

**Application:**

Telecommunication and Data transmitting

**Product Features:**

Low hold current, Solid state

Radial-leaded product ideal for up to 60V/600V

**Operation Current:** 0.08 A~0.18A

**Maximum Voltage:** 60V/250V/600V

**Temperature Range:** -40°C to 85°C

**Agency Approvals:** UL, C-UL & TUV pending

**Electrical Characteristics(23°C)**

Part Number	Hold Current I <sub>H</sub> ,A	Maximum Current I <sub>MAX</sub> , A	Max Oper. Voltage V <sub>O-MAX</sub> , Vdc	Max Int. Voltage V <sub>I-MAX</sub> ,V	Resistance Tolerance	
					R <sub>MIN</sub> Ω	R <sub>1MAX</sub> Ω
FRH080-250U	0.08	3.0	60	250	14.0	33.0
FRH080-250	0.08	3.0	60	250	14.0	33.0
FRH110-250U	0.11	3.0	60	250	5.0	16.0
FRH110-250	0.11	3.0	60	250	5.0	16.0
FRH120-250U	0.12	3.0	60	250	6.0	16.0
FRH120-250	0.12	3.0	60	250	4.0	16.0
FRH145-250U	0.15	3.0	60	250	3.5	12.0
FRH145-250	0.15	3.0	60	250	3.0	12.0
FRH180-250U	0.18	10.0	60	250	0.8	4.0
FRH180-250	0.18	10.0	60	250	0.8	4.0
FRH150-600	0.15	3.0	60	600	6.0	22.0
FRH160-600	0.16	3.0	60	600	4.0	18.0

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-minimum current at which the device will always trip at 23°C still air.

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

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

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 .

Physical specifications:

Lead material: FRH080~FRH110 Tin plated copper,22 AWG.

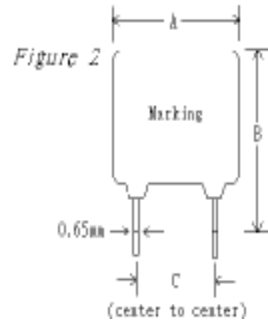
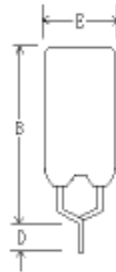
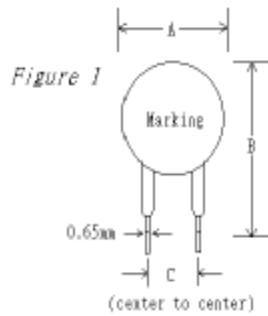
FRH120~FRH180 Tin plated copper,20 AWG.

Soldering characteristics:MIL-STD-202, Method 208E.

Insulating coating:Flame retardant epoxy ,meet UL-94V-O requirement.



## FRH Product Dimensions (millimeters)

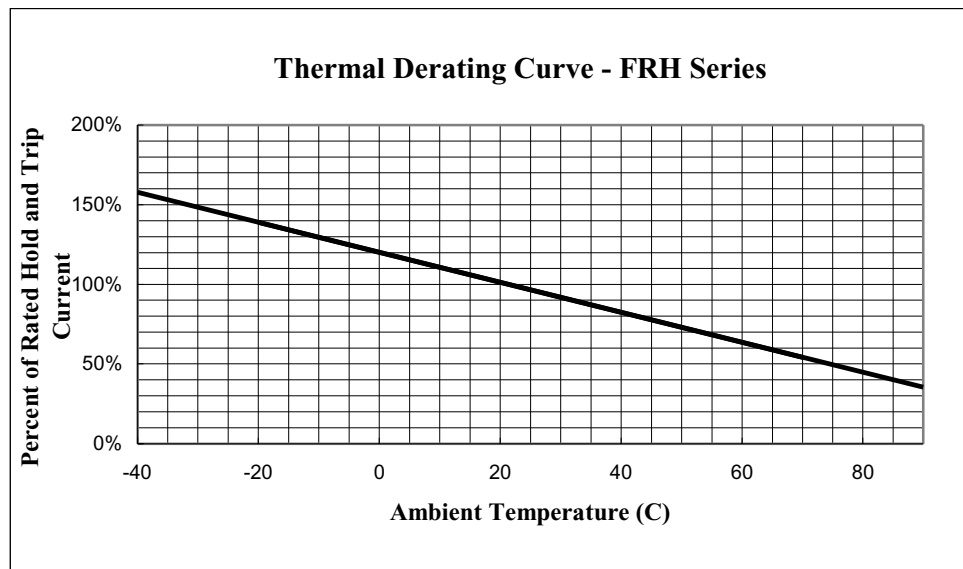


Lead Size :22AWG,  
Φ 0.65 mm Diameter

Lead Size : 20AWG,  
Φ 0.65 mm Diameter

Part Number	Fig	A	B	C	D	E
		Maximum	Maximum	Typical	Minimum	Maximum
FRH080-250U	1	4.8	9.1	5.0	4.7	3.8
FRH080-250	1	5.3	9.6	5.0	4.7	4.6
FRH110-250U	1	5.3	9.4	5.0	4.7	3.8
FRH110-250	1	5.8	9.9	5.0	4.7	4.6
FRH120-250U	2	6.0	10.0	5.0	4.7	3.8
FRH120-250	2	6.5	11.0	5.0	4.7	4.6
FRH145-250U	2	6.0	10.0	5.0	4.7	3.8
FRH145-250	2	6.5	11.0	5.0	4.7	4.6
FRH180-250U	2	10.4	12.6	5.0	4.7	3.8
FRH180-250	2	10.9	13.6	5.0	4.7	4.6
FRH150-600	2	13.5	12.6	5.0	4.7	6.0
FRH160-600	2	16.0	12.6	5.0	4.7	6.0

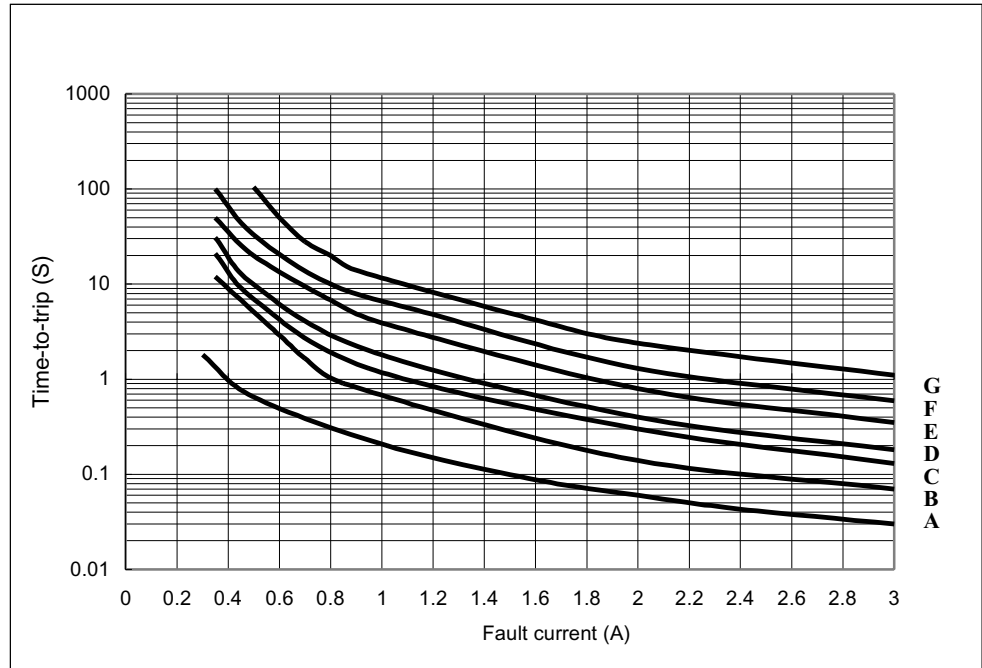
## Thermal Derating Curve





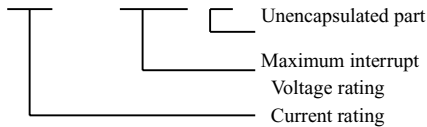
## Typical Time-To-Trip at 23°C

- A=FRH080(U) -250
- B=FRH110(U) -250
- C=FRH120(U) -250
- D=FRH145(U) -250
- E=FRH180(U) -250
- F=FRH150-600
- G=FRH160-600



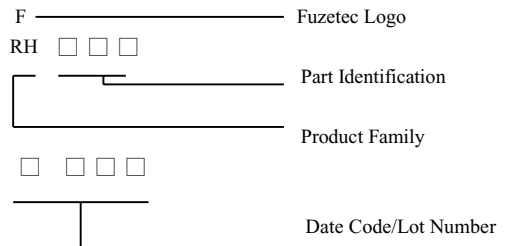
## Part Numbering System

FRH □□□ - □□□ U



Example

## Part Marking System



## Standard Package

P/N	Pcs /Bag	Reel/Tape
FRH080-250U	300	1.5K
FRH080-250	300	1.5K
FRH110-250U	300	1.5K
FRH110-250	300	1.5K
FRH120-250U	300	1.5K
FRH120-250	300	1.5K

P/N	Pcs /Bag	Reel/Tape
FRH145-250U	300	1.5K
FRH145-250	300	1.5K
FRH180-250U	200	1.5K
FRH180-250	200	1.5K
FRH150-600	100	600
FRH160-600	100	600