

FEATURES

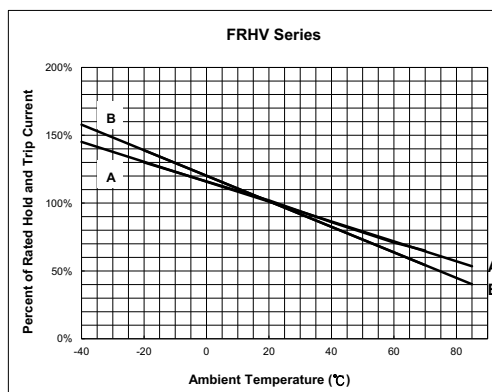
- Applications : IEEE 1394 Fire Wire, Computers & Consumer electronics
- Product Features : Fast trip time, Lower Trip-to-hold Ratio
- Operation Current : 0.5A ~ 2.50A
- Maximum Voltage : 36Vdc
- Temperature Range : -40°C to 85°C

AGENCY RECOGNITION

Made for RFE by UL shop Fuzetec

- UL (E211981)
- C-UL (E211981)
- TÜV (R50138901)

THERMAL DERATING CURVE



A= FRH180-250XF
B= All other FRHV devices

ELECTRICAL CHARACTERISTICS (23°C)

| Part Number | Hold Current I _H , A | Trip Current I _T , A | Max. Time to Trip | | Maximum Current I _{MAX} , A | Max. Oper. Voltage V _{MAX} , Vdc | Max. Int. Voltage V _{I-MAX} , Vac | Typical Power Pd, W | Resistance | |
|--------------|------------------------------------|------------------------------------|-------------------|--------------|---|--|---|------------------------|---------------|----------------|
| | | | Current A | Time Sec. | | | | | R min Ohms | R1 max Ohms |
| FRH080-250VF | 0.08 | 0.16 | 0.35 | 4.0 | 3.0 | 100 | 250 | 1.0 | 14.00 | 33.00 |
| FRH110-250VF | 0.11 | 0.22 | 1.00 | 2.0 | 3.0 | 100 | 250 | 1.0 | 5.00 | 16.00 |
| FRH120-250VF | 0.12 | 0.24 | 1.00 | 2.0 | 3.0 | 100 | 250 | 1.0 | 4.00 | 16.00 |
| FRH145-250VF | 0.15 | 0.29 | 1.00 | 2.5 | 3.0 | 100 | 250 | 1.0 | 3.00 | 12.00 |
| FRH180-250XF | 0.18 | 0.65 | 3.00 | 2.0 | 10.0 | 100 | 250 | 1.0 | 0.80 | 4.00 |
| FRH150-600MF | 0.15 | 0.30 | 1.00 | 4.0 | 3.0 | 250 | 600 | 1.0 | 6.00 | 17.00 |
| FRH160-600MF | 0.16 | 0.32 | 1.00 | 7.0 | 3.0 | 250 | 600 | 1.0 | 4.00 | 16.00 |
| FRH160-600VF | 0.16 | 0.32 | 1.00 | 7.0 | 3.0 | 250 | 600 | 1.0 | 4.00 | 18.00 |
| FRH200-600VF | 0.20 | 0.40 | 1.00 | 12.0 | 3.0 | 250 | 600 | 1.0 | 4.00 | 13.50 |
| FRH250-600VF | 0.25 | 0.85 | 3.00 | 1.0 | 3.0 | 250 | 600 | 1.0 | 1.00 | 7.00 |
| FRH400-600F | 0.40 | 1.00 | 3.00 | 4.0 | 3.0 | 60 | 600 | 1.0 | 0.95 | 1.90 |

I_H=Hold current-maximum current at which the device will not trip at 23°C still air.
 I_T=Trip current-maximum current at which the device will always trip at 23°C still air.
 V_{MAX}=Maximum voltage device can withstand without damage at its rated current.
 I_{MAX}=Maximum fault current device can withstand without damage at rated voltage (V_{MAX}).
 Pd=Typical power dissipated from device when in the tripped state in 23°C still air environment.
 R_{MIN}=Minimum device resistance at 23°C.
 R1_{MAX}=Maximum device resistance at 23°C, 1 hour after tripping.

Physical specifications:

Lead material: Tin plated copper, 24 AWG.
 Soldering characteristics: MIL-STD-202, Method 208E.
 Insulating coating: Flame retardant epoxy, meet UL-94V-0 requirement.

* Note: All FRHV products are designed to assist equipment to pass ITU, UI1950 or Gr1089 specification.
 * FRH150-600MF, FRH160-600VF meet UL497A Overvoltage and Endurance Conditioning requirements for Thermistor type components.

CAUTION : FRHV devices are not intended for continuous use of Line Voltage such as 120Vac ~ 600Vac and

NOTE: All Specifications subject to change without notice.

■ **DIMENSIONS (mm)**

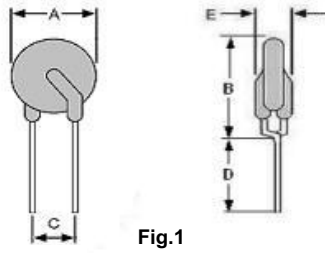


Fig.1
Lead Size :22AWG,
Φ 0.65 mm Diameter

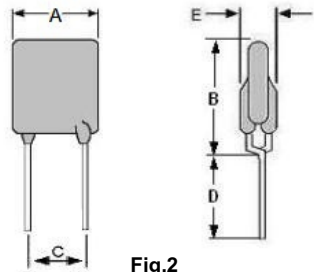
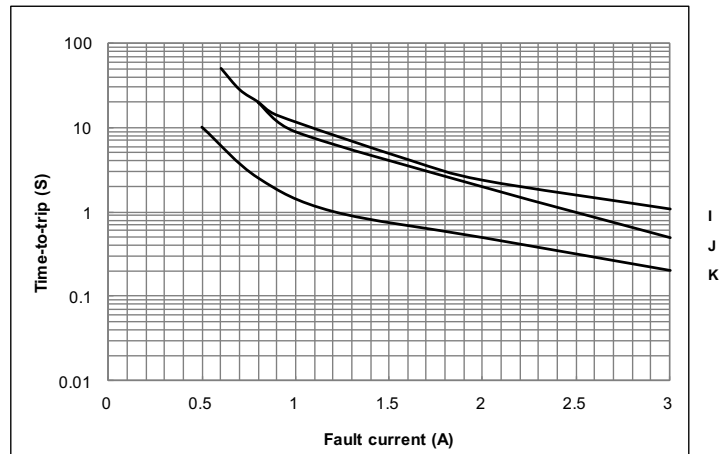
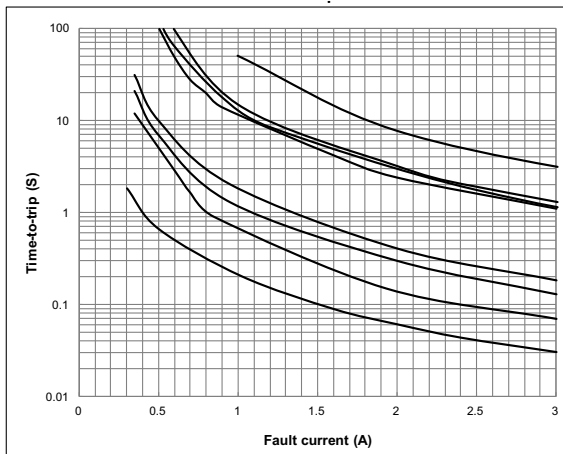


Fig.2
Lead Size : 22AWG,
Φ 0.65 mm Diameter

| Part Number | Fig. | A | B | C | D | E |
|--------------|------|---------|---------|---------|---------|---------|
| | | Maximum | Maximum | Typical | Minimum | Maximum |
| FRH080-250VF | 1 | 5.8 | 9.6 | 5.0 | 4.7 | 4.6 |
| FRH110-250VF | 1 | 6.8 | 9.9 | 5.0 | 4.7 | 4.6 |
| FRH120-250VF | 2 | 6.5 | 11.0 | 5.0 | 4.7 | 4.6 |
| FRH145-250VF | 2 | 6.5 | 11.0 | 5.0 | 4.7 | 4.6 |
| FRH180-250XF | 1 | 9.0 | 12.0 | 5.0 | 4.7 | 3.8 |
| FRH150-600MF | 2 | 9.0 | 12.5 | 5.0 | 4.7 | 4.6 |
| FRH160-600MF | 2 | 9.0 | 12.5 | 5.0 | 4.7 | 4.6 |
| FRH160-600VF | 2 | 16.0 | 12.6 | 5.0 | 4.7 | 6.0 |
| FRH200-600VF | 2 | 12.0 | 14.0 | 5.0 | 4.7 | 6.0 |
| FRH250-600VF | 2 | 12.0 | 15.0 | 5.0 | 4.7 | 6.0 |
| FRH400-600F | 2 | 15.0 | 14.5 | 5.0 | 4.7 | 6.0 |

■ **TYPICAL TIME-TO-TRIP AT 23°C**



- A= FRH080-250VF
- B= FRH110-250VF
- C= FRH120-250VF
- D= FRH145-250VF
- E= FRH160-600VF
- F= FRH200-600VF
- G= FRH250-600VF
- H= FRH400-600F

- I= FRH160-600MF
- J= FRH180-250XF
- K= FRH150-600MF

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