



# FIBRE GLASS SUBSTRATE

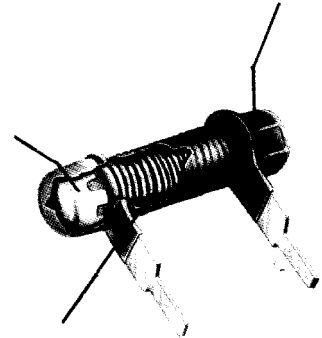
FLAME RETARDANT  
SILICONE COATING

SILICONE COATED WIRE WOUND RESISTORS  
DIRECT SNAP ON PCB MOUNTING

## HFP SERIES

- Choice of two terminals stand-off heights which are suitable for wave soldering.
- TCR as low as  $\pm 200$  ppm/ $^{\circ}\text{C}$  available.

MECHANICALLY CRIMPED,  
DUPLEX PLATED,  
PCB TYPE TERMINATION

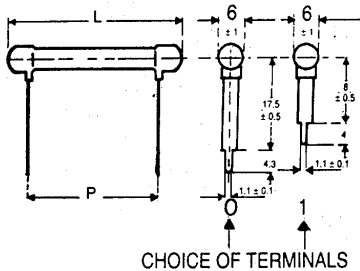


ALLOY RESISTANCE WIRE,  
WOUND ON FIBRE GLASS CORE

### APPLICABLE STANDARDS

- IS 8909 and - IEC - Pub 266

### PHYSICAL CONFIGURATION



HTR TYPE	POWER RATING at 70°C	DIMENSIONS(mm)			RESISTANCE RANGE		WT. PER PC '0' Terminal (gms)	WT. PER PC '1' Terminal (gms)
		L $\pm 2/-1$	D $\pm 1$	P $+2/-1$	MIN	MAX		
F-2P	2W	18.2	5.0	10.2	R10	2K0	1.38	1.05
F-4P	4W	23.3	5.0	15.2	R38	3K0	1.70	1.25
F-5P	5W	33.4	5.0	25.4	R63	5K0	2.10	1.90
F-7P	6.5W	43.5	5.0	35.4	R87	7K0	2.80	2.50
F-8P	8W	53.7	5.0	45.7	1R0	9K0	3.10	2.91

#### Choice of terminals

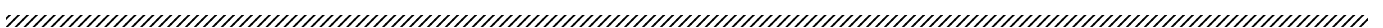
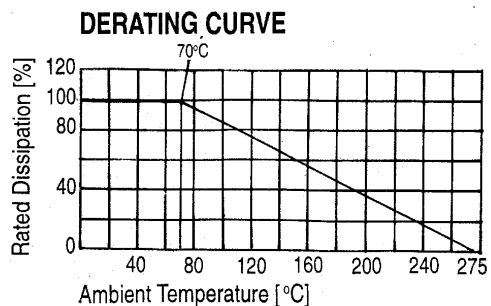
- If the longer stand-off terminal is required, suffix the type with 'O'. e.g. F-2 P-O to F-8 P-O.
- If the shorter stand-off terminal is required, suffix the type with '1' e.g. F-2 P-1 to F-8 P-1.

The resistance range given is applicable to the standard HFP series resistors. High positive temperature co-efficient resistances values much lower than the given range are available in a range of temperature co-efficients from  $\pm 450$  ppm/ $^{\circ}\text{C}$  to  $\pm 1300$  ppm/ $^{\circ}\text{C}$ .

Resistors with resistance value higher than the given range is possible using ceramic substrates.

### ELECTRICAL AND ENVIRONMENTAL CHARACTERISTICS / DATA

Test	Performance Requirements
Resistance tolerance	$\pm 10\%$ [K]; $\pm 5\%$ [J] [ $<1\Omega \pm 0.05\Omega$ ]
Rated ambient temperature [see derating curve]	at 70°C full power dissipation
Temperature co-efficient	$\pm 200$ ppm/ $^{\circ}\text{C}$ [ $>10\Omega$ ] $\pm 450$ ppm/ $^{\circ}\text{C}$ [ $<10\Omega$ ] $\pm 600$ ppm/ $^{\circ}\text{C}$ [ $<1\Omega$ ]
Short time overload	Max. $\Delta R \pm [2\% + 0.05\Omega]$
Moisture Resistance	Max. $\Delta R \pm [5\% + 0.05\Omega]$
Load life	Max. $\Delta R \pm [5\% + 0.05\Omega]$
Ambient operating temperature Range	- 25°C to + 155°C



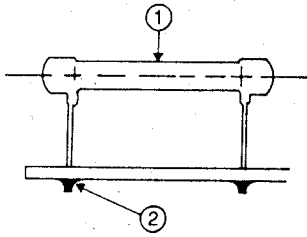


## TYPICAL APPLICATIONS

The HFP series has evolved in order to provide a low cost but reliable alternative to those OEMS who have automated assembly facilities including wave soldering . Due to their design, these resistors have merely to be snapped on to the PCB and wave soldered.

These resistors are shatterproof owing to their construction and are coated with a special silicone cement which cannot drip even at high overload.

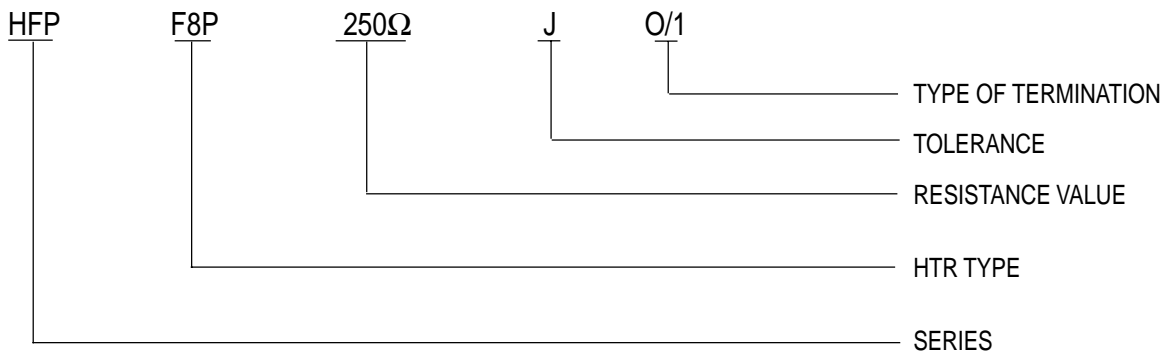
## TEMPERATURE RISE



- (1) BODY TEMPERATURE MEASURING POINT.  
 (2) SOLDER JOINT MEASURING POINT.

TYPE	TEMPERATURE AT FULL POWER DISSIPATION			
	MEASURING POINT 1		MEASURING POINT 2	
	HIGH RESISTANCE RANGE	LOW RESISTANCE RANGE	'O' TYPE TERMINAL	'I' TYPE TERMINAL
F2P	230°C	180°C	50°C	70°C
F4P	285°C	235°C	83°C	98°C
F5P	285°C	240°C	50°C	85°C
F7P	292°C	260°C	45°C	85°C
F8P	290°C	246°C	55°C	80°C

## ORDERING INFORMATION



**NOTE:** In this series there is a choice of terminal standoff heights available; please refer "PHYSICAL CONFIGURATION", for selection.



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