

 FUZETEC TECHNOLOGY CO., LTD.	NO.	PQ57-01E		
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Radial Leaded PTC Resettable Fuse: FRV 277V Series

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 330V_{AC/DC}**
- (d) **Operation Current: 0.05A~2.00A**
- (e) **Maximum Operating Voltage: 277V_{AC}**
- (f) **Maximum Interrupt Voltage: 305V_{AC}**
- (g) **Temperature Range : -20°C to 85°C**

2. Agency Recognition

UL: *File No. E211981
 C-UL: *File No. E211981
 TÜV: File No. R50087018

*FRV005-277F~FRV033-277F and FRV100-277F UL,C-UL In Process.

3. Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max.Time to Trip	Max. Current	Rated Voltage	Max. Int. Voltage	Typ. Power	Resistance	
								RMIN	R1MAX
	I _H , A	I _T , A	at 5xI _H ,s	I _{MAX} , A	V _{MAX} , VAC	V _{I-MAX} , VAC	P _d , W	Ohms	Ohms
FRV005-277F	0.05	0.20	18.00	1.0	277	305	0.70	8.00	26.00
FRV008-277F	0.08	0.26	18.00	1.2	277	305	0.80	4.50	18.00
FRV012-277F	0.12	0.30	18.00	1.2	277	305	1.00	3.00	12.00
FRV016-277F	0.16	0.37	18.00	1.6	277	305	1.40	2.30	8.00
FRV025-277F	0.25	0.56	18.50	2.5	277	305	1.50	1.30	4.30
FRV033-277F	0.33	0.74	21.00	3.3	277	305	1.70	0.94	3.10
FRV040-277F	0.40	0.90	24.00	4.0	277	305	2.00	0.81	2.70
FRV055-277F	0.55	1.25	26.00	5.5	277	305	2.40	0.63	2.10
FRV075-277F	0.75	1.50	18.00	7.5	277	305	2.60	0.43	1.40
FRV100-277F	1.00	2.00	21.00	10.0	277	305	2.90	0.32	1.10
FRV125-277F	1.25	2.50	23.00	12.5	277	305	3.30	0.24	0.80
FRV150-277F	1.50	3.00	23.00	15.0	277	305	3.70	0.14	0.48
FRV200-277F	2.00	4.00	28.00	20.0	277	305	4.50	0.09	0.29

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 : FRV005-277F~FRV016-277F Tin plated copper, 24AWG.
 FRV025-277F~FRV040-277F Tin plated copper, 22AWG.
 FRV055-277F~FRV200-277F Tin plated copper, 20AWG.

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

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

NOTE : Specification subject to change without notice.

2023/10/04 A



4. Production Dimensions (millimeter)

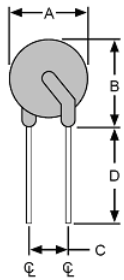


Fig.1
Lead Size: 24AWG
Φ 0.51 mm Diameter

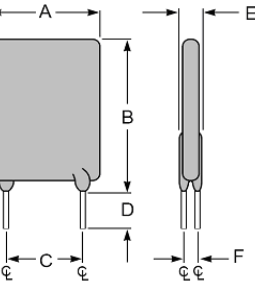
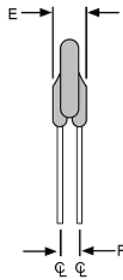


Fig.2
Lead Size: 24AWG
Φ 0.51 mm Diameter

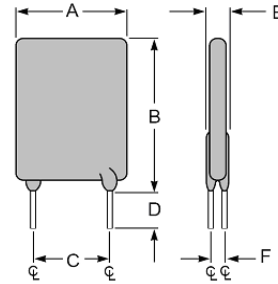


Fig.3
Lead Size: 22AWG
Φ 0.65 mm Diameter

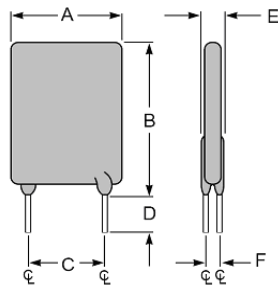


Fig.4
Lead Size: 20AWG
Φ 0.81 mm Diameter

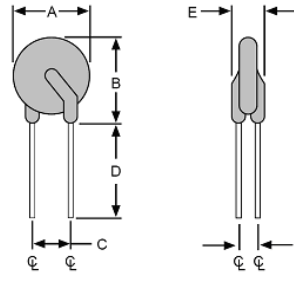
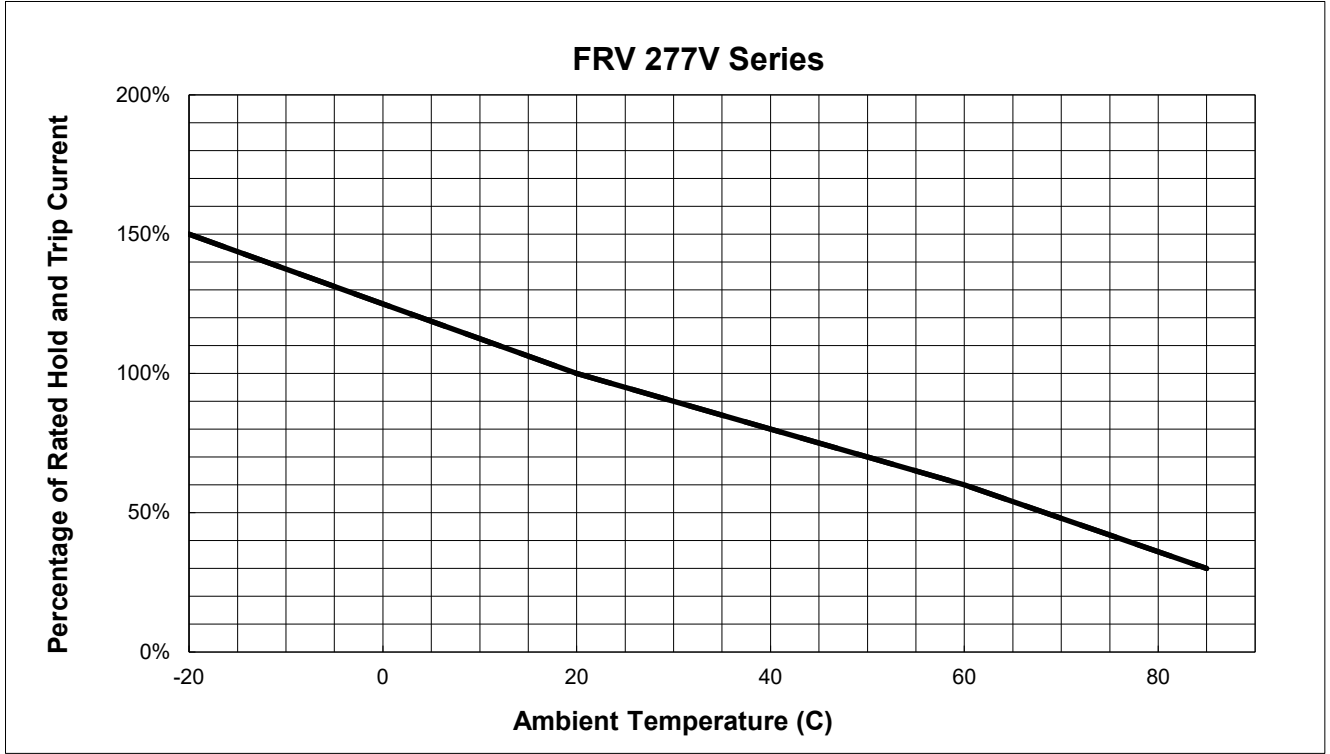


Fig.5
Lead Size: 20AWG
Φ 0.81 mm Diameter

Part Number	Figure	A	B	C	D	E	F
		Maximum	Maximum	Typical	Minimum	Maximum	Typical
FRV005-277F	1	7.40	12.70	5.10	7.60	3.80	1.60
FRV008-277F	2	7.40	12.20	5.10	7.60	3.80	1.60
FRV012-277F	2	8.10	12.80	5.10	7.60	3.80	1.60
FRV016-277F	2	7.40	14.20	5.10	7.60	3.80	1.60
FRV025-277F	3	8.90	15.20	5.10	7.60	3.80	1.80
FRV033-277F	3	12.60	15.50	5.10	7.60	3.80	1.80
FRV040-277F	3	12.60	15.50	5.10	7.60	3.80	1.80
FRV055-277F	4	12.60	16.50	5.10	7.60	4.10	1.90
FRV075-277F	4	15.80	20.00	5.10	7.60	4.80	1.90
FRV100-277F	4	16.30	21.70	10.20	7.60	5.10	1.90
FRV125-277F	5	18.80	24.50	10.20	7.60	5.30	1.90
FRV150-277F	5	23.80	28.30	10.20	7.60	5.30	1.90
FRV200-277F	4	25.20	30.60	10.20	7.60	6.10	1.90

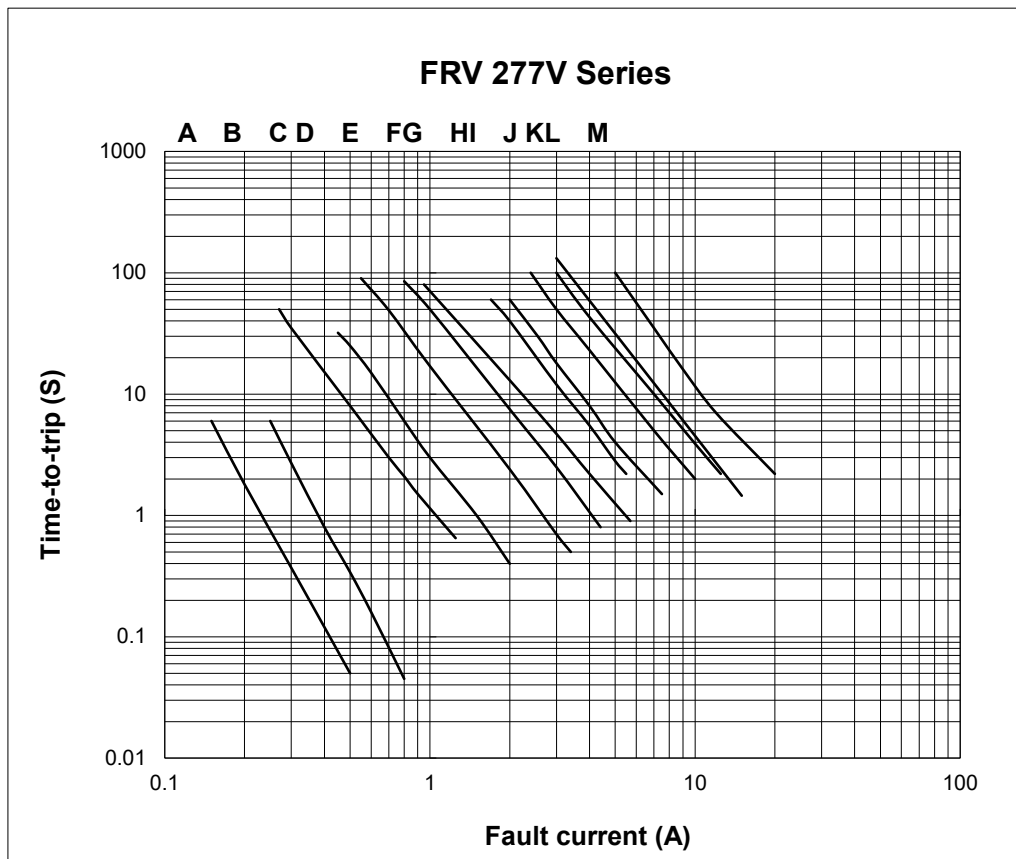


5. Thermal Derating Curve



6. Typical Time-To-Trip at 23°C

- A= FRV005-277F
- B= FRV008-277F
- C= FRV012-277F
- D= FRV016-277F
- E= FRV025-277F
- F= FRV033-277F
- G= FRV040-277F
- H= FRV055-277F
- I= FRV075-277F
- J= FRV100-277F
- K= FRV125-277F
- L=FRV150-277F
- M= FRV200-277F



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7. Material Specification

Lead material : FRV005-277F~FRV016-277F Tin plated copper, 24AWG.

FRV025-277F~FRV040-277F Tin plated copper, 22AWG.

FRV055-277F~FRV200-277F Tin plated copper, 20AWG.

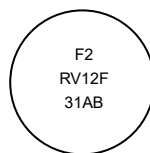
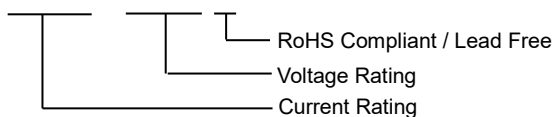
Soldering characteristics: MIL-STD-202, Method 208E.

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

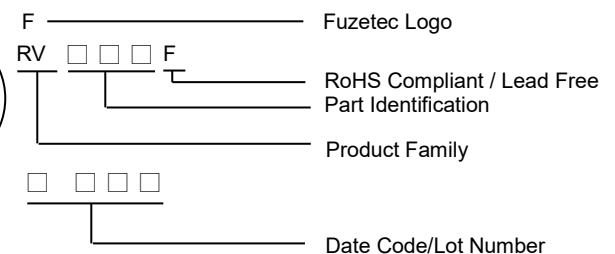
8. Part Numbering and Marking System

Part Numbering System

FRV □ □ □ - □ □ □ F



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.