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|  FUZETEC TECHNOLOGY CO., LTD. | NO. | PQ02-101E | | |
| | Product Specification and Approval Sheet | Version | A0 | Page |

Radial Leaded PTC Resettable Fuse: FRU Series

1. Summary

- (a) **RoHs Compliant (Lead Free) Product**
- (b) **Applications: Wide variety of electronic equipment**
- (c) **Product Features: Low resistance, High hold current, Solid state, Radial leaded product ideal for up to 30VDC**
- (d) **Operation Current: 0.9A~9.0A**
- (e) **Maximum Voltage: 30VDC**
- (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 | Maximum Current | Rated Voltage | Typical Power | Resistance | |
|-------------|--------------|--------------|-----------------------|-----------------|-----------------|---------------|------------|------------|
| | I_H , A | I_T , A | at $5 \times I_H$, s | I_{MAX} , A | V_{MAX} , VDC | P_d , W | R_{MIN} | R_{1MAX} |
| | | | | | | | Ohms | Ohms |
| FRU090-30F | 0.90 | 1.80 | 5.9 | 100 | 30 | 0.6 | 0.070 | 0.220 |
| FRU110-30F | 1.10 | 2.20 | 6.6 | 100 | 30 | 0.7 | 0.050 | 0.170 |
| FRU135-30F | 1.35 | 2.70 | 7.3 | 100 | 30 | 0.8 | 0.040 | 0.130 |
| FRU160-30F | 1.60 | 3.20 | 8.0 | 100 | 30 | 0.9 | 0.030 | 0.110 |
| FRU185-30F | 1.85 | 3.70 | 8.7 | 100 | 30 | 1.0 | 0.030 | 0.090 |
| FRU250-30F | 2.50 | 5.00 | 10.3 | 100 | 30 | 1.2 | 0.020 | 0.070 |
| FRU300-30F | 3.00 | 6.00 | 10.8 | 100 | 30 | 2.0 | 0.020 | 0.080 |
| FRU400-30F | 4.00 | 8.00 | 12.7 | 100 | 30 | 2.5 | 0.010 | 0.050 |
| FRU500-30F | 5.00 | 10.00 | 14.5 | 100 | 30 | 3.0 | 0.010 | 0.050 |
| FRU600-30F | 6.00 | 12.00 | 16.0 | 100 | 30 | 3.5 | 0.005 | 0.040 |
| FRU700-30F | 7.00 | 14.00 | 17.5 | 100 | 30 | 3.8 | 0.005 | 0.030 |
| FRU800-30F | 8.00 | 16.00 | 18.8 | 100 | 30 | 4.0 | 0.005 | 0.020 |
| FRU900-30F | 9.00 | 18.00 | 20.0 | 100 | 30 | 4.2 | 0.005 | 0.020 |

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 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: FRU090-30F~FRU250-30F Tin plated copper clad steel, 24 AWG.
FRU300-30F~FRU900-30F Tin plated copper, 20 AWG.
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

NOTE : Specification subject to change without notice.

2019/11/12



4. Production Dimensions (millimeter)

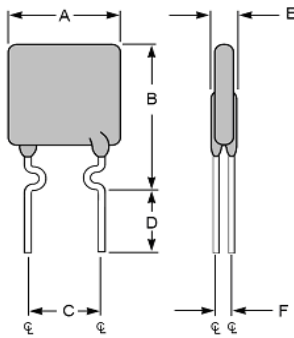


Fig.1
Lead Size: 24AWG
Φ 0.51 mm Diameter

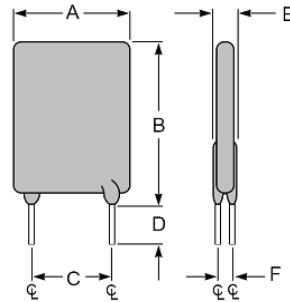
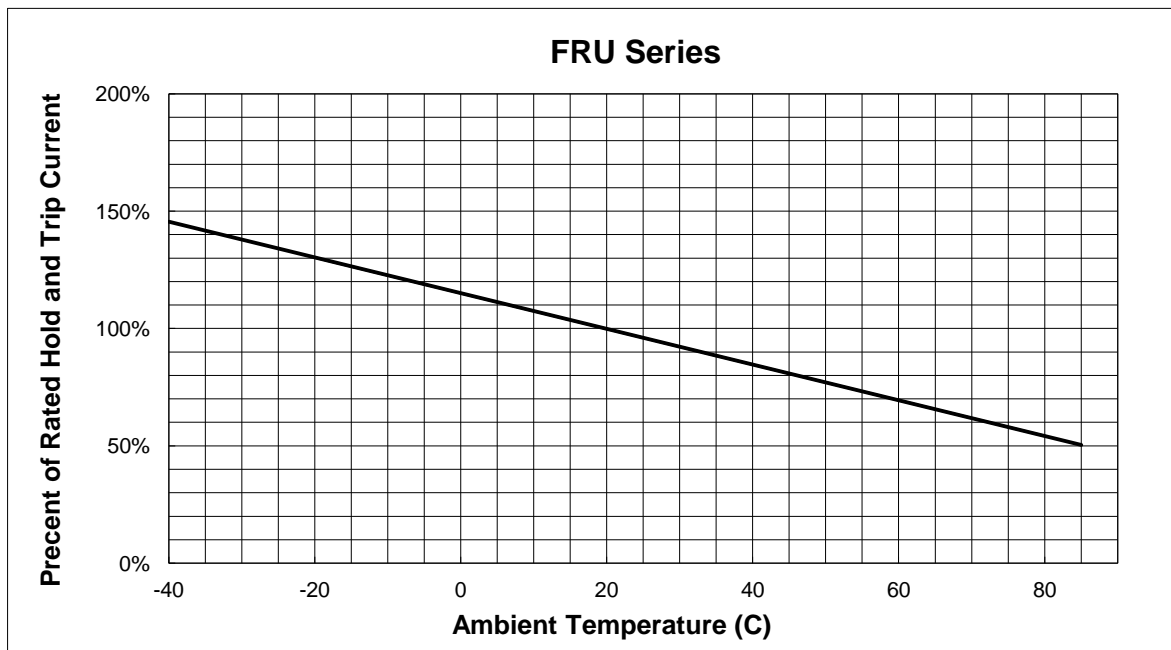


Fig.2
Lead Size: 20AWG
Φ 0.81 mm Diameter

| Part Number | Fig | A | B | C | D | E | F |
|-------------|-----|---------|---------|---------|---------|---------|---------|
| | | Maximum | Maximum | Typical | Minimum | Maximum | Typical |
| FRU090-30F | 1 | 7.4 | 12.2 | 5.1 | 7.6 | 3.0 | 0.9 |
| FRU110-30F | 1 | 7.4 | 14.2 | 5.1 | 7.6 | 3.0 | 0.9 |
| FRU135-30F | 1 | 8.9 | 13.5 | 5.1 | 7.6 | 3.0 | 0.9 |
| FRU160-30F | 1 | 8.9 | 15.2 | 5.1 | 7.6 | 3.0 | 0.9 |
| FRU185-30F | 1 | 10.2 | 15.7 | 5.1 | 7.6 | 3.0 | 0.9 |
| FRU250-30F | 1 | 11.4 | 18.3 | 5.1 | 7.6 | 3.0 | 0.9 |
| FRU300-30F | 2 | 11.4 | 17.3 | 5.1 | 7.6 | 3.0 | 1.2 |
| FRU400-30F | 2 | 14.0 | 20.1 | 5.1 | 7.6 | 3.0 | 1.2 |
| FRU500-30F | 2 | 14.0 | 24.9 | 10.2 | 7.6 | 3.0 | 1.2 |
| FRU600-30F | 2 | 16.5 | 24.9 | 10.2 | 7.6 | 3.0 | 1.2 |
| FRU700-30F | 2 | 19.1 | 26.7 | 10.2 | 7.6 | 3.0 | 1.2 |
| FRU800-30F | 2 | 21.6 | 29.2 | 10.2 | 7.6 | 3.0 | 1.2 |
| FRU900-30F | 2 | 24.1 | 29.7 | 10.2 | 7.6 | 3.0 | 1.2 |

5. Thermal Derating Curve

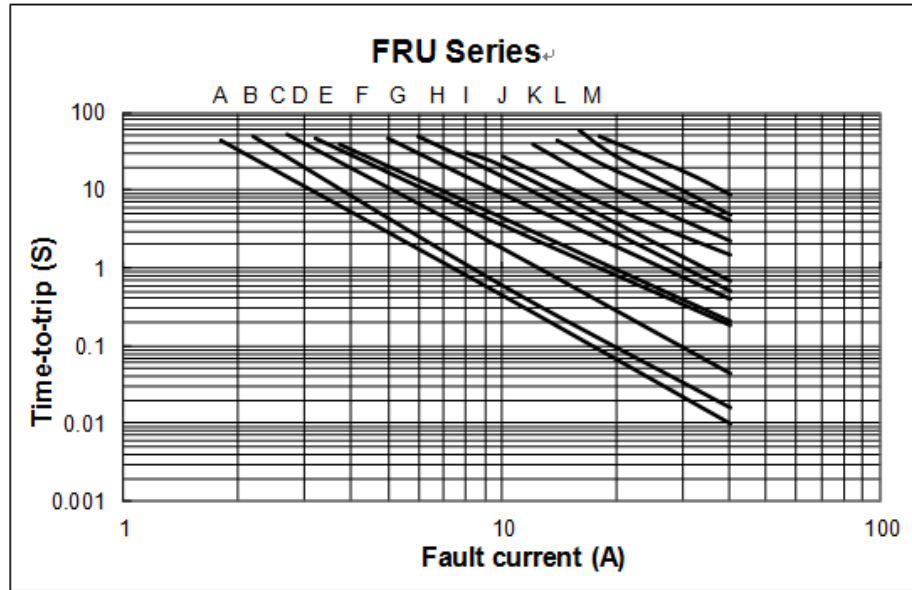


NOTE : Specification subject to change without notice.



6. Typical Time-To-Trip at 23°C

- A =FRU090-30F
- B =FRU110-30F
- C =FRU135-30F
- D =FRU160-30F
- E =FRU185-30F
- F =FRU250-30F
- G =FRU300-30F
- H =FRU400-30F
- I =FRU500-30F
- J =FRU600-30F
- K =FRU700-30F
- L =FRU800-30F
- M =FRU900-30F



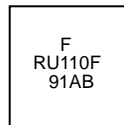
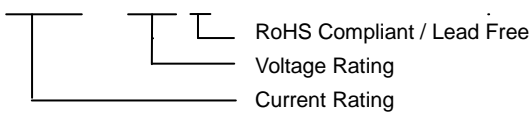
7. Material Specification

Lead material : FRU090-30F~FRU250-30F Tin plated copper clad steel, 24 AWG.
 FRU300-30F~FRU900-30F Tin plated copper, 20 AWG.
 Soldering characteristics: MIL-STD-202, Method 208E.
 Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

8. Part Numbering and Marking System

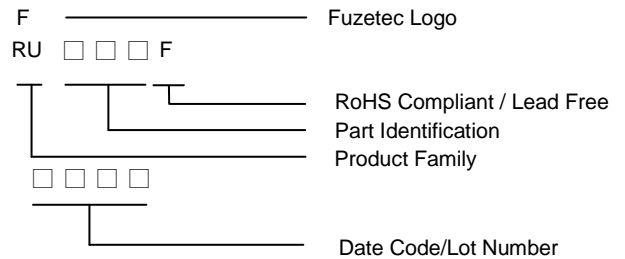
Part Numbering System

FRU □ □ □ - □ □ 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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