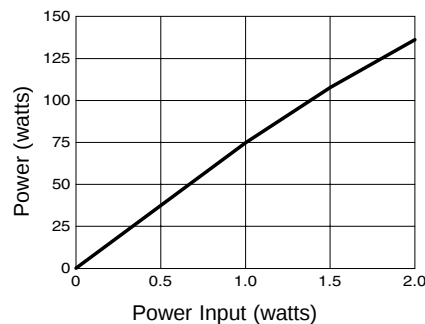
SPF POWER DERATING:



SPF TYPICAL FUSING:



SPH AND SPF TEMPERATURE RISE:



HOW TO ORDER:

Sample Part No.:

