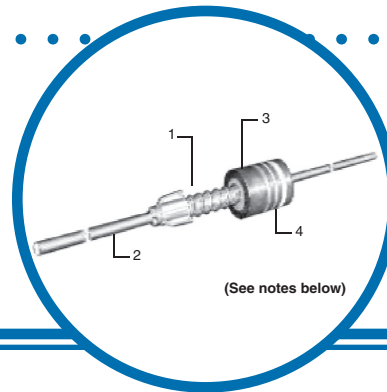


General Purpose Failsafe Molded Wirewound Resistor



SP20/SP20F Series

- SP20F Fusible
- $\pm 5\%$, $\pm 10\%$ tolerance
- 0.1 ohm to 1200 ohms
- F version has flame resistant coating
- 1 watt rated with 1/2 watt dimensions
- Drop-in replacement for BW20/BW20F
- Weldable and solderable magnetic lead
- TCR's as low as ± 150 ppm/ $^{\circ}\text{C}$ 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. | | 0.1 Ω to 1200 Ω | 0.1 Ω to 1000 Ω |
| Tolerance - Std. | | $\pm 5\%$, $\pm 10\%$ | $\pm 5\%$, $\pm 10\%$ |
| Power Rating | | 1 watt @ 50 $^{\circ}\text{C}$ 3/4 watt @ 70 $^{\circ}\text{C}$ 1/2 watt @ 100 $^{\circ}\text{C}$ Derating to 0 @ 160 $^{\circ}\text{C}$ | 1 watt @ 50 $^{\circ}\text{C}$ 3/4 watt @ 70 $^{\circ}\text{C}$ --- 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 | 700V 450V | 700V 450V |
| Hotspot Temperature Rise | | 120 $^{\circ}\text{C}$ @ 1 watts | 120 $^{\circ}\text{C}$ @ 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.

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.

Wire and Film Technologies Division • 4222 South Staples Street • Corpus Christi Texas 78411 USA
Telephone: 361 992 7900 • Facsimile: 361 992 3377 • Website: www.irc.com



A subsidiary of
TT electronics plc

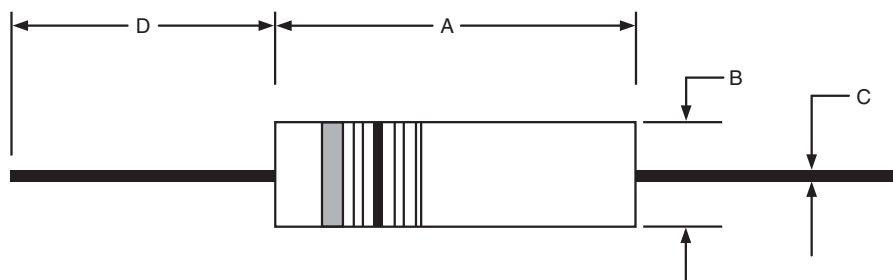
General Purpose Failsafe Molded Wirewound Resistor



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



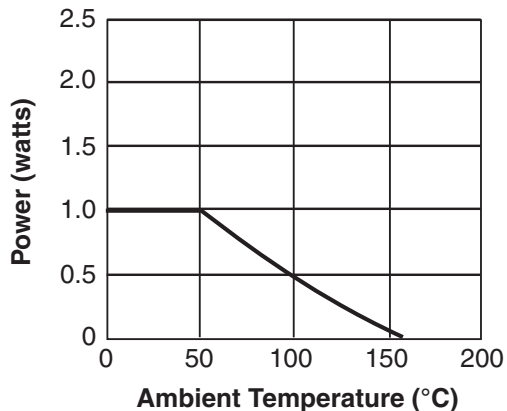
Dimensions (Inches and (mm))

| 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) |

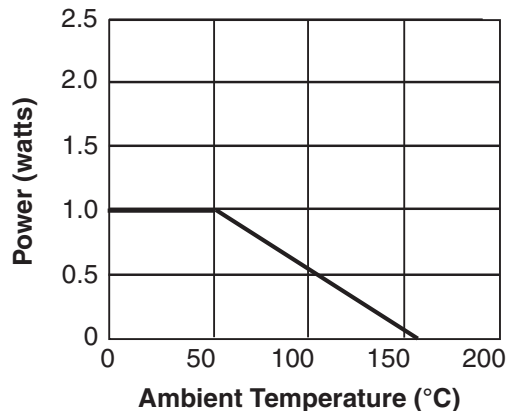
General Purpose Failsafe Molded Wirewound Resistor



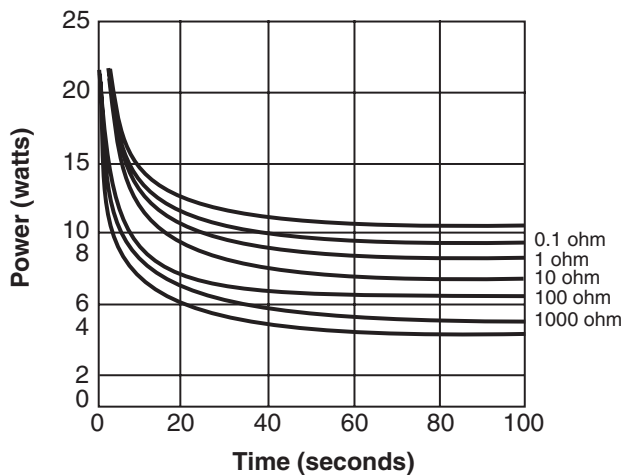
SP-20 Power Derating Curve



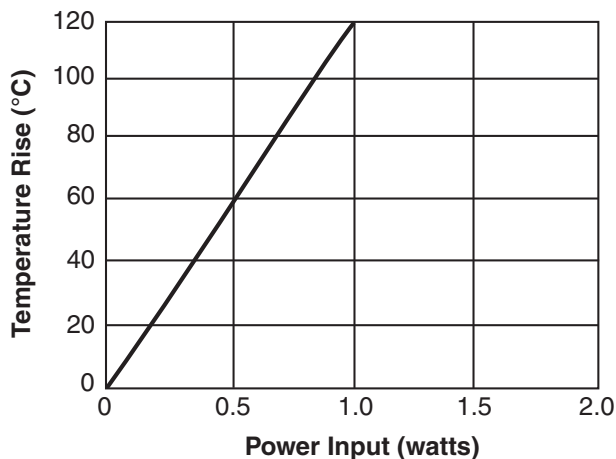
SP-20F Power Derating Curve



SP-20F Typical Fusing



SP-20 and SP20F Temperature Rise Chart



Ordering Data

