



**PRODUCT FEATURES:** Low hold current Solid state, Radial  
 leaded product ideal for up to  
 60V/100V/250V/600V.

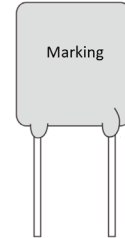
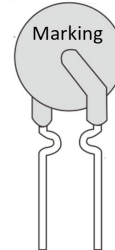
**Operation Current:** 0.08A ~ 0.40A.

**Maximum Operation Voltage:** 60V/100V/250V<sub>DC</sub>.

**Maximum Interrupt Voltage:** 250V/600V<sub>AC</sub>.

**Temperature Range:** -40°C ~ +85°C.

**Applications:** Wide variety of electronic equipment.



Lead Size: 22AWG

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**ELECTRICAL CHARACTERISTICS (23°C)**

Part Number	Hold	Trip	Max. Time to Trip		Max. Current	Max. Oper. Voltage	Max. Int. Voltage	Typ. Power	Resistance	
	Current	Current	Current	Time					R <sub>MIN</sub>	R <sub>1MAX</sub>
	I <sub>H</sub> , A	I <sub>T</sub> , A	A	Sec	I <sub>MAX</sub> , A	V <sub>MAX</sub> , V <sub>DC</sub>	V <sub>I-MAX</sub> , V <sub>AC</sub>	P <sub>d</sub> , W	Ohms	Ohms
FRH080-250	0.08	0.16	0.35	4.00	3.00	100	250	1.00	14.00	33.00
FRH110-250	0.11	0.22	1.00	2.00	3.00	100	250	1.00	5.00	16.00
FRH120-250	0.12	0.24	1.00	2.00	3.00	100	250	1.00	4.00	16.00
FRH145-250	0.15	0.29	1.00	2.50	3.00	100	250	1.00	3.00	12.00
FRH180-250	0.18	0.65	3.00	2.00	10.00	100	250	1.00	0.80	4.00
FRH150-600	0.15	0.30	1.00	4.00	3.00	250	600	1.00	6.00	17.00
FRH160-600	0.16	0.32	1.00	7.00	3.00	250	600	1.00	4.00	16.00
FRH160-600	0.16	0.32	1.00	7.00	3.00	250	600	1.00	4.00	18.00
FRH200-600	0.20	0.40	1.00	12.00	3.00	250	600	1.00	4.00	13.50
FRH250-600	0.25	0.85	3.00	1.00	3.00	250	600	1.00	1.00	7.00
FRH400-600	0.40	1.00	3.00	4.00	3.00	60	600	1.00	0.95	1.90

I<sub>H</sub>=Hold current-maximum current at which the device will not trip at 23°C still air.

I<sub>T</sub>=Trip current-maximum current at which the device will always trip at 23°C still air.

V<sub>MAX</sub>=Maximum operating voltage at which the device can withstand without damage at its rated current.

V<sub>I-MAX</sub> = Maximum interrupt voltage device can withstand for short period of time. (Not for long term.)

I<sub>MAX</sub>= Maximum fault current device can withstand without damage at rated voltage (V<sub>MAX</sub>).

P<sub>d</sub>=Typical power dissipated from device when in the tripped state in 23°C still air environment.

R<sub>MIN</sub>=Minimum device resistance at 23°C.

R<sub>1MAX</sub>=Maximum device resistance at 23°C 1 hour after tripping .

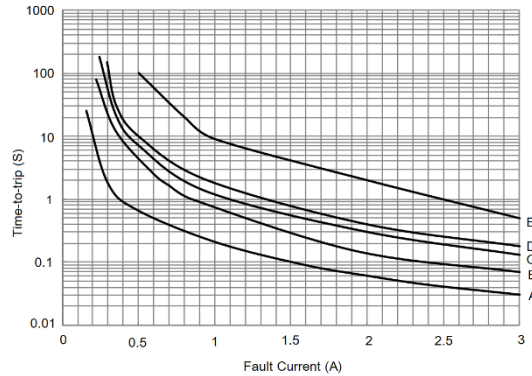
**Thermal Derating for PPTC Device at Various Ambient Temperatures**

Temperature	-40°C	-20°C	0°C	23°C	30°C	40°C	50°C	60°C	70°C	85°C
Current Derating %	145%	130%	115%	100%	92%	85%	78%	80%	62%	50%

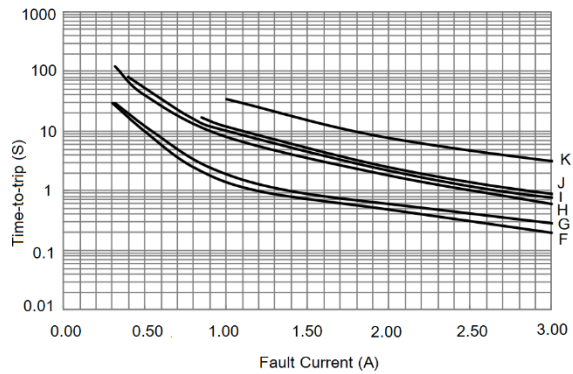


**Typical Time-To-Trip at 23°C**

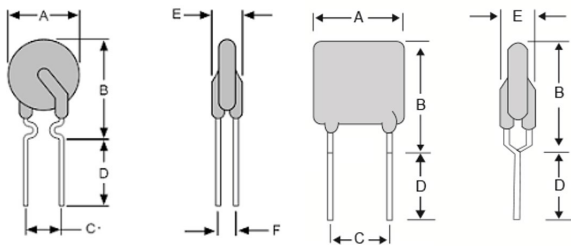
- A = FRH080-250
- B = FRH110-250
- C = FRH120-250
- D = FRH145-250
- E = FRH180-250



- F = FRH150-600
- G = FRH160-600
- H = FRH160-600
- I = FRH200-600
- J = FRH250-600
- K = FRH400-600



**Product Dimensions (Millimeters)**



**Terminal Pad Materials:**

Tin-Plated Copper  
22AWG,  $\Phi$ 0.65mm Diameter

**Terminal Pad Solderability:**

MIL-STD-202, Method 208E  
Flame retardant epoxy  
Meet UL-94V-0 requirement

Part Number	A	B	C	D	E
	Max	Max	Typ.	Min	Max
FRH080-250	5.8	9.6	5.0	4.7	4.6
FRH110-250	6.8	9.9	5.0	4.7	4.6
FRH120-250	6.5	11.0	5.0	4.7	4.6
FRH145-250	6.5	11.0	5.0	4.7	4.6
FRH180-250	9.0	12.0	5.0	4.7	3.8
FRH150-600	9.0	12.5	5.0	4.7	4.6
FRH160-600	9.0	12.5	5.0	4.7	4.6
FRH160-600	16.0	12.6	5.0	4.7	6.0
FRH200-600	12.0	14.0	5.0	4.7	6.0
FRH250-600	12.2	15.0	5.0	4.7	6.0
FRH400-600	15.0	14.5	5.0	4.7	6.0