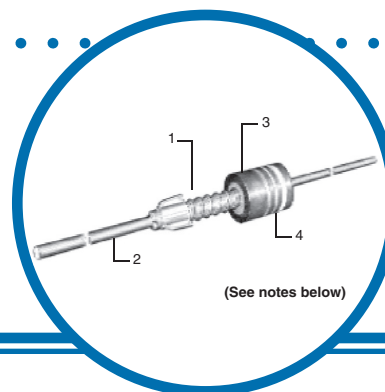


General Purpose Failsafe Molded Wirewound Resistor



SPH/SPF Series

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



Electrical Data

IRC Type	SPH	SPF
EIA RS-344 Style	CRU2	CRU2
MIL-R-11 Style	RC32/RC42	RC32/RC42
Resistance - Std.	0.1 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 10,000 Meg Wet 100 Meg	10,000 Meg 100 Meg
Min. Dielectric Withstanding Volts (RMS)	ATM 1000V Reduced Pressure 625V	1000V 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 processability 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 the 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.

General Note

IRC reserves the right to make changes in product specification without notice or liability. All information is subject to IRC's own data and is considered accurate at time of going to print.

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SPH/SPF Series Issue December 2008 Sheet 1 of 3

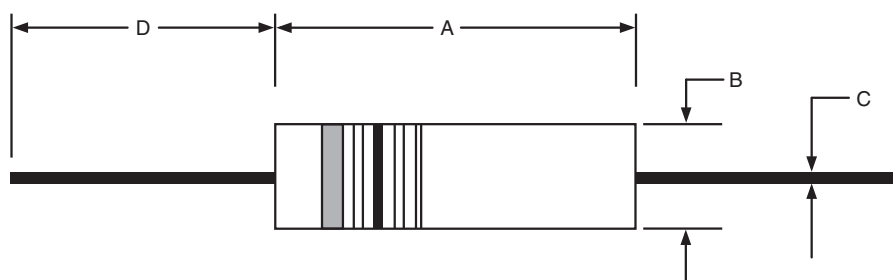
General Purpose Failsafe Molded Wirewound Resistor



Environmental Data

Test	SPH	SPF
Temperature Coefficient (ppm)*	0.1Ω - 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)	1000V	1000V
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

Physical Data



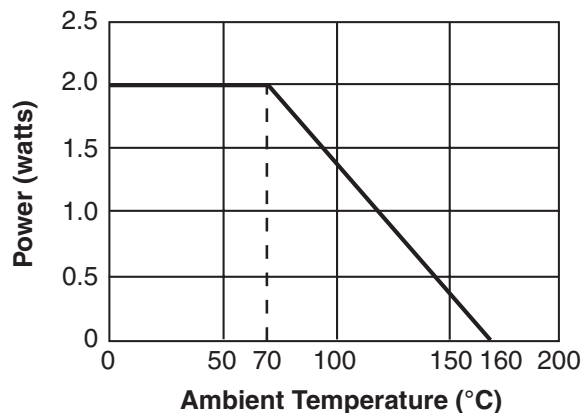
Dimensions (Inches and (mm))

IRC Type	A	B	C	D
SPH	0.562 ± 0.010 (14.3 ± 0.25)	0.225 ± 0.008 (5.72 ± 0.20)	0.032 ± 0.002 (0.813 ± 0.05)	1.50 ± 0.126 (38.1 ± 3.2)
SPF	0.562 ± 0.010 (14.3 ± 0.25)	0.225 ± 0.008 (5.72 ± 0.20)	0.032 ± 0.002 (0.813 ± 0.05)	1.50 ± 0.126 (38.1 ± 3.2)

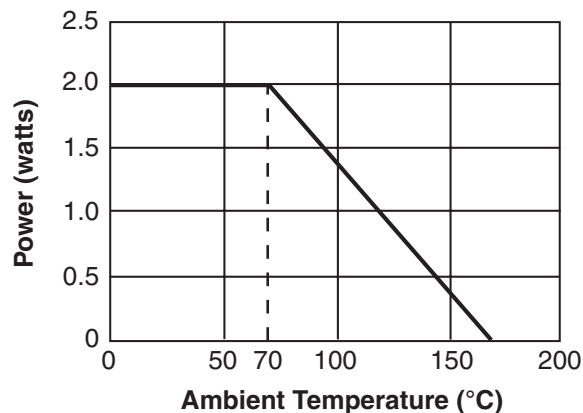
General Purpose Failsafe Molded Wirewound Resistor



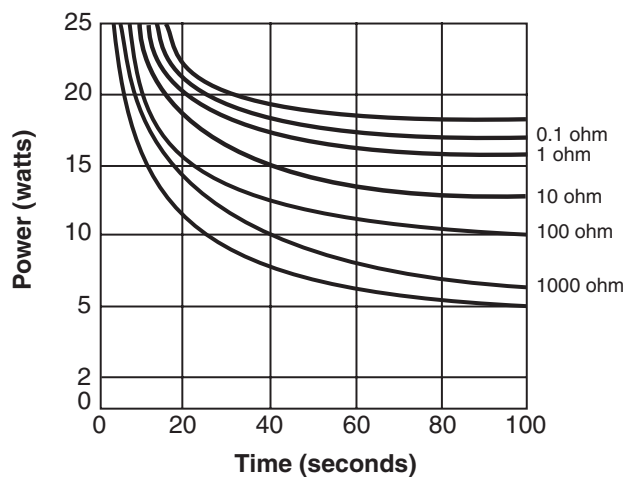
SPH Power Derating Curve



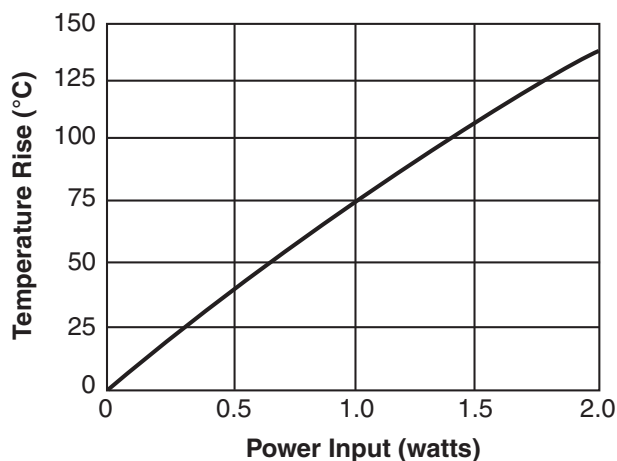
SPF Power Derating Curve



SPF Typical Fusing



SPH and SPF Temperature Rise Chart



Ordering Data

Sample Part No. **SPH** **1500** **J** **LF**

IRC Type **SPH**

Resistance Range **1500**

Tolerance **J**
J = 5%, K = 10%

Lead Free Construction **LF**