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|---|---|------------------|----------|-------------|
|  FUZETEC TECHNOLOGY CO., LTD. | NO. | PQ08-101E | | |
| | Product Specification and Approval Sheet | Version | 9 | Page |

Radial Leaded PTC Resettable Fuse : FRG Series

1. Summary

- (a) **RoHS Compliant (Lead Free) Product**
- (b) **Applications : Wide variety of electronic equipment**
- (c) **Product Features : Very Low resistance, Very High hold current, Solid state, Radial leaded product ideal for up to 16VDC**
- (d) **Operation Current : 2.5A~14.0A**
- (e) **Maximum Voltage : 16VDC**
- (f) **Temperature Range : -40°C to 85°C**

2. Agency Recognition

UL : File No. E211981
C-UL: File No. E211981
TÜV: File No. R50004084

3. Electrical Characteristics (23°C)

| Part Number | Hold Current | Trip Current | Max.Time to trip | Max. Current | Rated Voltage | Typ. Power | Resistance | |
|--------------------|--------------------|--------------------|------------------------|----------------------|------------------------|--------------------|------------------|-------------------|
| | I _H , A | I _T , A | at 5xI _H ,s | I _{MAX} , A | V _{MAX} , VDC | P _d , W | R _{MIN} | R _{1MAX} |
| | | | | | | | Ohms | Ohms |
| FRG250-16F | 2.5 | 4.7 | 5.0 | 100 | 16 | 1.0 | 0.022 | 0.053 |
| FRG300-16F | 3.0 | 5.1 | 2.0 | 100 | 16 | 2.3 | 0.034 | 0.105 |
| FRG400-16F | 4.0 | 6.8 | 3.5 | 100 | 16 | 2.4 | 0.020 | 0.063 |
| FRG500-16F | 5.0 | 8.5 | 3.6 | 100 | 16 | 2.6 | 0.014 | 0.044 |
| FRG600-16F | 6.0 | 10.2 | 5.8 | 100 | 16 | 2.8 | 0.009 | 0.033 |
| FRG700-16F | 7.0 | 11.9 | 8.0 | 100 | 16 | 3.0 | 0.006 | 0.021 |
| FRG800-16F | 8.0 | 13.6 | 9.0 | 100 | 16 | 3.0 | 0.005 | 0.018 |
| FRG900-16F | 9.0 | 15.3 | 12.0 | 100 | 16 | 3.3 | 0.004 | 0.015 |
| FRG1000-16F | 10.0 | 17.0 | 12.5 | 100 | 16 | 3.3 | 0.003 | 0.012 |
| FRG1100-16F | 11.0 | 18.7 | 13.5 | 100 | 16 | 3.7 | 0.003 | 0.010 |
| FRG1200-16F | 12.0 | 20.4 | 16.0 | 100 | 16 | 4.2 | 0.002 | 0.009 |
| FRG1400-16F | 14.0 | 23.8 | 20.0 | 100 | 16 | 4.6 | 0.002 | 0.008 |

I_H=Hold current-maximum current at which the device will not trip at 23°C still air.
 I_T=Trip current-minimum 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).
 P_d=Typical power dissipated from device when in the tripped state in 23°C still air environment.
 R_{MIN}=Minimum device resistance at 23°C.
 R_{1MAX}=Maximum device resistance at 23°C 1 hour after tripping .

Physical specifications:

Lead material: FRG250-16F Tin plated copper clad steel, 24 AWG.

FRG300-16F~FRG1100-16F Tin plated copper,20 AWG.

FRG1200-16F~FRG1400-16F Tin plated copper,18 AWG.

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

Insulating coating:Flame retardant epoxy ,meet UL-94V-0 requirement.

NOTE : Specification subject to change without notice.

2019/11/13



4. Production Dimensions (millimeter)

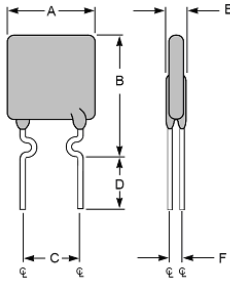


Figure 1
Lead Size: 24AWG
Φ 0.51 mm Diameter

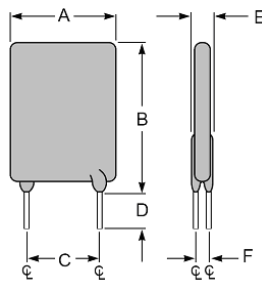


Figure 2
Lead Size: 20AWG
Φ 0.81 mm Diameter

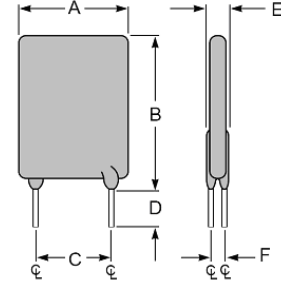
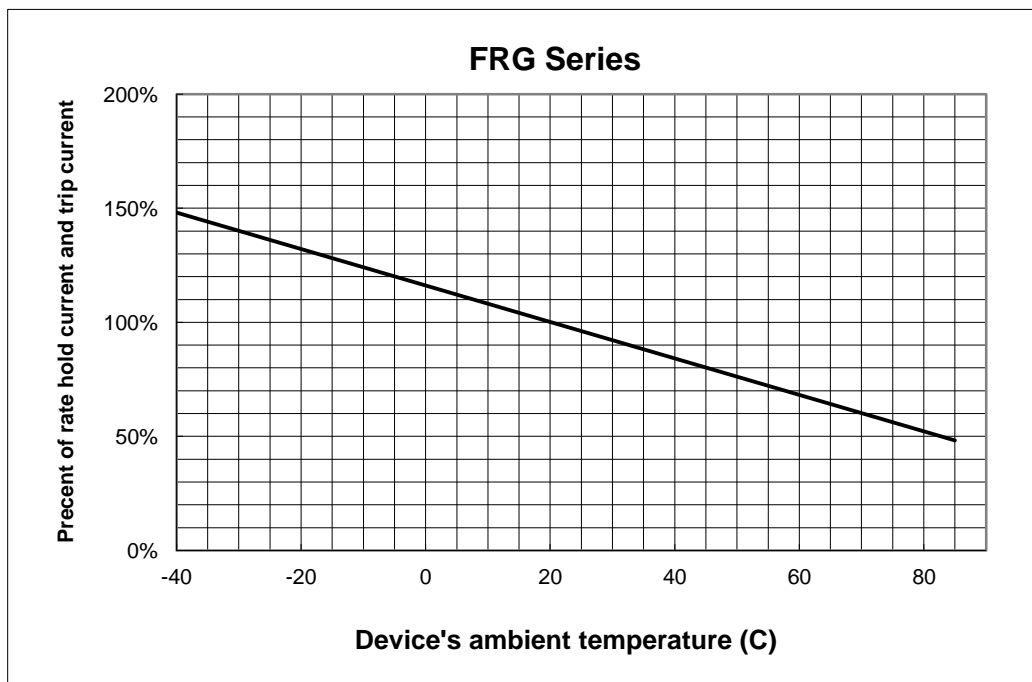


Figure 3
Lead Size: 18AWG
Φ 1.0 mm Diameter

| Part Number | Fig | A | B | C | D | E | F |
|-------------|-----|---------|---------|---------|---------|---------|---------|
| | | Maximum | Maximum | Typical | Minimum | Maximum | Typical |
| FRG250-16F | 1 | 8.9 | 12.8 | 5.1 | 7.6 | 3.0 | 1.2 |
| FRG300-16F | 2 | 7.1 | 11.0 | 5.1 | 7.6 | 3.0 | 1.2 |
| FRG400-16F | 2 | 8.9 | 12.8 | 5.1 | 7.6 | 3.0 | 1.2 |
| FRG500-16F | 2 | 10.4 | 14.3 | 5.1 | 7.6 | 3.0 | 1.2 |
| FRG600-16F | 2 | 10.7 | 17.1 | 5.1 | 7.6 | 3.0 | 1.2 |
| FRG700-16F | 2 | 11.2 | 19.7 | 5.1 | 7.6 | 3.0 | 1.2 |
| FRG800-16F | 2 | 12.7 | 20.9 | 5.1 | 7.6 | 3.0 | 1.2 |
| FRG900-16F | 2 | 14.0 | 21.7 | 5.1 | 7.6 | 3.0 | 1.2 |
| FRG1000-16F | 2 | 16.5 | 24.1 | 5.1 | 7.6 | 3.0 | 1.2 |
| FRG1100-16F | 2 | 17.5 | 26.0 | 5.1 | 7.6 | 3.0 | 1.2 |
| FRG1200-16F | 3 | 17.5 | 28.0 | 10.2 | 7.6 | 3.6 | 1.4 |
| FRG1400-16F | 3 | 27.9 | 27.9 | 10.2 | 7.6 | 3.6 | 1.4 |

5. Thermal Derating Curve

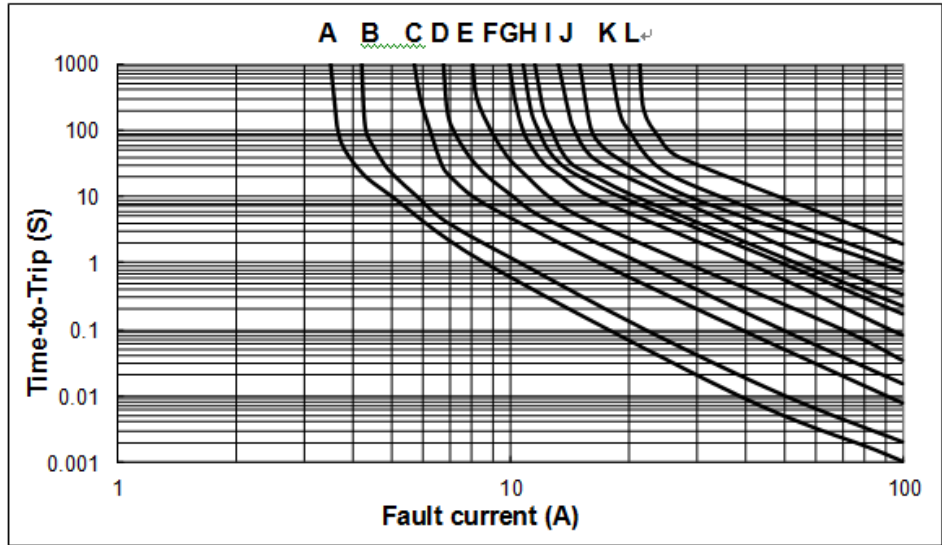


NOTE : Specification subject to change without notice.



6. Typical Time-To-Trip at 23°C

- A = FRG250-16F
- B = FRG300-16F
- C = FRG400-16F
- D = FRG500-16F
- E = FRG600-16F
- F = FRG700-16F
- G = FRG800-16F
- H = FRG900-16F
- I = FRG1000-16F
- J = FRG1100-16F
- K = FRG1200-16F
- L = FRG1400-16F



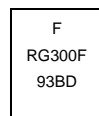
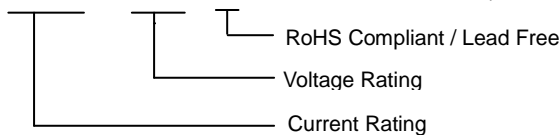
7. Material Specification

Lead material : FRG250-16F Tin plated copper clad steel, 24 AWG.
 FRG300-16F~FRG1100-16F Tin plated copper, 20 AWG.
 FRG1200-16F~FRG1400-16F Tin plated copper, 18 AWG.
 Soldering characteristics:MIL-STD-202, Method 208E.
 Insulating coating: Flame retardant epoxy, meets UL-94V-0 requirement.

8. Part Numbering and Marking System

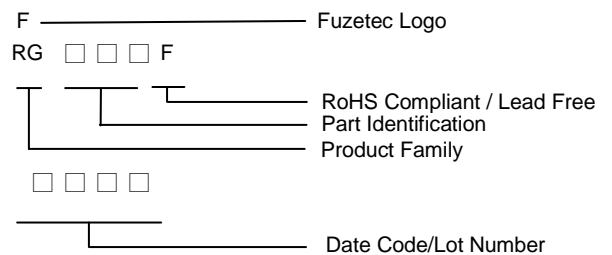
Part Numbering System

FRG □□□ - □□ F



Example

Part Marking System



Note: Font on Marking may look slightly different due to fine turnings of each Marking printer.

Warning:



- Each product should be carefully evaluated and tested for their suitability of application.
- Operation beyond the specified maximum rating or improper use may result in damage and possible electrical arcing and/or flame.
- PPTC device are intended for occasional overcurrent protection. Application for repeated overcurrent condition and/or prolonged trip are not anticipated.
- Avoid contact of PPTC device with chemical solvent, including some inert material such as silicone based oil, lubricant and etc. Prolonged contact will damage the device performance.
- Additional protection mechanism are strongly recommended to be used in conjunction with the PPTC device for protection against abnormal or failure conditions.
- Avoid use of PPTC device in a constrained space such as potting material, housing and containers where have limited space to accommodate device thermal expansion and/or contraction.

NOTE : Specification subject to change without notice.

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