Radial Leaded PTC Resettable Fuse : FRG Series

1. Summary

(a) **Applications : Wide variety of electronic equipment**
(b) **Product Features : Very Low resistance, Very High hold current, Solid state, Radial leaded product ideal for up to 16V**
(c) **Operation Current : 3.0A~14.0A**
(d) **Maximum Voltage : 16V**
(e) **Temperature Range : -40℃ to 85℃**
(f) **RoHS Compliant (Lead Free) product**

2. Agency Recognition

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

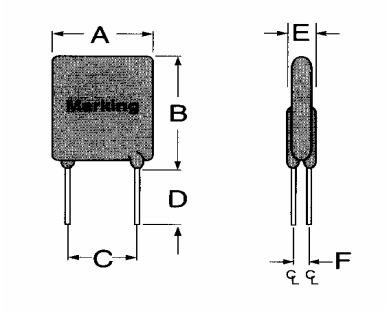
3. Electrical Characteristics (23℃)

Part Number	Hold Current	Trip Current	Max.Time to trip	Maximum Current	Rated Voltage	Typical Power	Resistance Tolerance	
							Rmin	R1max
	I_H, A	I_T, A	at 5x I_H	I_{MAX}, A	V_{MAX}, Vdc	Pd, W	ohms	ohms
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℃ still air.
I_T=Trip current-minimum current at whic h the device will always trip at 23℃ 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℃ still air environment.
R_{MIN}=Minimum device resistance at 23℃.
$R1_{MAX}$=Maximum device resistance at 23℃ 1 hour after tripping .
Physical specifications:
Lead material: FRG300F~FRG1100F Tin plated copper,20 AWG.
FRG1200F~FRHG400F Tin plated copper,18 AWG.
Soldering characteristics:MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy ,meet UL-94V-O requirement.

NOTE : Specification subject to change without notice.

4. Production Dimensions (millimeter)

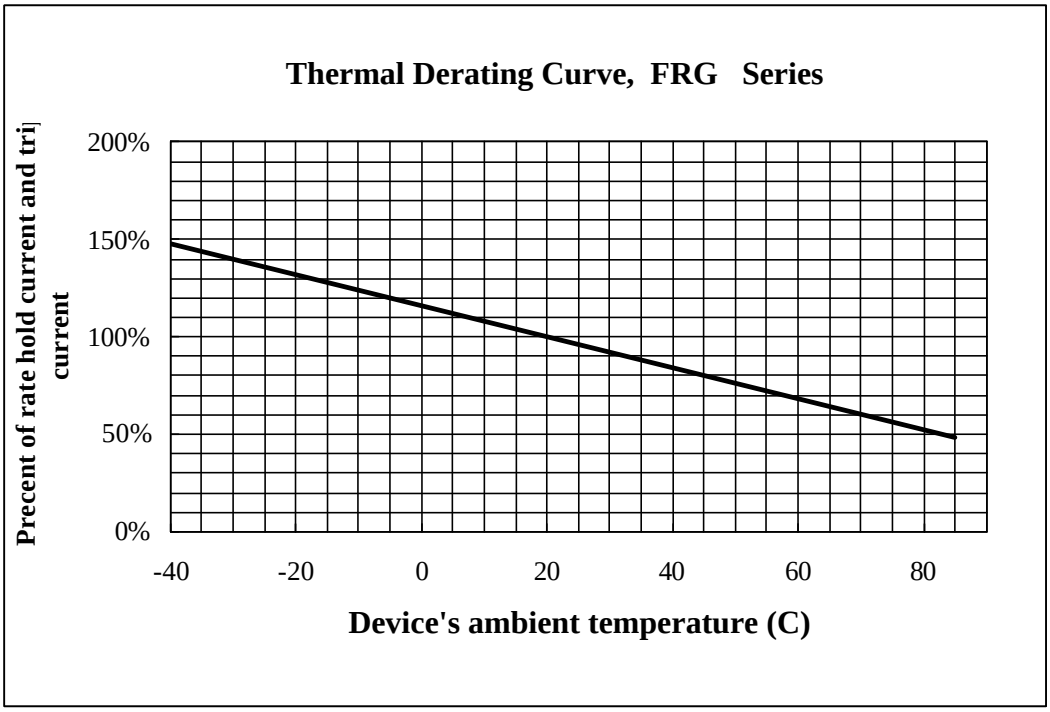


Lead Size
FRG300-16~FRG1100~16
Φ 0.81 mm Diameter
20AWG

Lead Size
FRG1200-16~FRG1400-16
Φ 1.0 Mm Diameter
18AWG

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

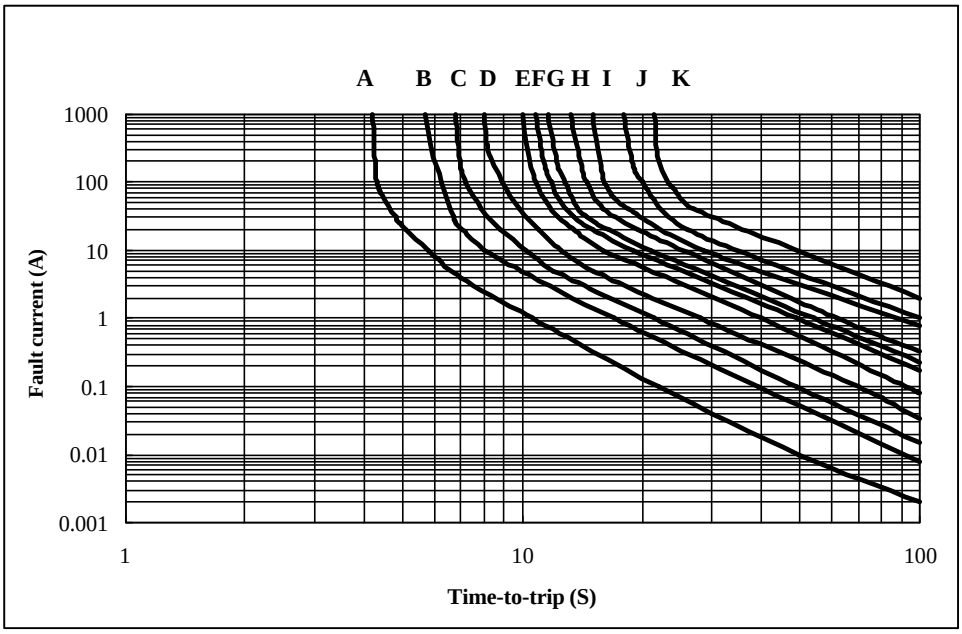
5. Thermal Derating Curve



NOTE : Specification subject to change without notice.

6. Typical Time-To-Trip at 23℃

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



7. Material Specification

Lead material：FRG300F~FRG1100F Tin plated copper, 20 AWG.
FRG1200F~FRG1400F 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

FRA □ □ □ — □ □ □ F

RoHS Compliant / Lead Free
Maximum interrupt
Voltage rating
Current rating

F
RG300F
23BD

Example

Part Marking System

F — Fuzetec Logo
RG □ □ □ F
RoHS Compliant / Lead Free
Part Identification
Product Family
□ □ □ □
Date Code/Lot Number

Warning: -Operation beyond the specified maximum ratings 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. Prolonged contact will damage the device performance.

Atom Electronics Ltd.

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