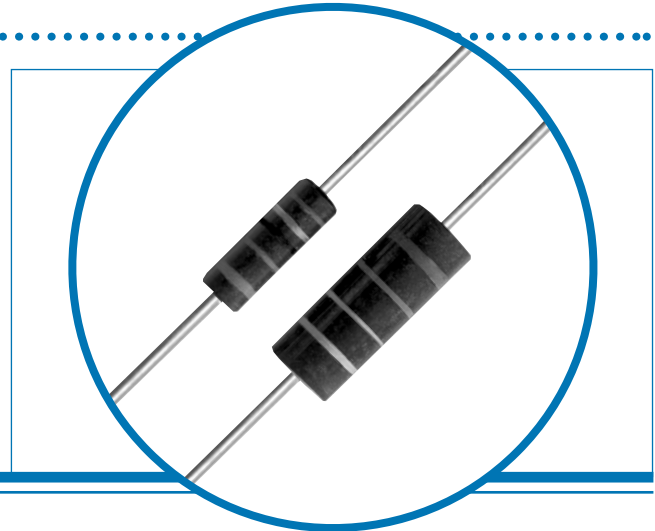


# General-Purpose Failsafe Moulded Wirewound Resistors

SP20/SP20F Series

- Drop-in replacement for BW20/BW20F
- Predictable fusing characteristics
- 1 watt rated with 1/2 watt dimensions
- 0.1 ohm to 1200 ohms
- Weldable and solderable magnetic leads

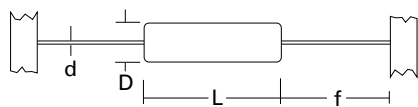


## Electrical Data

Type		SP20	SP20F
EIA RS-344 Style		CRU 1	
MIL-R-11 Style		RC20/RC32	
Resistance Range	ohms	0R1 to 1k2	0R1 to 1k
Tolerance	%	±5, ±10	
Power rating	watts	1 at 50°C 0.75 at 70°C 0.5 at 100°C Derating to 0 at 160°C	1 at 50°C 0.75 at 70°C - Derating to 0 at 160°C
Maximum continuous working voltage		$\sqrt{PR}$	
Minimum insulation resistance	dry	10,000 Meg	
	wet	100 Meg	
Minimum dielectric withstanding volts	ATM	700V	
Reduced pressure	RMS	450V	
Hotspot temperature rise		120°C at 1 watt	
Current noise		Negligible	

## Physical Data

Dimensions (mm)				
Type	L	D	d	f
SP20	9.91±0.25	3.56±0.20	0.813±0.05	38.1±3.2
SP20F	9.91±0.25	3.56±0.20	0.813±0.05	38.1±3.2



### Resistive Element

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

### Termination

The SP20 and SP20F 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.

### Encapsulation

The SP20 and SP20F are encapsulated utilizing a compression molded phenolic plastic material. The SP20F has a flame resistance coating applied over the resistive element to provide flammability protection when destructive overloads may occur.

### Marking

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

### General Note

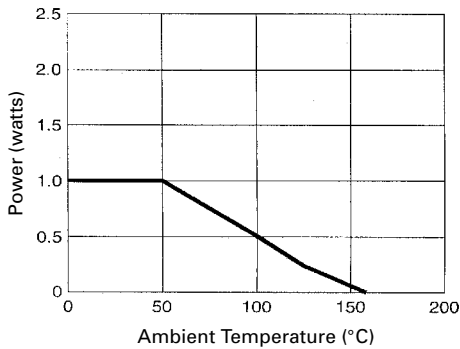
Welwyn Components reserves the right to make changes in product specification without notice or liability. All information is subject to Welwyn's own data and is considered accurate at time of going to print.

## Performance Data

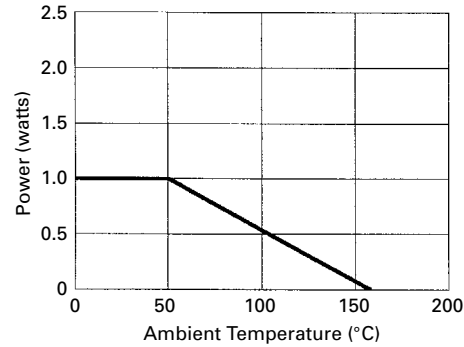
Test		SP20	SP20F
Temperature coefficient (ppm)	ppm/°C	<1R ±800 ≥1R ±150	<1R ±800* ≥1R ±150
Dielectric withstanding voltage	RMS	700V	
Momentary overload	%	5	
Low temperature operation	%	5	
Temperature cycle	%	5	
Humidity	%	5	
Load life	%	5	
Terminal strength	%	5	
Resistance to solder heat	%	5	

\*0.1 ohm SP20F <1000 ppm.

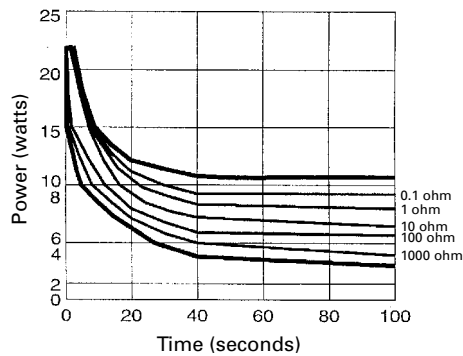
### SP20 Power Derating



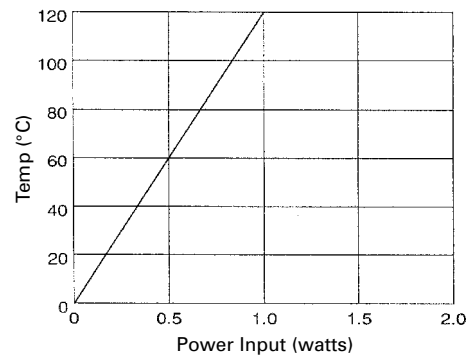
### SP20F Power Derating



### SP20F Typical Fusing



### SP20 and SP20F Temperature Rise



## Ordering Procedure

Example: SP20F at 470 ohms and 5% tolerance tape packed on a reel of 4000 pieces –

**SP20F - 470R J I**

Type \_\_\_\_\_

Value (use IEC62 code) \_\_\_\_\_

Tolerance (use IEC62 code) \_\_\_\_\_

J	5%	K	10%
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Packing \_\_\_\_\_

I	Tape	4000/reel	Standard
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