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 16V**
(d) **Operation Current : 2.5A~14.0A**
(e) **Maximum Voltage : 16V**
(f) **Temperature Range : -40℃ to 85℃**

2. Agency Recognition

UL : File No. E211981
C-UL: File No. E211981
TÜV: File No. R 50004084

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
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
FRG500-16KF	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 which 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: FRG250-16F Tin plated copper, 24 AWG.
FRG300-16F~FRG1100-16F Tin plated copper,20 AWG.
FRG1200-16F~FRHG400-16F 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)

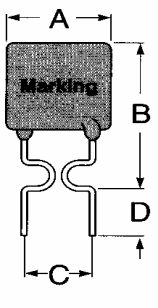


Figure 1
Lead Size: 24AWG
Φ 0.51 mm Diameter

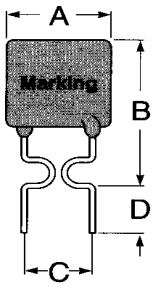


Figure 2
Lead Size: 20AWG
Φ 0.81 mm Diameter

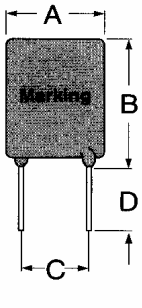


Figure 3
Lead Size: 20AWG
Φ 0.81 mm Diameter

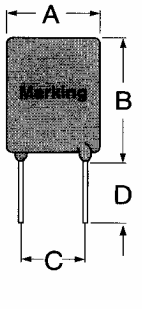
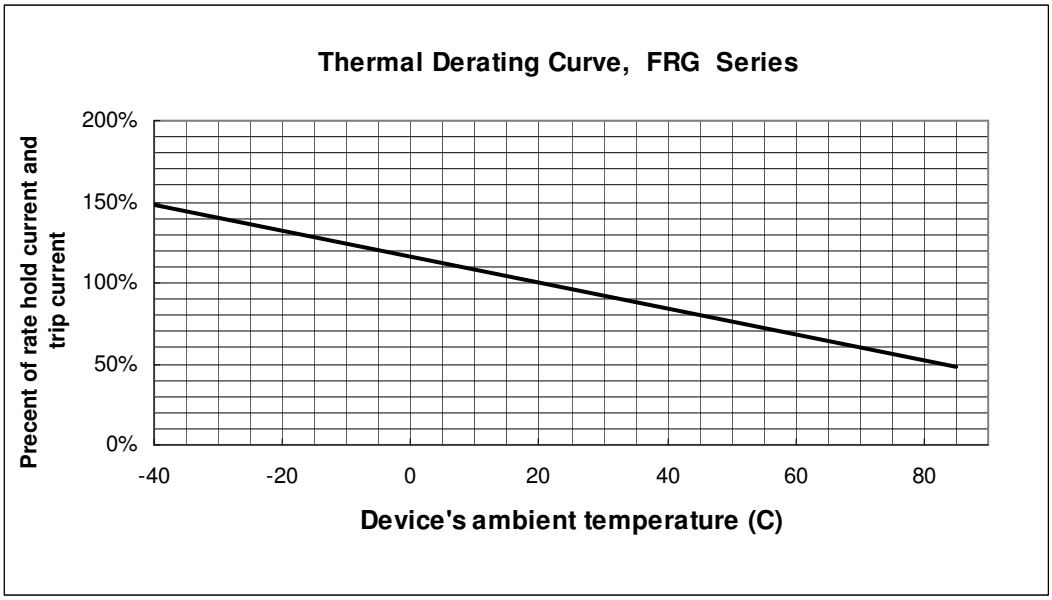


Figure 4
Lead Size: 18AWG
Φ 1.0 mm Diameter

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	3	7.1	11.0	5.1	7.6	3.0	1.2
FRG400-16F	3	8.9	12.8	5.1	7.6	3.0	1.2
FRG500-16F	3	10.4	14.3	5.1	7.6	3.0	1.2
FRG500-16KF	2	10.4	18.7	5.1	7.6	3.0	1.2
FRG600-16F	3	10.7	17.1	5.1	7.6	3.0	1.2
FRG700-16F	3	11.2	19.7	5.1	7.6	3.0	1.2
FRG800-16F	3	12.7	20.9	5.1	7.6	3.0	1.2
FRG900-16F	3	14.0	21.7	5.1	7.6	3.0	1.2
FRG1000-16F	3	16.5	24.1	5.1	7.6	3.0	1.2
FRG1100-16F	3	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

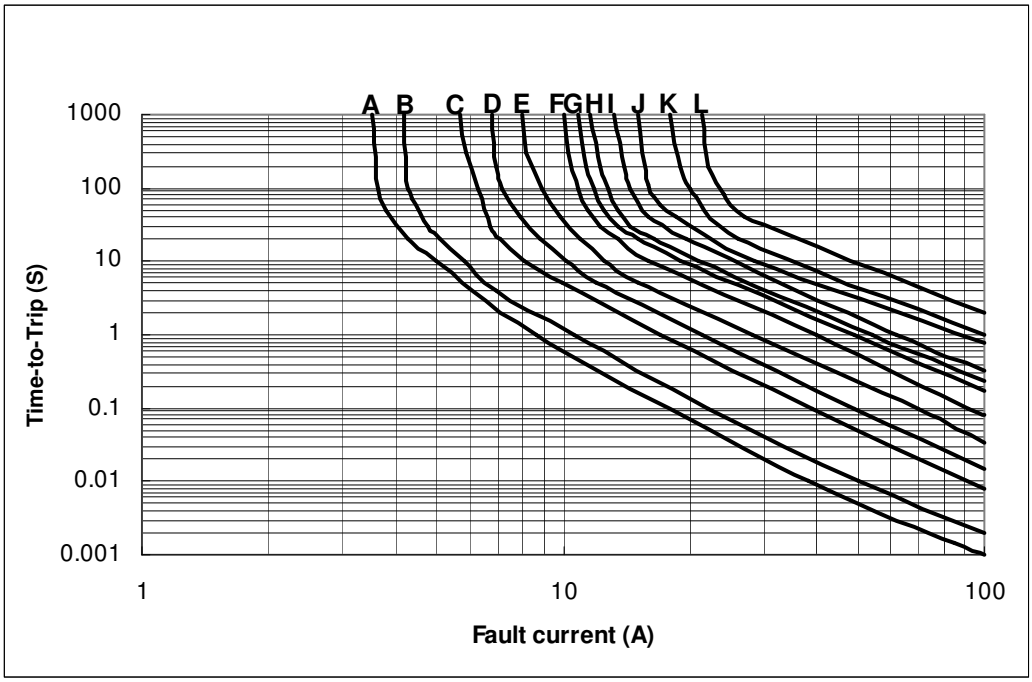
5. Thermal Derating Curve



NOTE : Specification subject to change without notice.

6. Typical Time-To-Trip at 23℃

A=FRG250-16F
B=FRG300-16F
C=FRG400-16F
D=FRG500-16F and FRG500-16KF
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, 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

F R G □ □ □ — □ □ □ K F

RoHS Compliant / Lead Free
Kinked lead
Voltage rating
Current rating

F
RG300F
73BD

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

NOTE : Specification subject to change without notice.