

 FUZETEC TECHNOLOGY CO., LTD.	NO.	PQ63-01E		
Product Specification and Approval Sheet	Version	P1	Page	1/4

Radial Leaded PTC Resettable Fuse: FRV305V Series Preliminary

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}**
- (d) **Operation Current: 0.05A~1.00A**
- (e) **Maximum Operating Voltage: 305V_{AC}**
- (f) **Maximum Interrupt Voltage: 380V_{AC}**
- (g) **Temperature Range : -20°C to 85°C**

2. Agency Recognition

UL: File No. E211981:

FRV005-305F, FRV025-305F, FRV033-305F, FRV040-305F, FRV055-305F, FRV100-305F

C-UL: File No. E211981:

FRV005-305F, FRV025-305F, FRV033-305F, FRV040-305F, FRV055-305F, FRV100-305F

TÜV: 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	
	I _H , A	I _T , A	at 5xI _H , s	I _{MAX} , A	V _{MAX} , V _{AC}	V _{I-MAX} , V _{AC}	P _d , W	R _{MIN}	R _{1MAX}
	I _H , A	I _T , A	at 5xI _H , s	I _{MAX} , A	V _{MAX} , V _{AC}	V _{I-MAX} , V _{AC}	P _d , W	Ohms	Ohms
FRV005-305F	0.05	0.20	35.00	1.0	305	380	1.40	8.00	26.00
FRV008-305F	0.08	0.26	18.00	1.2	305	380	1.40	4.50	18.00
FRV012-305F	0.12	0.30	18.00	1.2	305	380	1.50	3.00	12.00
FRV016-305F	0.16	0.37	18.00	1.6	305	380	1.50	2.00	8.00
FRV025-305F	0.25	0.56	18.50	2.5	305	380	2.00	1.30	5.00
FRV033-305F	0.33	0.74	20.00	3.3	305	380	2.00	0.90	3.40
FRV040-305F	0.40	0.90	20.00	4.0	305	380	2.50	0.70	2.30
FRV055-305F	0.55	1.25	20.00	5.5	305	380	3.50	0.60	1.90
FRV075-305F	0.75	1.50	28.00	7.5	305	380	4.50	0.40	1.40
FRV100-305F	1.00	2.00	30.00	10.0	305	380	5.50	0.30	1.10

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: FRV005-305F~FRV016-305F Tin plated copper, 24AWG.

FRV025-305F~FRV040-305F Tin plated copper, 22AWG.

FRV040-305F~FRV100-305F 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.

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4. Production Dimensions (millimeter)

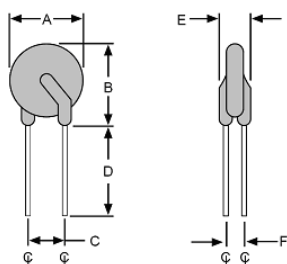


Fig.1
Lead Size: 24AWG
Φ 0.51 mm Diameter

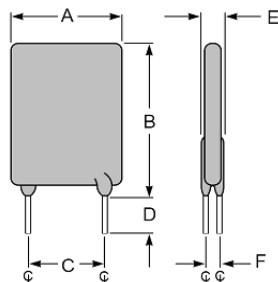


Fig.2
Lead Size: 24AWG
Φ 0.51 mm Diameter

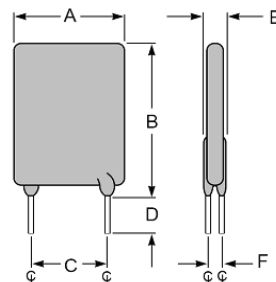


Fig.3
Lead Size: 22AWG
Φ 0.65 mm Diameter

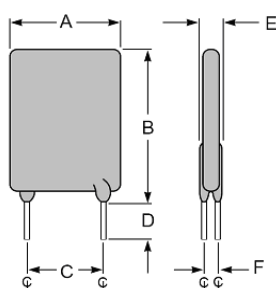


Fig.4
Lead Size: 20AWG
Φ 0.81 mm Diameter

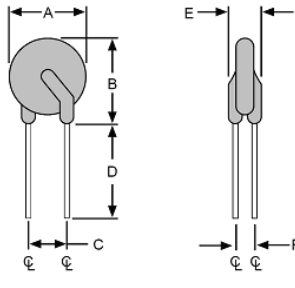
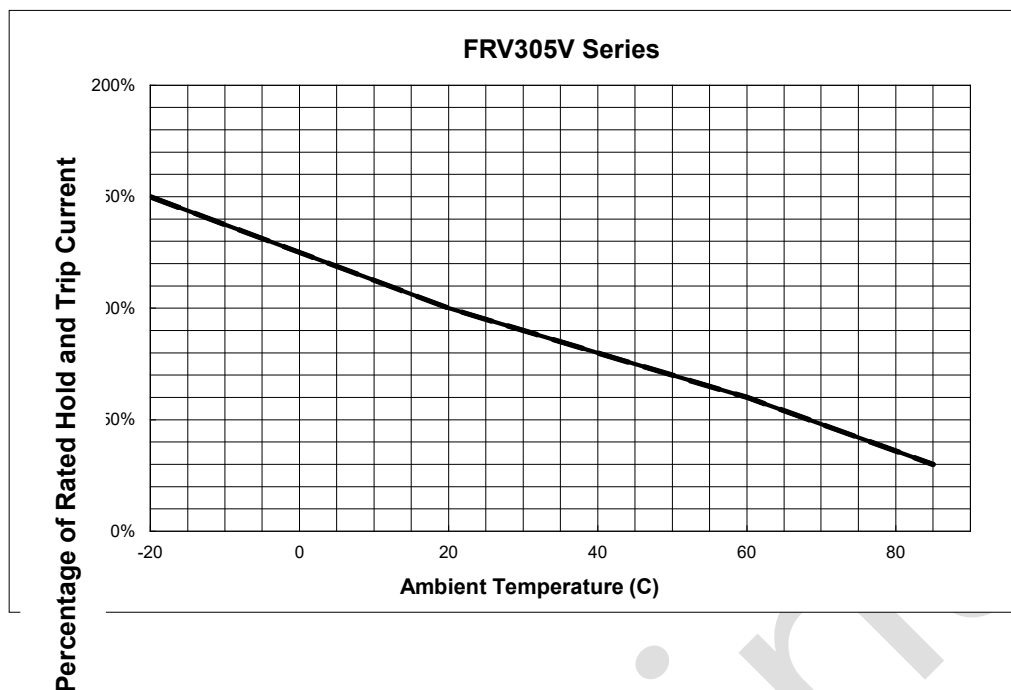


Fig.5
Lead Size: 20AWG
Φ 0.81 mm Diameter

Part Number	Figure	A	B	C	D	E	F
		Maximum	Maximum	Typical	Minimum	Maximum	Typical
FRV005-305F	1	8.50	12.50	5.10	7.60	4.60	2.70
FRV008-305F	2	8.50	12.50	5.10	7.60	4.60	2.70
FRV012-305F	2	8.50	15.50	5.10	7.60	4.60	2.70
FRV016-305F	1	11.50	15.50	5.10	7.60	4.60	2.70
FRV025-305F	3	11.50	18.50	5.10	7.60	4.80	2.90
FRV033-305F	3	12.60	19.50	5.10	7.60	4.80	2.90
FRV040-305F	3	15.80	20.00	5.10	7.60	4.80	2.90
FRV055-305F	4	16.30	21.70	10.20	7.60	6.00	3.00
FRV075-305F	5	23.80	28.30	10.20	7.60	6.00	3.00
FRV100-305F	4	25.20	30.60	10.20	7.60	6.00	3.00

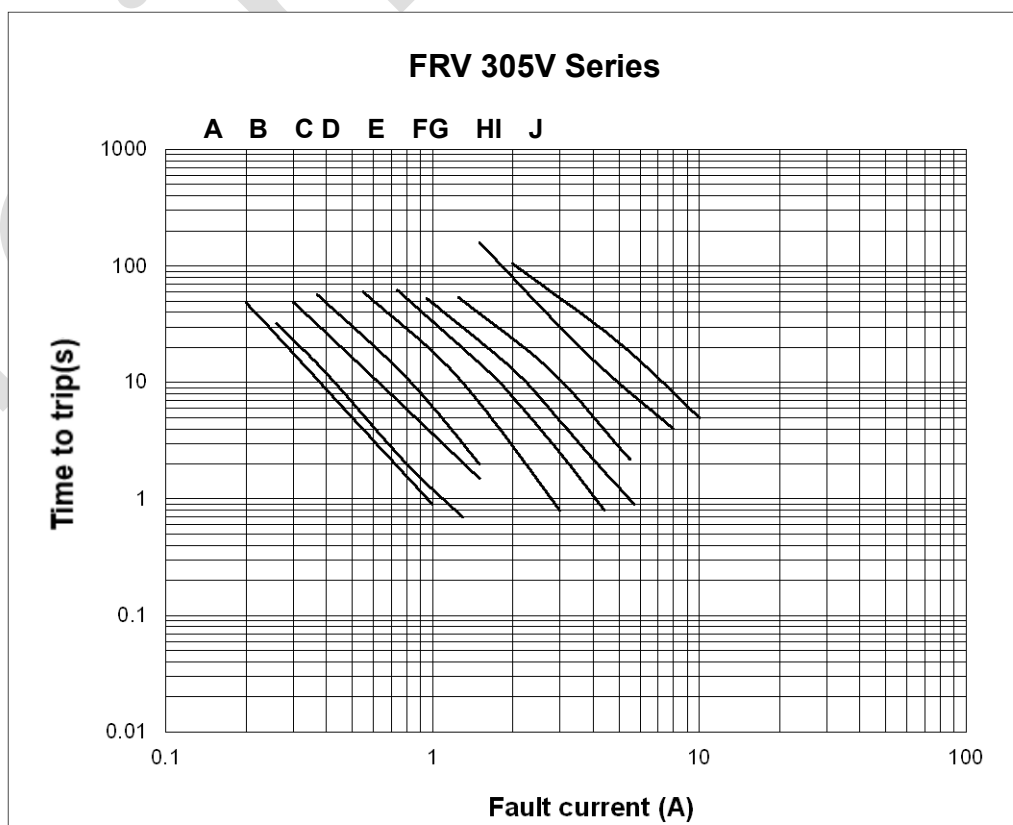


5. Thermal Derating Curve



6. Typical Time-To-Trip at 23°C

A= FRV005-305F
B= FRV008-305F
C= FRV012-305F
D= FRV016-305F
E= FRV025-305F
F= FRV033-305F
G= FRV040-305F
H= FRV055-305F
I= FRV075-305F
J= FRV100-305F



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7. Material Specification

Lead material : FRV005-305F~FRV016-305F Tin plated copper, 24AWG.

FRV025-305F~FRV040-305F Tin plated copper, 22AWG.

FRV055-305F~FRV100-305F Tin plated copper, 20AWG.

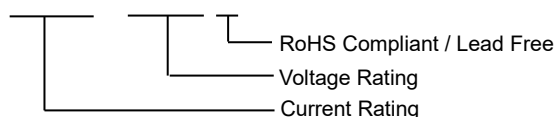
Soldering characteristics: MIL-STD-202, Method 208E.

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

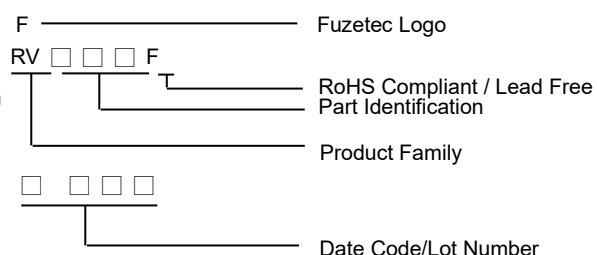
8. Part Numbering and Marking System

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.