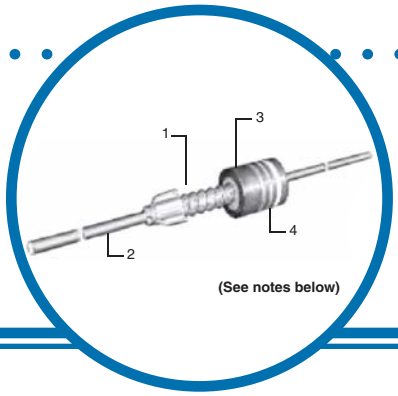
SP20 / SP20F Series

General Purpose Failsafe Molded Wirewound Resistor

- SP20F Fusible
- ±5%, ±10% tolerance
- 0.1 ohm to 1200 ohms
- F version has flame resistant coating
- 1 watt rated with 1/2 watt dimensions
- Drop-in replacement BW20 / BW20F
- Weldable and solderable magnetic lead
- TCR's as low as ±150 ppm/°C standard (custom TC's available)
- Lead free, RoHS compliant construction available



Electrical Data

IRC Type	SP20	SP20F
EIA RS-344 Style	CRU1	CRU1
MIL-R-11 Style	RC20/RC32	RC20/RC32
Resistance - Std.	0.1Ω to 1200Ω	0.1Ω to 1000Ω
Tolerance - Std.	±5%, ±10%	±5%, ±10%
Power Rating	1 watt @ 50°C 3/4 watt @ 70°C 1/2 watt @ 100°C Derating to 0 @ 160°C	1 watt @ 50°C 3/4 watt @ 70°C --- Derating to 0 @ 160°C
Max. Continuous Working Voltage	$\sqrt{PR}$	$\sqrt{PR}$
Min. Insulation Resistance — Dry Wet	10,000 Meg 100 Meg	10,000 Meg 100 Meg
Min. Dielectric Withstanding Volts (RMS) — ATM Reduced Pressure	700V 450V	700V 450V
Hotspot Temperature Rise	120°C @ 1 watts	120°C @ 1 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 SP-20 and SP-20F 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 SP-20 and the SP20F are encapsulated utilizing a compression molded phenolic plastic material. The SP-20F 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.

Wire and Film Technologies Division • 4222 South Staples Street • Corpus Christi Texas 78411 USA
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Environmental Data

Test	SP20	SP20F
Temperature Coefficient (ppm)*	<1R <±800 ≥1R <±150	<1R <±800* ≥1R <±150
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

Physical Data

Dimensions (Inches and (mm))

IRC Type	A	B	C	D
SP20	0.390 ± 0.010 (9.91 ± 0.25)	0.140 ± 0.008 (3.56 ± 0.20)	0.032 ± 0.002 (0.813 ± 0.05)	1.50 ± 0.126 (38.1 ± 3.2)
SP20F	0.390 ± 0.010 (9.91 ± 0.25)	0.140 ± 0.008 (3.56 ± 0.20)	0.032 ± 0.002 (0.813 ± 0.05)	1.50 ± 0.126 (38.1 ± 3.2)

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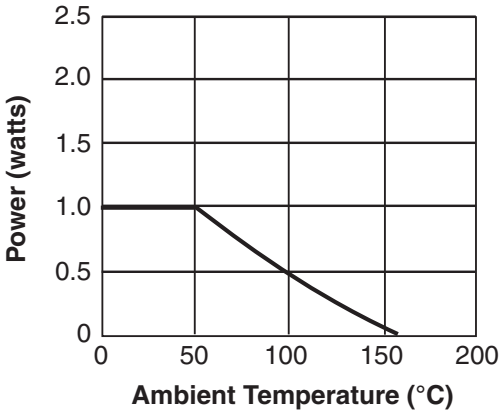
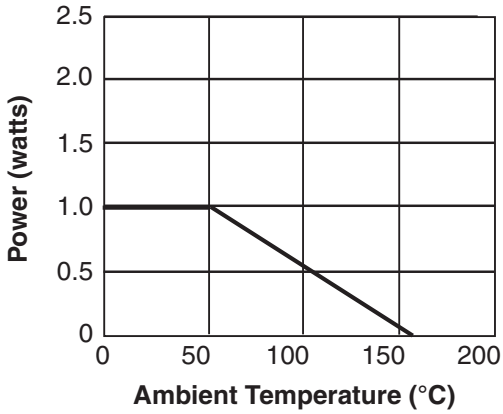
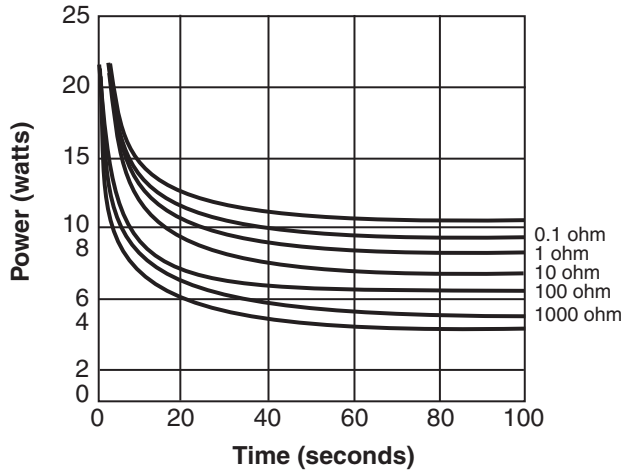
SP-20 Power Derating Curve



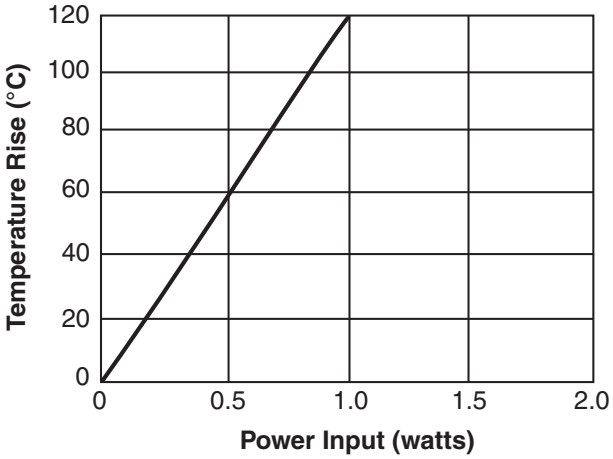
SP-20F Power Derating Curve



SP-20F Typical Fusing



SP-20 and SP20F Temperature Rise Chart



Ordering Data

Sample Part No. SP20F | 1800 | J | LF | XXX

IRC Type

Resistance Range
(First three significant figures plus fourth digit multiplier)
Example: 2203 = 220 Kohm
51R0 = 51 ohm
2R00 = 2.0 ohm

Tolerance
F = ±1.0%, G = ±2.0%, J = ±5.0%

RoHS Compliant (optional)
Provides clear "Lead Free" Designation

Specification
Custom design identifier for non-standard products

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