Radial Leaded PTC Resettable Fuse: FRV Series
Preliminary

RoHS

1. Summary

(a) **RoHS Compliant (Lead Free) Product**
(b) **Applications: Line Voltage Power Supply, Transformer and Appliances**
(c) **Product Features: Low hold current, Solid state, Radial leaded product ideal for up to 265$V_{AC/DC}$**
(d) **Operation Current: 50mA~550mA**
(e) **Maximum Operating Voltage: 240$V_{AC/DC}$**
(f) **Maximum Interrupt Voltage: 265$V_{AC/DC}$**
(g) **Temperature Range : -40℃ to 85℃**

2. Agency Recognition

UL: File No. Pending
C-UL: File No. Pending
TÜV: File No. Pending

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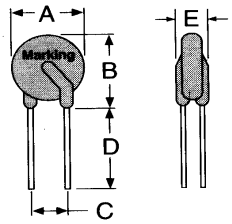
3. Electrical Characteristics (23℃)

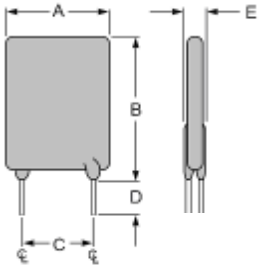
Part Number	Hold Current	Trip Current	Max.Time to Trip	Maximum Current	Rated Voltage	Typical Power	Resistance Tolerance	
							R_{MIN}	$R1_{MAX}$
	I_H, A	I_T, A	at 5xI_H	I_{MAX}, A	V_{MAX}, V_{AC}	Pd, W	ohms	ohms
FRV005-240F	0.05	0.12	15.0	1.0	240	0.70	18.50	65.00
FRV008-240F	0.08	0.19	15.0	1.2	240	0.80	7.40	26.00
FRV012-240F	0.12	0.30	15.0	1.2	240	1.00	3.00	12.00
FRV016-240F	0.16	0.37	15.0	2.0	240	1.40	2.50	7.80
FRV025-240F	0.25	0.56	18.5	3.5	240	1.50	1.30	3.80
FRV033-240F	0.33	0.74	18.5	4.5	240	1.70	0.83	2.60
FRV040-240F	0.40	0.90	24.0	5.5	240	2.00	0.60	1.90
FRV055-240F	0.55	1.25	26.0	7.0	240	3.40	0.45	1.45

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 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: FRV005-240F~FRV016-240F Tin plated copper, 24AWG.
FRV025-240F~FRV040-240F Tin plated copper, 22AWG.
FRV055-240F Tin plated copper, 20AWG.
Soldering characteristics: MIL-STD-202, Method 208E.
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

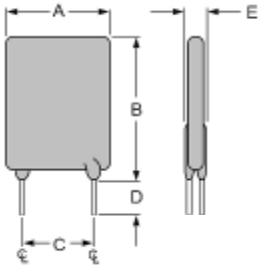
4. Production Dimensions (millimeter)



FRV 005-240F~FRV016-240F
Lead Size: 24AWG
Φ 0.51 mm Diameter



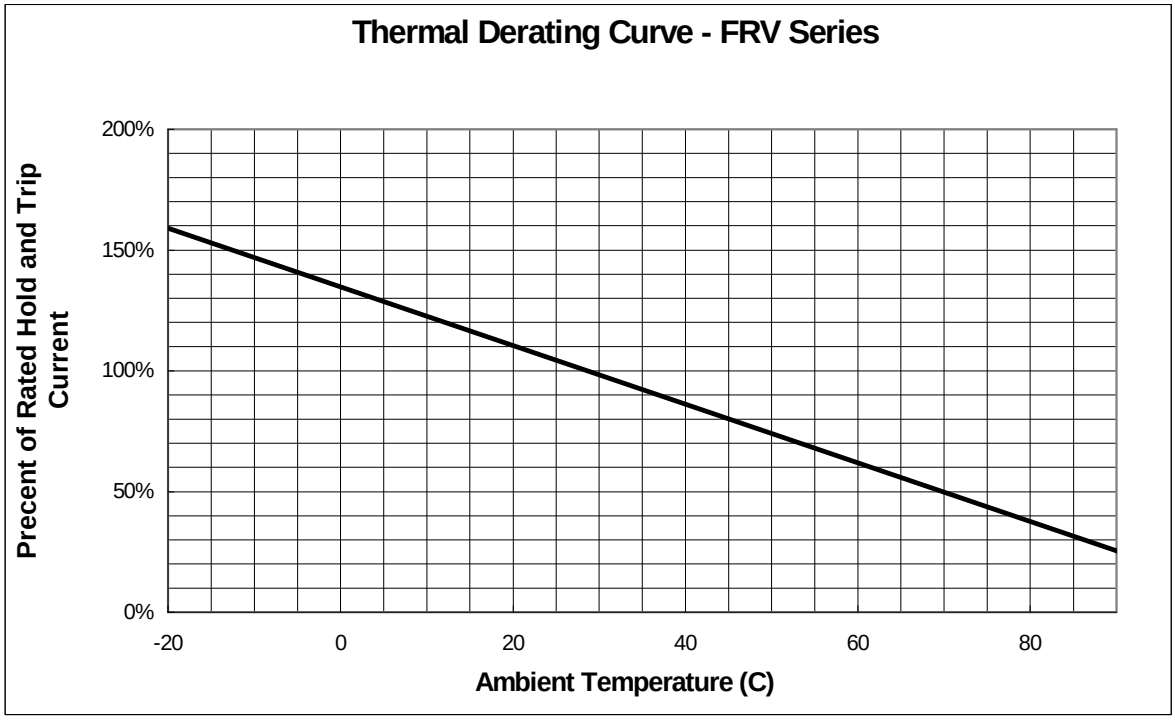
FRV025-240F~FRV040-240F
Lead Size: 22AWG
Φ 0.65 mm Diameter



FRV055-240F
Lead Size: 20AWG
Φ 0.81 mm Diameter

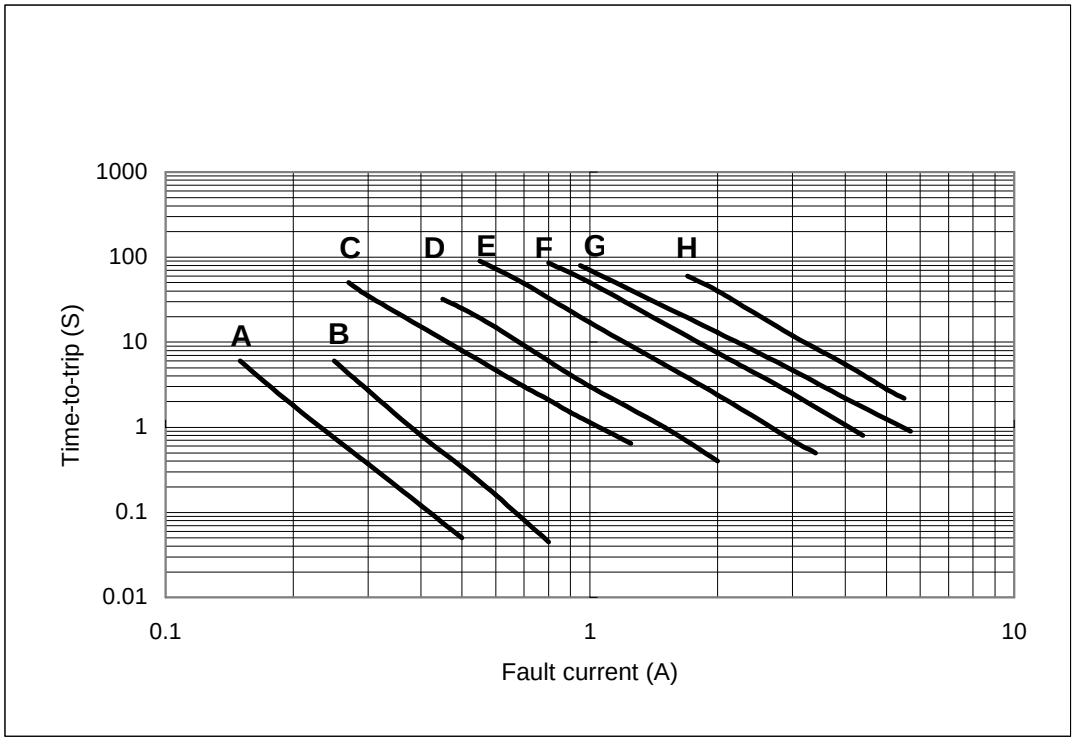
Part Number	A Maximum	B Maximum	C Typical	D Minimum	E Maximum
FRV005-240F	8.3	10.7	5.1	7.6	3.8
FRV008-240F	8.3	10.7	5.1	7.6	3.8
FRV012-240F	8.3	10.7	5.1	7.6	3.8
FRV016-240F	9.9	12.5	5.1	7.6	3.8
FRV025-240F	9.6	17.4	5.1	7.6	3.8
FRV033-240F	11.4	16.5	5.1	7.6	3.8
FRV040-240F	11.5	19.5	5.1	7.6	3.8
FRV055-240F	14.0	21.7	5.1	7.6	4.1

5. Thermal Derating Curve



6. Typical Time-To-Trip at 23℃

A= FRV005-240F
B= FRV008-240F
C= FRV012-240F
D= FRV016-240F
E= FRV025-240F
F= FRV033-240F
G= FRV040-240F
H= FRV055-240F



7. Material Specification

Lead material：FRV005-240F~FRV016-240F Tin plated copper, 24AWG.
FRV025-240F~FRV040-240F Tin plated copper, 22AWG.
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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

FRV □ □ □ - □ □ □ F

RoHS Compliant / Lead Free
Voltage rating
Current rating

F
RV12F
41AB

Example

Part Marking System

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

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.