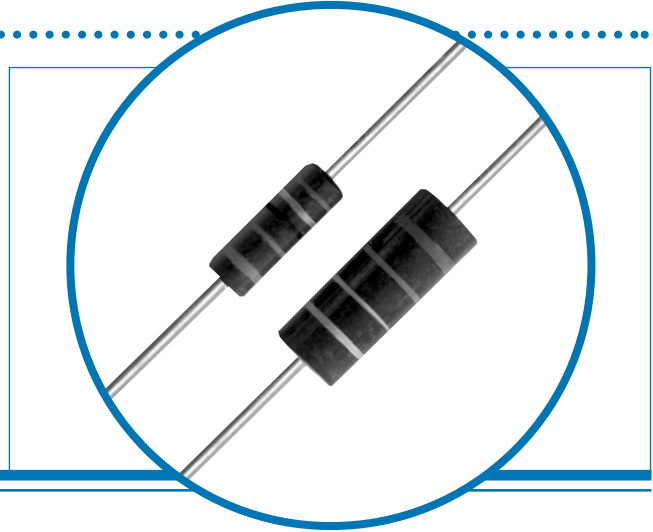


# General-Purpose Failsafe Moulded Wirewound Resistors

SPH/SPF Series

- **Drop-in replacement for BWH/BWF**
- **2 watt rated with 1 watt dimensions**
- **±5%, ±10% tolerance**
- **0.1 ohm to 2400 ohms**
- **TCR's as low as ±150 ppm/°C standard (custom TC's available)**
- **Weldable and solderable leads**

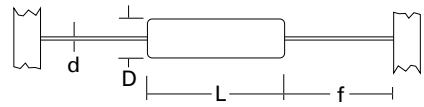


## Electrical Data

Type		SPH	SPF
EIA RS-344 Style			CRU2
MIL-R-11 Style			RC32/RC42
Resistance	ohms	OR1 to 2k4	OR1 to 1k
Tolerance	%		±5, ±10
Power rating	watts		2 at 70°C 1 at 115°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		1000V
Reduced pressure	RMS		625V
Hotspot temperature rise	watts		145°C at 2 watts
Current noise			Negligible

## Physical Data

Dimensions (mm)				
Type	L	D	d	f
SPH	14.3 ±0.25	5.72 ±0.20	0.813 ±0.05	38.1 ±3.2
SPF	14.3 ±0.25	5.72 ±0.20	0.813 ±0.05	38.1 ±3.2



### 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.

### 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.

### Encapsulation

The SPH and SPF are encapsulated utilizing a compression moulded phenolic plastic material. The SPF 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

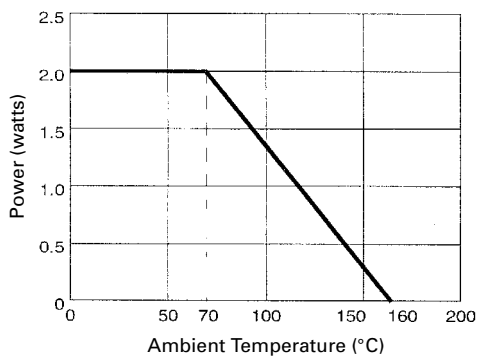
Welwyn Components reserves the right to make changes in product specification without notice or liability. All information is subject to Welwyn's own data and is considered accurate at time of going to print.

## Performance Data

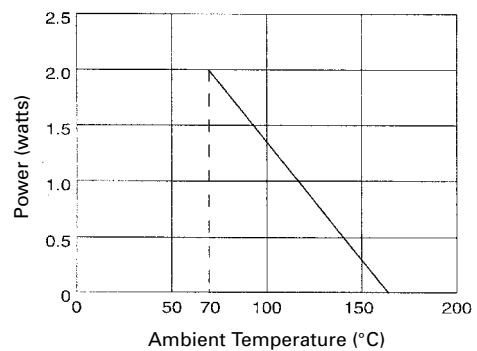
		SPH	SPF
Temperature coefficient (ppm)*	ohms	0.1 - 0.16 ±1000 0.18 - 0.68 ±800 0.75 -2400 ±400	0.10 ±1700 0.11 - 0.16 ±1000 0.18 - 0.68 ±800 0.75 - 1000 ±400
Dielectric withstanding voltage	RMS	1000V	
Momentary overload	%	5	
Low temperature operation	%	5	
Temperature cycle	%	5	
Humidity	%	5	
Load life	%	5	
Terminal strength	%	5	
Resistance to solder heat	%	5	

\*All ppm levels listed are maximum

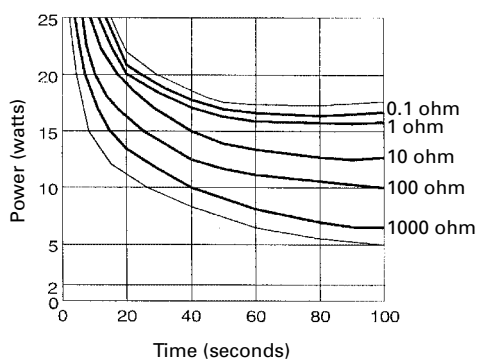
### SPH Power Derating



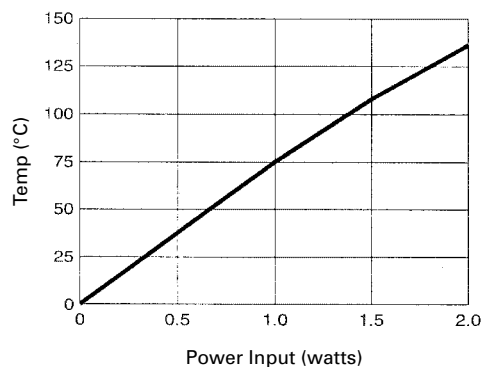
### SPF Power Derating



### SPF Typical Fusing



### SPH & SFF Temperature Rise



### Packaging

Resistors are supplied taped and reel. 4,000 pcs per reel.