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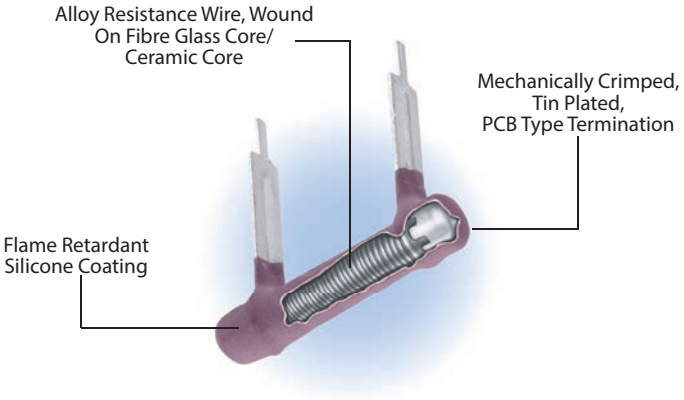


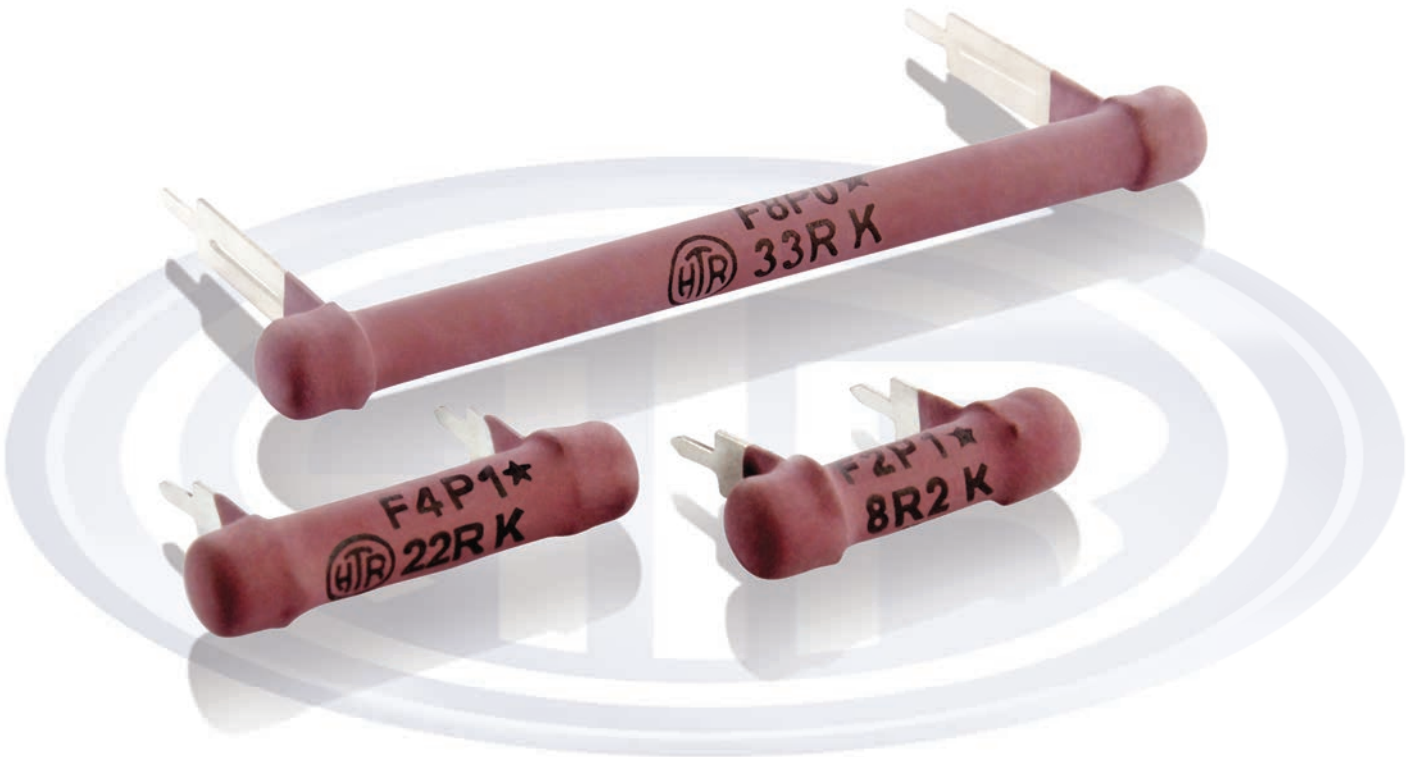
WIRE WOUND RESISTORS
SILICONE COATED TYPE

HFP
SERIES
FIBRE GLASS SUBSTRATE
Silicone Coated
Wire Wound Resistors
Plug in Style

- Flame retardant coating compatible with UL standards
- Choice of terminals which are suitable for wave soldering
- 2.5W to 8W
- R10 to 56K

AEC-Q200 Qualified

Pb-free * RoHS COMPLIANT



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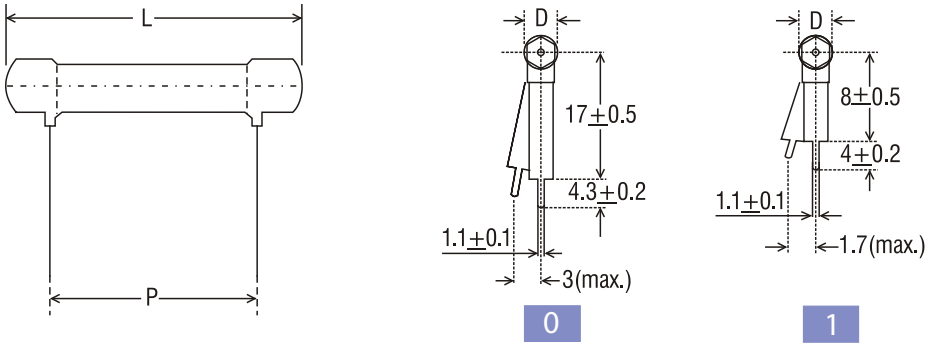
WIRE WOUND
RESISTORS
SILICONE
COATED TYPE
HFP

PHYSICAL CONFIGURATION



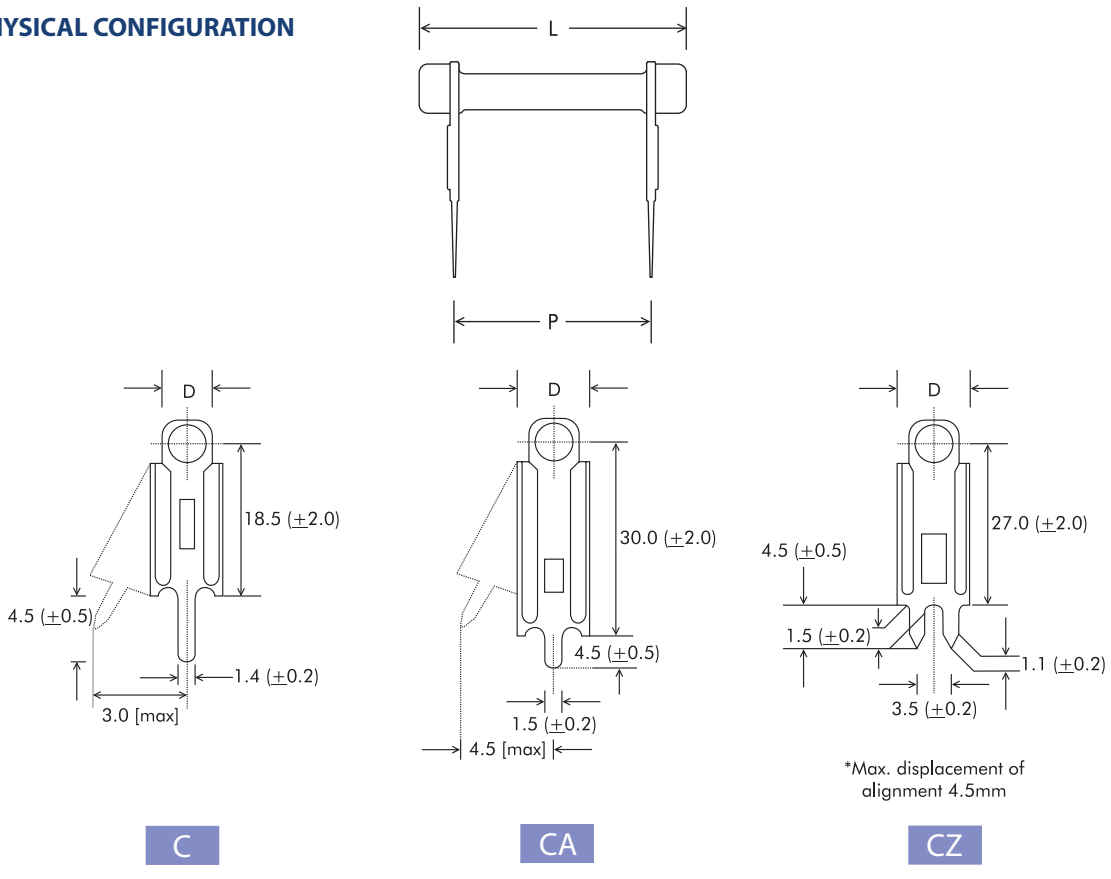
CHOICE OF TERMINALS

HTR TYPE	POWER RATING at 70°C	DIMENSIONS (mm)			RESISTANCE RANGE		TYPICAL WEIGHT PER PC '0' TERMINAL (gms)	TYPICAL WEIGHT PER PC '1' TERMINAL (gms)
		L +2/-1	* D ±1	P ±1	min	max		
F-2P	2.5W	18.2	5.0	10.2	R10	10K	1.38	1.05
F-4P	4W	23.3	5.0	15.2	R10	15K	1.70	1.25
F-5P	5W	33.4	5.0	25.4	R10	27K	2.10	1.90
F-7P	6.5W	43.5	5.0	35.4	R10	39K	2.80	2.50
F-8P	8W	53.7	5.0	45.7	R10	56K	3.10	2.91

- If the longer stand-off terminal is required, suffix the type with '0'. For e.g. F-2 P-0 to F-8 P-0.
- If the shorter stand-off terminal is required, suffix the type with '1'. For e.g. F-2 P-1 to F-8 P-1.
- The resistance range given is applicable to the standard HFP series resistors. Pulse type resistors available. Please consult factory and note (2) in ordering information.

* For resistance values <1R0, +0.8mm allowed.

PHYSICAL CONFIGURATION



WIRE WOUND RESISTORS SILICONE COATED TYPE

HFP

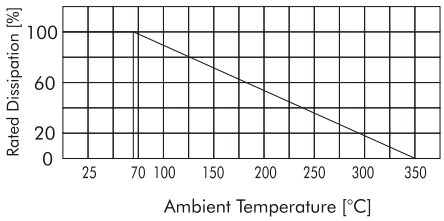
TYPE	POWER RATING at 70°C	DIMENSIONS (mm)			RESISTANCE RANGE		TYPICAL WEIGHT PER PC (gms)		
		L +2/-1	* D ±1	P ±1.0	min	max	'C' terminal	'CA' terminal	'CZ' terminal
F-4P	4W	23.3	5.0	15.2	R10	15K	1.8	2.2	1.8
F-5P	5W	33.4	5.0	25.4	R10	27K	2.2	2.4	2.2
F-7P	6.5W	43.5	5.0	35.4	R10	39K	2.9	3.0	2.8
F-8P	8W	53.7	5.0	45.7	R10	56K	3.15	3.2	3.15

* For resistance values <1R0, +0.8mm allowed

CHOICE OF TERMINALS

- If the "C" type stand-off terminal is required, suffix the type with "C". e.g. F-4P-C to F-8P-C
- If the "CA" type stand-off terminal is required, suffix the type with "CA". e.g. F-4P-CA to F-8P-CA
- If the "CZ" type stand-off terminal is required, suffix the type with "CZ". e.g. F-4P-CZ to F-8P-CZ

DERATING CURVE



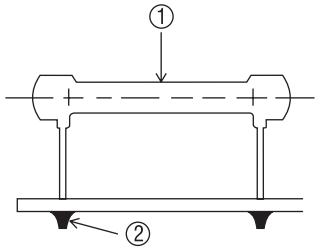
ELECTRICAL AND ENVIRONMENTAL CHARACTERISTICS / DATA

PARAMETER/PERFORMANCE TEST & TEST METHOD	PERFORMANCE REQUIREMENTS
Power Rating (Rated Ambient Temperature)	Full Power dissipation at 70°C and linearly derated to zero at 350°C (Refer Derating curve above)
Resistance Tolerances Available	±10% (K); ±5% (J)
Temperature Range	-55°C to +350°C with suitable derating as per derating curve
Voltage Rating / Limiting Voltage / Max Working Voltage	$V=\sqrt{PxR}$
Maximum Overload Voltage	Varies depending on resistance value, duration of overload and type of pulse waveform (contact factory for details)
Voltage Proof / Dielectric Withstanding Voltage. (based on limiting voltage x 2 for 60 secs)	ΔR ± [1% + R05] - No flashover, mechanical damage, arcing or insulation breakdown
Short Time Overload (5 x Rated Power for 5 secs)	ΔR ± [2% + R05]
Temperature Co-efficient of Resistance	± 60 to ±450 ppm/°C (Depending on resistance value)
Temperature Cycling (Room Temperature ⟶-55°C ⟶ Room Temperature ⟶200°C⟶ Room Temperature for 5 cycles)	ΔR ± [2% + R05]
Damp Heat (Steady State) (40°C at 93% R.H for 1000 hours - no load applied)	ΔR ± [2% + R05] - Average
Endurance - Load life (70°C with limiting voltage - 1.5 hours on / 0.5 hours off for 1000 hours)	ΔR ± [3% + R05] - Average
Solvent Resistance [IPA for 60 secs ± 10 secs]	No effect on coating / marking

MECHANICAL SPECIFICATIONS

PARAMETER/PERFORMANCE TEST & TEST METHOD	PERFORMANCE REQUIREMENTS
Terminal Tensile Strength	40 Newtons
Resistance to Soldering Heat (260°C - 270°C for 10 secs)	ΔR ± [0.2% + R05] - Typical
Solderability (As per IEC - 60068 - 2 - 20Ta)	Must meet the requirements laid down
Marking	As per IEC Pub. 60062

TEMPERATURE RISE



1. Body Temperature Measuring Point
2. Solder Joint Temperature Measuring Point

WIRE WOUND
RESISTORS
SILICONE
COATED TYPE
HFP

TYPE	Temperature At Full Power Dissipation						
	Measuring Point 1		Measuring Point 2				
	High Resistance Range	Low Resistance Range	'O' Type Terminal	'1' Type Terminal	'C' Type Terminal	'CA' Type Terminal	'CZ' Type Terminal
F2P	230°C	180°C	50°C	70°C			
F4P	285°C	235°C	53°C	98°C	55°C	52°C	49°C
F5P	285°C	240°C	50°C	85°C	57°C	57°C	58°C
F7P	292°C	260°C	45°C	85°C	62°C	55°C	55°C
F8P	290°C	246°C	55°C	80°C	57°C	55°C	55°C

TYPICAL APPLICATIONS

The HFP series was evolved in order to provide a low cost but reliable alternative to those OEM's who have automated assembly facilities including wave soldering. Due to their design, these resistors have merely to be plugged into the PCB and wave soldered.

ORDERING INFORMATION

Series	Type	Packing	Resistance Value	Tolerance	Type of Termination
HFP	F8P / F8P*	Bulk F8P / F8P*	100R	J	0 / 1 / C / CA / CZ

Note: In this series, there is a choice of terminal stand-off heights available; please refer "PHYSICAL CONFIGURATION" for selection.

1. For RoHS version - F8P *
2. For Pulse type - F8P I