
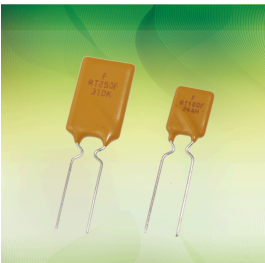
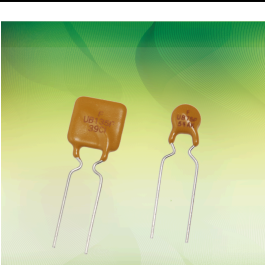


Fuzetec Through Hole PPTC Resettable Fuses

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Radial Leaded PTC Resettable Fuse : FRX Series

1. Summary

- (a) **RoHS Compliant (Lead Free) Product**
- (b) **Applications : Wide variety of electronic equipment**
- (c) **Product Features : Low hold current, Solid state, Radial leaded product ideal for up to 60VDC**
- (d) **Operation Current : 0.05A~3.75A**
- (e) **Maximum Voltage : 60VDC**
- (f) **Temperature Range : -40°C to 85°C**

2. Agency Recognition

UL : File No. E211981

C-UL: File No. E211981

TÜV: File No. R50004084

3. Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max. Time to Trip	Maximum Current	Rated Voltage	Typical Power	Resistance	
	I_H, A	I_T, A	at $5 \times I_H, s$	I_{MAX}, A	V_{MAX}, V_{DC}	P_d, W	R_{MIN}	R_{1MAX}
	Ohms	Ohms						
FRX005-60F	0.05	0.10	5.0	40	60	0.26	7.30	20.00
FRX010-60F	0.10	0.20	4.0	40	60	0.38	2.50	7.50
FRX017-60F	0.17	0.34	3.0	40	60	0.48	2.00	8.00
FRX020-60F	0.20	0.40	2.2	40	60	0.41	1.83	4.40
FRX025-60F	0.25	0.50	2.5	40	60	0.45	1.25	3.00
FRX030-60F	0.30	0.60	3.0	40	60	0.49	0.88	2.10
FRX040-60F	0.40	0.80	3.8	40	60	0.56	0.55	1.29
FRX050-60F	0.50	1.00	4.0	40	60	0.77	0.50	1.17
FRX065-60F	0.65	1.30	5.3	40	60	0.88	0.31	0.72
FRX075-60F	0.75	1.50	6.3	40	60	0.92	0.25	0.60
FRX090-60F	0.90	1.80	7.2	40	60	0.99	0.20	0.47
FRX110-60F	1.10	2.20	8.2	40	60	1.50	0.15	0.38
FRX135-60F	1.35	2.70	9.6	40	60	1.70	0.12	0.30
FRX160-60F	1.60	3.20	11.4	40	60	1.90	0.09	0.22
FRX185-60F	1.85	3.70	12.6	40	60	2.10	0.08	0.19
FRX250-60F	2.50	5.00	15.6	40	60	2.50	0.05	0.13
FRX300-60F	3.00	6.00	19.8	40	60	2.80	0.04	0.10
FRX375-60F	3.75	7.50	24.0	40	60	3.20	0.03	0.08

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: FRX005-60F~FRX040-60F Tin plated copper clad steel, 24 AWG.

FRX050-60F~FRX090-60F Tin plated copper, 24 AWG.

FRX110-60F~FRX375-60F Tin plated copper, 20 AWG.

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

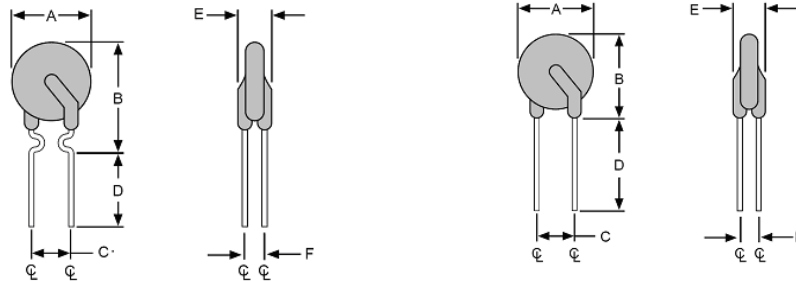
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

NOTE : Specification subject to change without notice.

2019/11/12



4. Production Dimensions (millimeter)



FRX 005-60F ~ FRX 090-60F

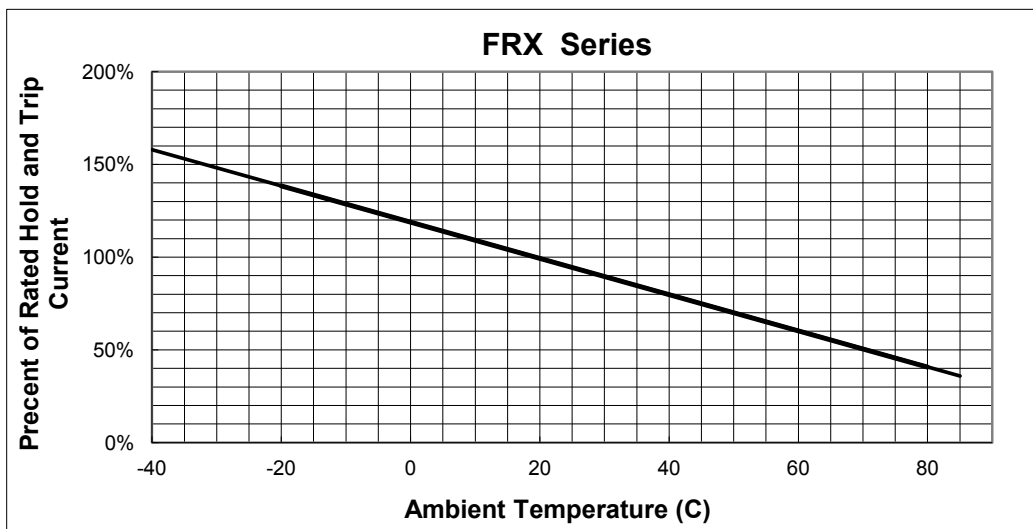
Lead Size : 24AWG
 Φ 0.51 mm Diameter

FRX 110-60F ~ FRX 375-60F

Lead Size : 20AWG
 Φ 0.81 mm Diameter

Part Number	A	B	C	D	E	F
	Maximum	Maximum	Typical	Minimum	Maximum	Typical
FRX005-60F	7.4	12.7	5.1	7.6	3.1	1.1
FRX010-60F	7.4	12.7	5.1	7.6	3.1	1.1
FRX017-60F	7.4	12.7	5.1	7.6	3.1	1.1
FRX020-60F	7.4	12.7	5.1	7.6	3.1	1.1
FRX025-60F	7.4	12.7	5.1	7.6	3.1	1.1
FRX030-60F	7.4	12.7	5.1	7.6	3.1	1.1
FRX040-60F	7.6	13.5	5.1	7.6	3.1	1.1
FRX050-60F	7.9	13.7	5.1	7.6	3.1	1.1
FRX065-60F	9.7	14.5	5.1	7.6	3.1	1.1
FRX075-60F	10.4	15.2	5.1	7.6	3.1	1.1
FRX090-60F	11.7	15.8	5.1	7.6	3.1	1.1
FRX110-60F	13.0	18.0	5.1	7.6	3.1	1.4
FRX135-60F	14.5	19.6	5.1	7.6	3.1	1.4
FRX160-60F	16.3	21.3	5.1	7.6	3.1	1.4
FRX185-60F	17.8	22.9	5.1	7.6	3.1	1.4
FRX250-60F	21.3	26.4	10.2	7.6	3.1	1.4
FRX300-60F	24.9	30.0	10.2	7.6	3.1	1.4
FRX375-60F	28.5	33.5	10.2	7.6	3.1	1.4

5. Thermal Derating Curve

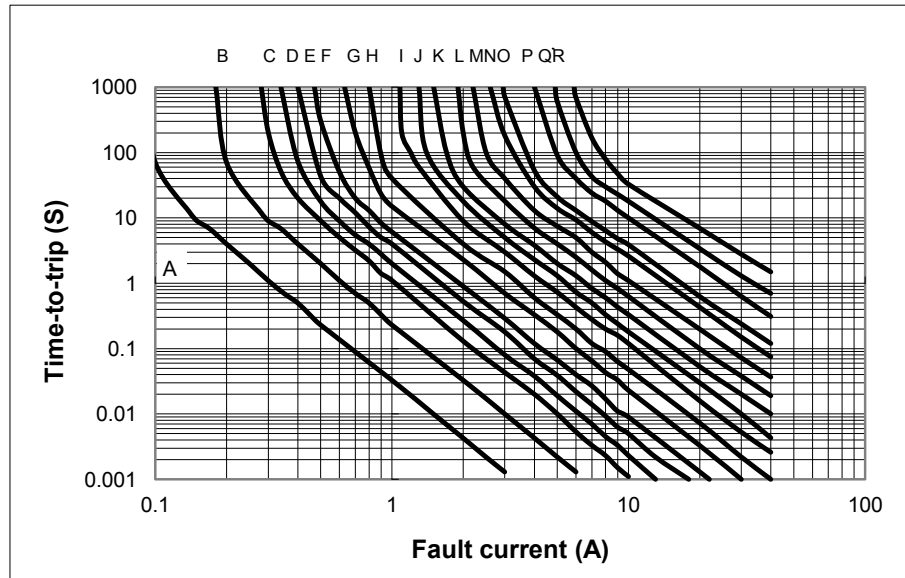


NOTE : Specification subject to change without notice.



6. Typical Time-To-Trip at 23°C

- A =FRX005-60F
- B =FRX010-60F
- C =FRX017-60F
- D =FRX020-60F
- E =FRX025-60F
- F =FRX030-60F
- G =FRX040-60F
- H =FRX050-60F
- I =FRX065-60F
- J =FRX075-60F
- K =FRX090-60F
- L =FRX110-60F
- M =FRX135-60F
- N =FRX160-60F
- O =FRX185-60F
- P =FRX250-60F
- Q =FRX300-60F
- R =FRX375-60F



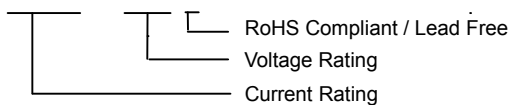
7. Material Specification

Lead material : FRX005-60F~FRX040-60F Tin plated copper clad steel, 24 AWG.
 FRX050-60F~FRX090-60F Tin plated copper, 24 AWG.
 FRX110-60F~FRX375-60F Tin plated copper, 20 AWG.
 Soldering characteristics:MIL-STD-202, Method 208E.
 Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement

8. Part Numbering and Marking System

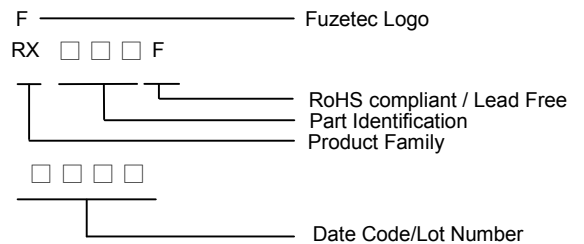
Part Numbering System

FRX □ □ □ - □ □ F



Example

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.

NOTE : Specification subject to change without notice.



Radial Leaded PTC Resettable Fuse : FRX90V Series

1. Summary

- (a) **RoHS Compliant (Lead Free) Product**
- (b) Applications : Telecom and wide variety of electronic equipment.
- (c) Product Features : Low hold current, Solid state, Radial leaded product ideal for up to 90VDC
- (d) Operation Current : 0.10A~3.75A
- (e) Maximum Voltage : Up to 90VDC
- (f) Temperature Range : -40°C to 85°C

2. Agency Recognition

UL : File No. E211981

C-UL: File No. E211981

TÜV: File No. R50004084

3. Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max.Time to Trip	Max. Current	Rated Voltage	Typ. Power	Resistance	
							RMIN	R1MAX
							Ohms	Ohms
FRX010-90F	0.10	0.20	4.0	40	72/90	0.38	2.50	7.50
FRX015-90F	0.15	0.35	10.0	40	72/90	0.70	2.40	7.00
FRX017-90F	0.17	0.34	3.0	40	72/90	0.48	2.00	8.00
FRX020-90F	0.20	0.40	2.2	40	72/90	0.41	1.83	4.40
FRX025-90F	0.25	0.50	2.5	40	72/90	0.45	1.25	3.00
FRX030-90F	0.30	0.60	3.0	40	72/90	0.49	0.88	2.10
FRX035-90F	0.35	0.75	10.0	40	72/90	1.30	0.70	2.50
FRX040-90F	0.40	0.80	3.8	40	72/90	0.56	0.55	1.29
FRX050-90F	0.50	1.00	4.0	40	72/90	0.77	0.50	1.17
FRX055-90F	0.55	1.20	10.0	40	72/90	1.50	0.40	1.50
FRX065-90F	0.65	1.30	5.3	40	72/90	0.88	0.31	0.72
FRX075-90F	0.75	1.50	6.3	40	72/90	0.92	0.25	0.60
FRX090-90F	0.90	1.80	7.2	40	72/90	0.99	0.20	0.47
FRX110-90F	1.10	2.20	8.2	40	72/90	1.50	0.15	0.38
FRX135-90F	1.35	2.70	9.6	40	72/90	1.70	0.12	0.30
FRX160-90F	1.60	3.20	11.4	40	72/90	1.90	0.09	0.22
FRX185-90F	1.85	3.70	12.6	40	72/90	2.10	0.08	0.19
FRX250-90F	2.50	5.00	15.6	40	72/90	2.50	0.05	0.13
FRX300-90F	3.00	6.00	19.8	40	72/90	2.80	0.04	0.10
FRX375-90F	3.75	7.50	24.0	40	72/90	3.20	0.03	0.08

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}).

Pd=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: FRX010-90F~FRX040-90F Tin plated copper clad steel, 24 AWG.

FRX050-90F~FRX090-90F Tin plated copper, 24 AWG.

FRX110-90F~FRX375-90F Tin plated copper, 20 AWG.

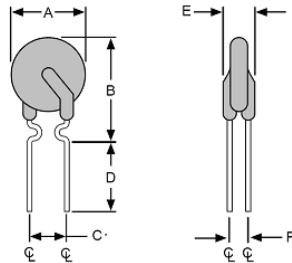
Soldering characteristics:MIL-STD-202, Method 208E.

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

NOTE : Specification subject to change without notice.



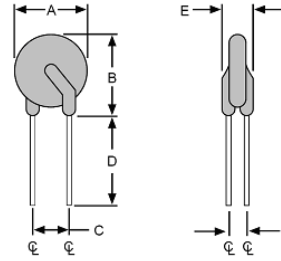
4. Production Dimensions (millimeter)



FRX 010-90F ~ FRX 090-90F

Lead Size : 24AWG

Φ 0.51 mm Diameter



FRX 110-90F ~ FRX 375-90F

Lead Size : 20AWG

Φ 0.81 mm Diameter

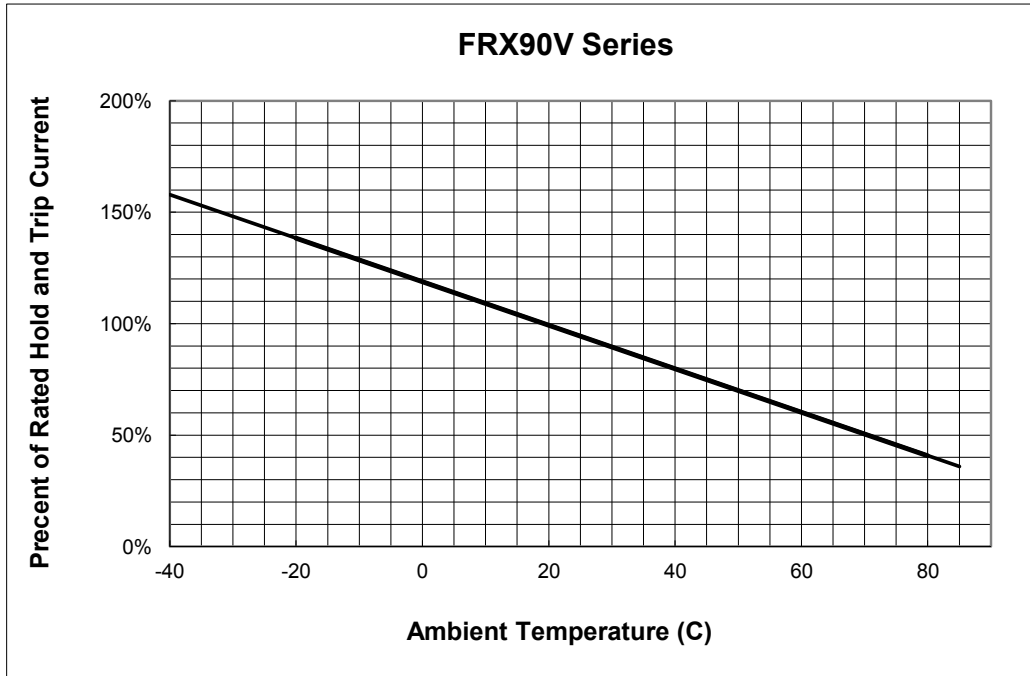
Part Number	A	B	C	D	E	F
	Maximum	Maximum	Typical	Minimum	Maximum	Typical
FRX010-90F	7.4	12.7	5.1	7.6	3.1	1.1
FRX015-90F	7.4	12.7	5.1	7.6	3.1	1.1
FRX017-90F	7.4	12.7	5.1	7.6	3.1	1.1
FRX020-90F	7.4	12.7	5.1	7.6	3.1	1.1
FRX025-90F	7.4	12.7	5.1	7.6	3.1	1.1
FRX030-90F	7.4	12.7	5.1	7.6	3.1	1.1
FRX035-90F	7.4	12.7	5.1	7.6	3.1	1.1
FRX040-90F	7.6	13.5	5.1	7.6	3.1	1.1
FRX050-90F	7.9	13.7	5.1	7.6	3.1	1.1
FRX055-90F	9.7	14.0	5.1	7.6	3.1	1.1
FRX065-90F	9.7	14.5	5.1	7.6	3.1	1.1
FRX075-90F	10.4	15.2	5.1	7.6	3.1	1.1
FRX090-90F	11.7	15.8	5.1	7.6	3.1	1.1
FRX110-90F	13.0	18.0	5.1	7.6	3.1	1.4
FRX135-90F	14.5	19.6	5.1	7.6	3.1	1.4
FRX160-90F	16.3	21.3	5.1	7.6	3.1	1.4
FRX185-90F	17.8	22.9	5.1	7.6	3.1	1.4
FRX250-90F	21.3	26.4	10.2	7.6	3.1	1.4
FRX300-90F	24.9	30.0	10.2	7.6	3.1	1.4
FRX375-90F	28.5	33.5	10.2	7.6	3.1	1.4

NOTE : Specification subject to change without notice.

2019/11/12

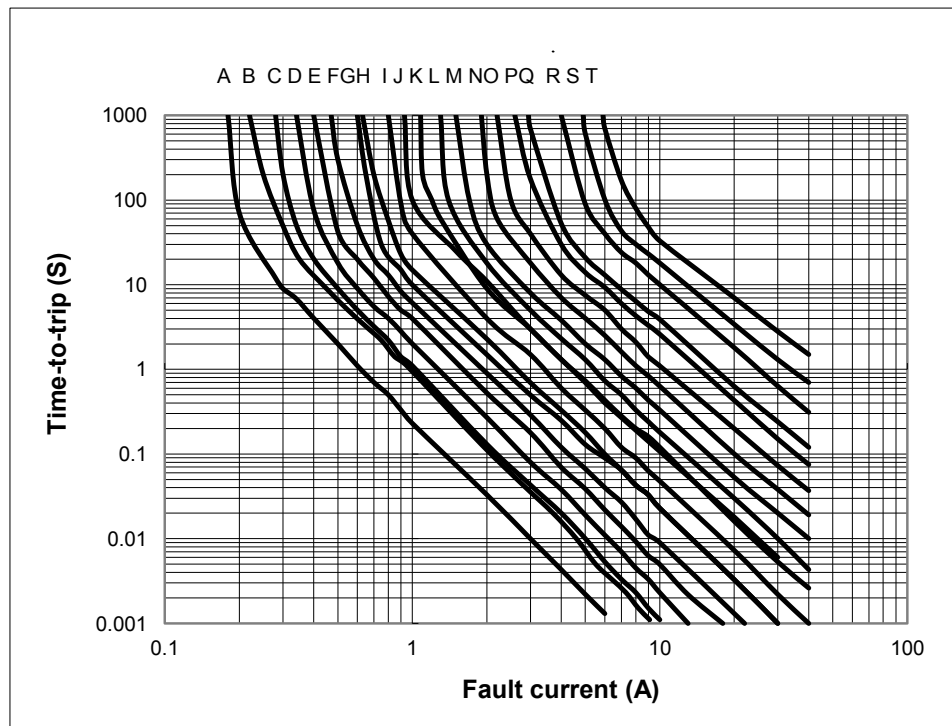


5. Thermal Derating Curve



6. Typical Time-To-Trip at 23°C

- A =FRX010-90F
- B =FRX015-90F
- C =FRX017-90F
- D =FRX020-90F
- E =FRX025-90F
- F =FRX030-90F
- G =FRX035-90F
- H=FRX040-90F
- I =FRX050-90F
- J =FRX055-90F
- K=FRX065-90F
- L =FRX075-90F
- M=FRX090-90F
- N =FRX110-90F
- O =FRX135-90F
- P =FRX160-90F
- Q =FRX185-90F
- R=FRX250-90F
- S =FRX300-90F
- T =FRX375-90F



NOTE : Specification subject to change without notice.

 FUZETEC TECHNOLOGY CO., LTD.	NO.	PQ16-101E		
	Product Specification and Approval Sheet	Version	9	Page

7. Material Specification

Lead material : FRX010-90F~FRX040-90F Tin plated copper clad steel, 24 AWG.

FRX050-90F~FRX090-90F Tin plated copper, 24 AWG.

FRX110-90F~FRX375-90F Tin plated copper, 20 AWG.

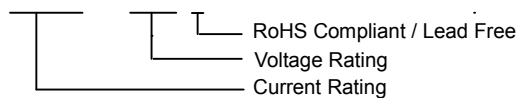
Soldering characteristics: MIL-STD-202, Method 208E.

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

8. Part Numbering and Marking System

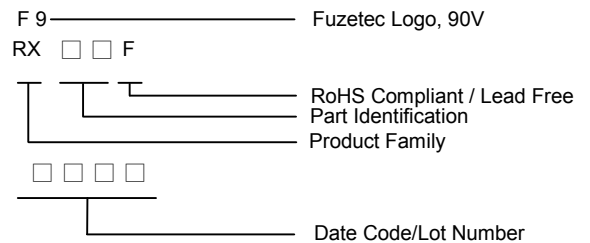
Part Numbering System

FRX □ □ □ - □ □ F



Example

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.⁴



- Operation beyond the specified maximum rating or improper use may result in damage and possible electrical arcing and/or flame.⁴
- PPTC device are intended for occasional overcurrent protection. Application for repeated overcurrent condition and/or prolonged trip are not anticipated.⁴
- 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.⁴
- Additional protection mechanism are strongly recommended to be used in conjunction with the PPTC device for protection against abnormal or failure conditions.⁴
- 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.⁴

NOTE : Specification subject to change without notice.

2019/11/12



Radial Leaded PTC Resettable Fuse: FRU Series

1. Summary

- (a) **RoHs Compliant (Lead Free) Product**
- (b) **Applications: Wide variety of electronic equipment**
- (c) **Product Features: Low resistance, High hold current, Solid state, Radial leaded product ideal for up to 30Vdc**
- (d) **Operation Current: 0.9A~9.0A**
- (e) **Maximum Voltage: 30VDC**
- (f) **Temperature Range : -40°C to 85°C**

2. Agency Recognition

UL: File No. E211981

C-UL: File No. E211981

TÜV: File No. R50004084

3. Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max.Time To Trip	Maximum Current	Rated Voltage	Typical Power	Resistance	
							R _{MIN}	R _{1MAX}
	I _H , A	I _T , A	at 5xI _H ,s	I _{MAX} , A	V _{MAX} , VDC	Pd, W	Ohms	Ohms
FRU090-30F	0.90	1.80	5.9	100	30	0.6	0.070	0.220
FRU110-30F	1.10	2.20	6.6	100	30	0.7	0.050	0.170
FRU135-30F	1.35	2.70	7.3	100	30	0.8	0.040	0.130
FRU160-30F	1.60	3.20	8.0	100	30	0.9	0.030	0.110
FRU185-30F	1.85	3.70	8.7	100	30	1.0	0.030	0.090
FRU250-30F	2.50	5.00	10.3	100	30	1.2	0.020	0.070
FRU300-30F	3.00	6.00	10.8	100	30	2.0	0.020	0.080
FRU400-30F	4.00	8.00	12.7	100	30	2.5	0.010	0.050
FRU500-30F	5.00	10.00	14.5	100	30	3.0	0.010	0.050
FRU600-30F	6.00	12.00	16.0	100	30	3.5	0.005	0.040
FRU700-30F	7.00	14.00	17.5	100	30	3.8	0.005	0.030
FRU800-30F	8.00	16.00	18.8	100	30	4.0	0.005	0.020
FRU900-30F	9.00	18.00	20.0	100	30	4.2	0.005	0.020

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}).

Pd=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: FRU090-30F~FRU250-30F Tin plated copper clad steel, 24 AWG.

FRU300-30F~FRU900-30F Tin plated copper, 20 AWG.

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

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

NOTE : Specification subject to change without notice.

2019/11/12



4. Production Dimensions (millimeter)

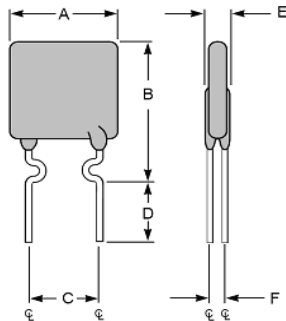


Fig.1
Lead Size: 24AWG
Φ 0.51 mm Diameter

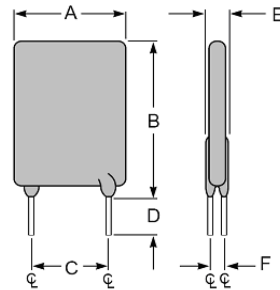
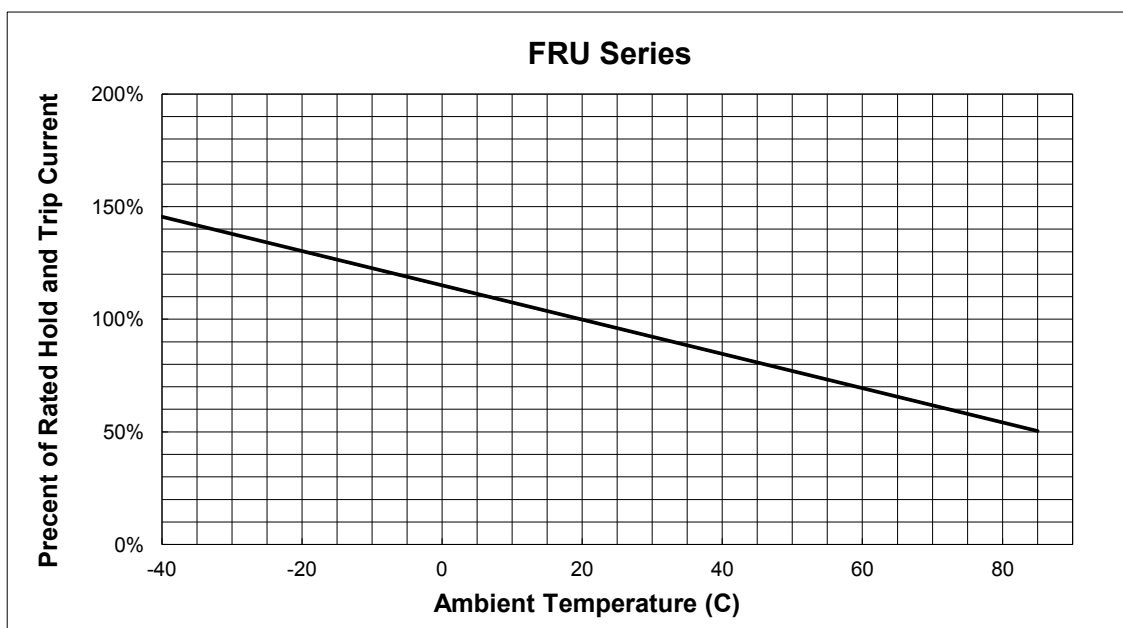


Fig.2
Lead Size: 20AWG
Φ 0.81 mm Diameter

Part Number	Fig	A	B	C	D	E	F
		Maximum	Maximum	Typical	Minimum	Maximum	Typical
FRU090-30F	1	7.4	12.2	5.1	7.6	3.0	0.9
FRU110-30F	1	7.4	14.2	5.1	7.6	3.0	0.9
FRU135-30F	1	8.9	13.5	5.1	7.6	3.0	0.9
FRU160-30F	1	8.9	15.2	5.1	7.6	3.0	0.9
FRU185-30F	1	10.2	15.7	5.1	7.6	3.0	0.9
FRU250-30F	1	11.4	18.3	5.1	7.6	3.0	0.9
FRU300-30F	2	11.4	17.3	5.1	7.6	3.0	1.2
FRU400-30F	2	14.0	20.1	5.1	7.6	3.0	1.2
FRU500-30F	2	14.0	24.9	10.2	7.6	3.0	1.2
FRU600-30F	2	16.5	24.9	10.2	7.6	3.0	1.2
FRU700-30F	2	19.1	26.7	10.2	7.6	3.0	1.2
FRU800-30F	2	21.6	29.2	10.2	7.6	3.0	1.2
FRU900-30F	2	24.1	29.7	10.2	7.6	3.0	1.2

5. Thermal Derating Curve

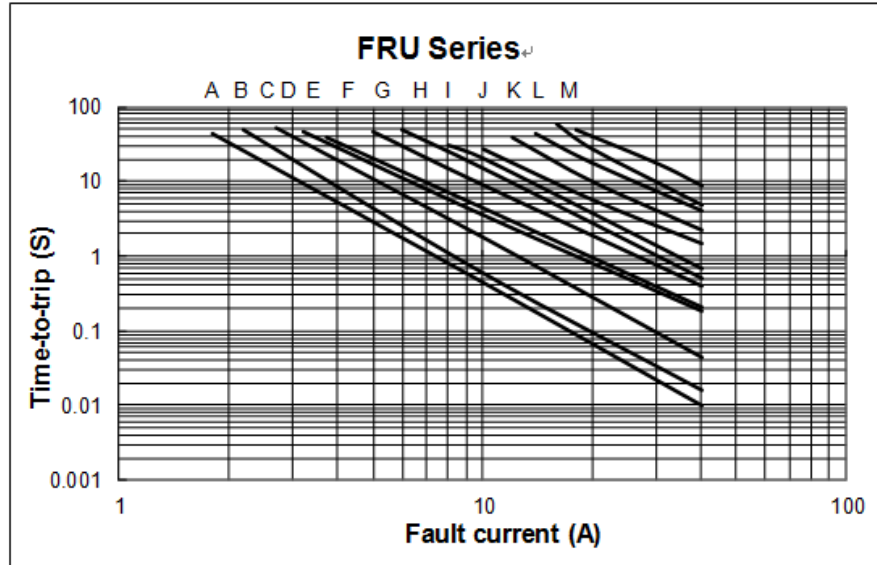


NOTE : Specification subject to change without notice.



6. Typical Time-To-Trip at 23°C

- A =FRU090-30F
- B =FRU110-30F
- C =FRU135-30F
- D =FRU160-30F
- E =FRU185-30F
- F =FRU250-30F
- G =FRU300-30F
- H =FRU400-30F
- I =FRU500-30F
- J =FRU600-30F
- K =FRU700-30F
- L =FRU800-30F
- M =FRU900-30F



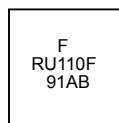
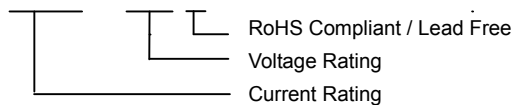
7. Material Specification

Lead material : FRU090-30F~FRU250-30F Tin plated copper clad steel, 24 AWG.
 FRU300-30F~FRU900-30F Tin plated copper, 20 AWG.
 Soldering characteristics: MIL-STD-202, Method 208E.
 Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

8. Part Numbering and Marking System

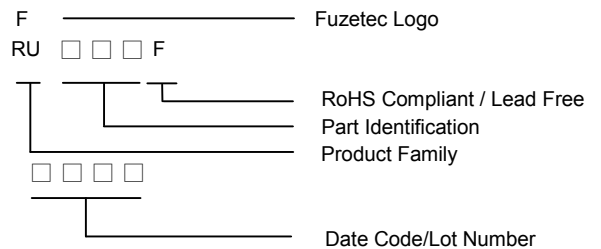
Part Numbering System

FRU □ □ □ - □ □ F



Example

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.

NOTE : Specification subject to change without notice.

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Radial Leaded PTC Resettable Fuse: FRT Series

1. Summary

- (a) **RoHS Compliant (Lead Free) Product**
- (b) **Applications: IEEE 1394 FireWire, Computers & Consumer electronics**
- (c) **Product Features: Fast trip time, Lower Trip-to-hold Ratio, Radial-leaded product ideal for up to 36VDC**
- (d) **Operation Current: 0.50A~2.50A**
- (e) **Maximum Voltage: 36VDC**
- (f) **Temperature Range : -40°C to 85°C**

2. Agency Recognition

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

3. Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max.Time To Trip	Max. Current	Rated Voltage	Typ. Power	Resistance	
	I _H , A	I _T , A	at 5xI _H ,s	I _{MAX} , A	V _{MAX} , VDC	P _d , W	R _{MIN}	R _{1MAX}
	Ohms	Ohms						
FRT050-33F	0.50	1.10	5.0	40	36	0.67	0.140	0.448
FRT075-33F	0.75	1.50	4.0	40	36	0.71	0.115	0.368
FRT090-33F	0.90	1.80	3.5	40	36	0.74	0.090	0.288
FRT120-33F	1.20	2.30	3.5	40	36	0.78	0.074	0.180
FRT135-33F	1.35	2.50	4.5	40	36	0.84	0.059	0.143
FRT160-33F	1.60	2.75	4.5	40	36	0.86	0.041	0.131
FRT190-33F	1.90	3.00	3.5	40	36	0.90	0.045	0.092
FRT220-33F	2.20	3.50	6.5	40	36	0.95	0.025	0.080
FRT250-33F	2.50	4.00	8.0	40	36	0.99	0.020	0.064

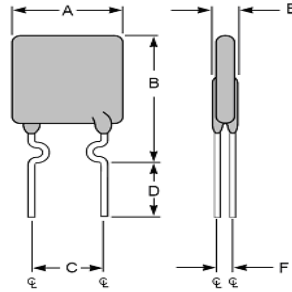
I_H=Hold current-maximum current at which the device will not trip at 23°C still air.
 I_T=Trip current-minimum current at which the device will always trip at 23°C still air.
 V_{MAX}=Maximum voltage device can withstand without damage at its rated current.
 I_{MAX}= Maximum fault current device can 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: Tin plated copper clad steel, 24 AWG.
 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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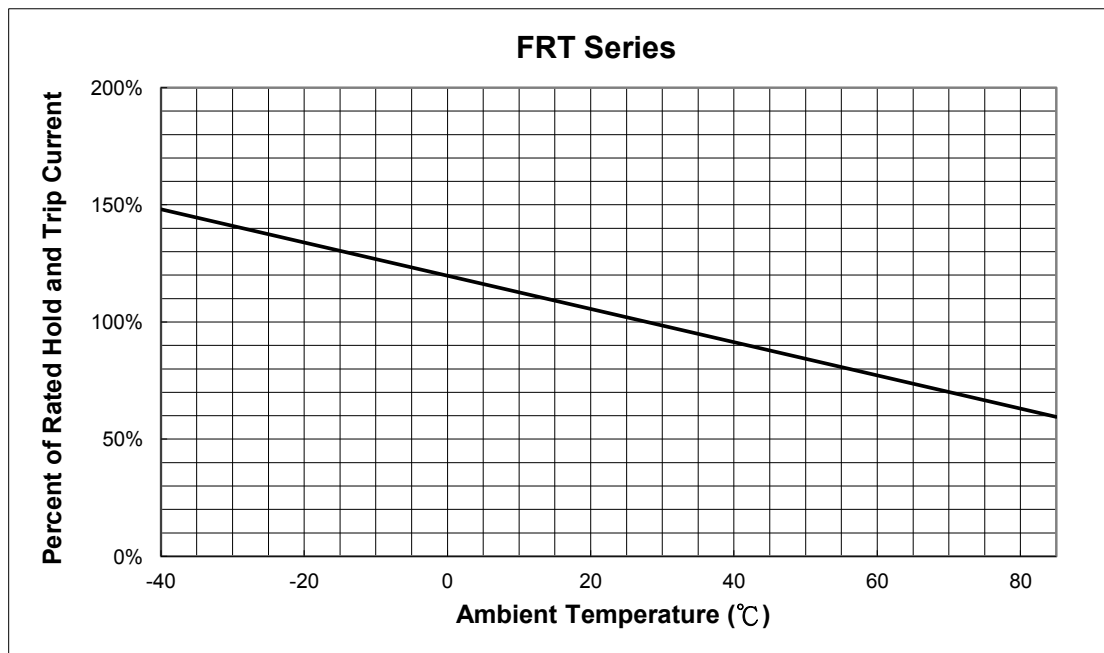
4. Production Dimensions (millimeter)



Lead Size :24AWG
Φ 0.51 mm Diameter

Part Number	A	B	C	D	E	F
	Maximum	Maximum	Typical	Minimum	Maximum	Typical
FRT050-33F	7.4	12.2	5.1	7.6	3.0	1.1
FRT075-33F	7.4	12.2	5.1	7.6	3.0	1.1
FRT090-33F	7.4	12.2	5.1	7.6	3.0	1.1
FRT120-33F	7.4	12.2	5.1	7.6	3.0	1.1
FRT135-33F	7.4	14.2	5.1	7.6	3.0	1.1
FRT160-33F	7.4	14.0	5.1	7.6	3.0	1.1
FRT190-33F	9.0	13.5	5.1	7.6	3.0	1.1
FRT220-33F	10.0	17.0	5.1	7.6	3.0	1.1
FRT250-33F	10.0	19.5	5.1	7.6	3.0	1.1

5. Thermal Derating Curve

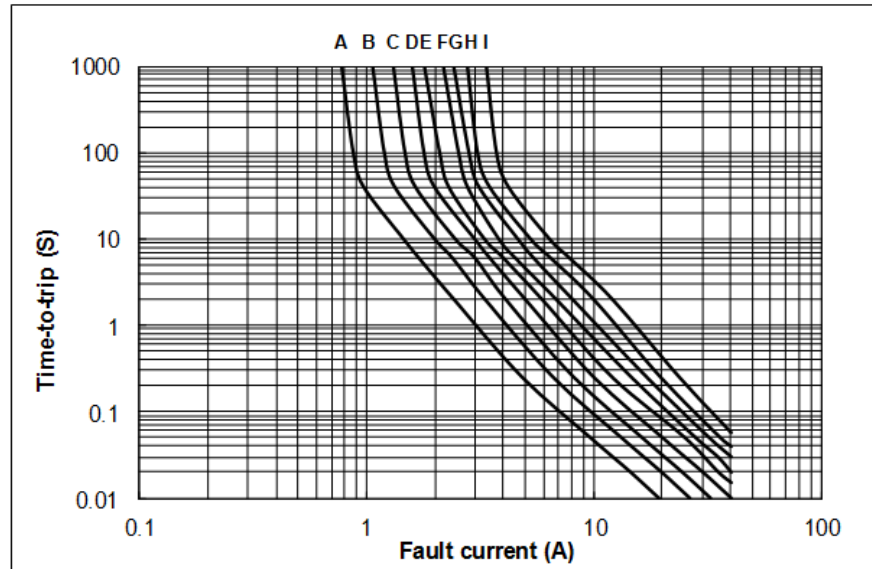


NOTE : Specification subject to change without notice.



6. Typical Time-To-Trip at 23°C

- A= FRT050-33F
- B= FRT075-33F
- C= FRT090-33F
- D= FRT120-33F
- E= FRT135-33F
- F= FRT160-33F
- G= FRT190-33F
- H= FRT220-33F
- I= FRT250-33F

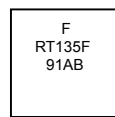
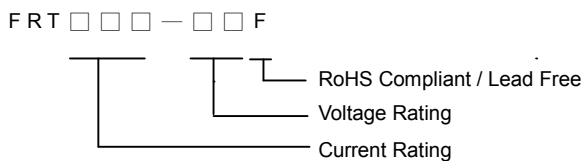


7. Material Specification

- Lead material : Tin plated copper clad steel, 24 AWG.
- Soldering characteristics: MIL-STD-202, Method 208E.
- Insulating coating: Flame retardant epoxy, meets UL-94V-0 requirement.

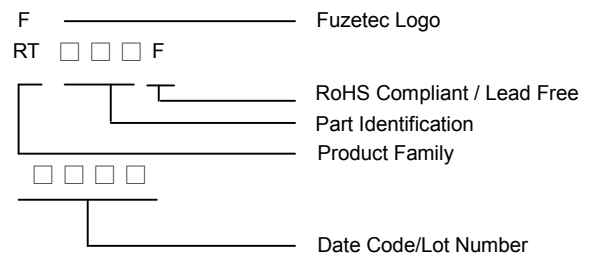
8. Part Numbering and Marking System

Part Numbering System



Example

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.



NOTE : Specification subject to change without notice.



Radial Leaded PTC Resettable Fuse: FUSB Series

1. Summary

- (a) **RoHS Compliant (Lead Free) Product**
- (b) **Applications: Low voltage USB equipment and Computers & peripherals**
- (c) **Product Features: Low resistance, Fast trip time, Low trip-to-hold ratio**
- (d) **Operation Current: 0.75A~2.50A**
- (e) **Maximum Voltage: 16V/30VDC**
- (f) **Temperature Range : -40°C to 85°C**

2. Agency Recognition

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

3. Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max.Time to Trip		Max. Current	Rated Voltage	Typ. Power	Resistance	
			Current	Time				RMIN	R1MAX
			I _H , A	I _T , A				A	Sec
FUSB075F	0.75	1.30	8.0	0.4	40	16	0.3	0.08	0.23
FUSB090F	0.90	1.80	8.0	1.2	40	16/30	0.6	0.07	0.18
FUSB110F	1.10	2.20	8.0	2.3	40	16/30	0.7	0.05	0.14
FUSB120F	1.20	2.00	8.0	0.7	40	16	0.6	0.04	0.14
FUSB135F	1.35	2.70	8.0	4.5	40	16/30	0.8	0.04	0.12
FUSB155F	1.55	2.70	7.8	2.2	40	16	0.7	0.03	0.12
FUSB160F	1.60	3.20	8.0	9.0	40	16/30	0.9	0.03	0.11
FUSB185F	1.85	3.70	8.0	10.0	40	16/30	1.0	0.03	0.09
FUSB250F	2.50	5.00	8.0	40.0	40	16/30	1.2	0.02	0.07

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: Tin plated copper clad steel,24 AWG.
 Soldering characteristics: Solder ability per ANSI/J-STD 002
 Solder heat withstand per IEC 68-2-20
 Insulating coating:Flame retardant epoxy polymer, meets UL 94V-0 requirement.

NOTE : Specification subject to change without notice.

2019/11/13



4. Production Dimensions (millimeter)

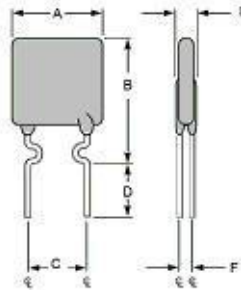


Fig.1

Lead Size: 24AWG

Φ 0.51 mm Diameter

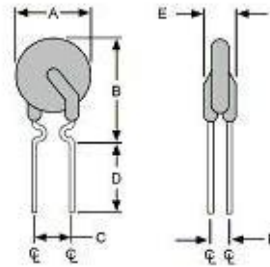


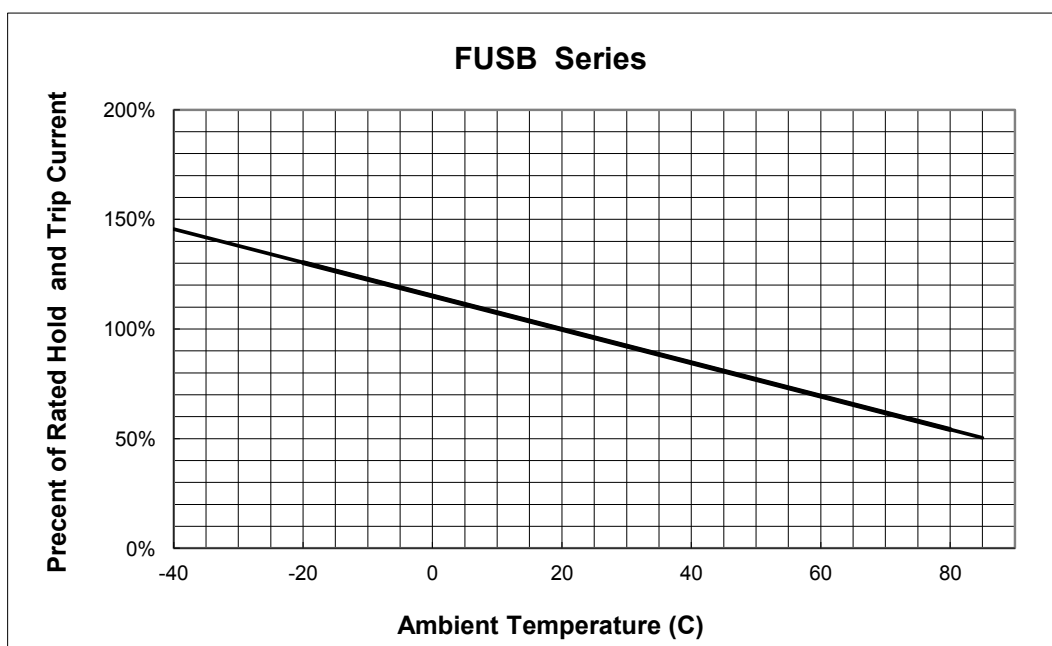
Fig.2

Lead Size: 24AWG

Φ 0.51 mm Diameter

Part Number	Fig	A	B	C	D	E	F
		Maximum	Maximum	Typical	Minimum	Maximum	Typical
FUSB075F	2	6.9	11.4	5.1	7.6	3.0	0.8
FUSB090F	1	7.4	12.2	5.1	7.6	3.0	0.8
FUSB110F	1	7.4	14.2	5.1	7.6	3.0	0.8
FUSB120F	2	6.9	11.7	5.1	7.6	3.0	0.8
FUSB135F	1	8.9	13.5	5.1	7.6	3.0	0.8
FUSB155F	2	6.9	11.7	5.1	7.6	3.0	0.8
FUSB160F	1	8.9	15.2	5.1	7.6	3.0	0.8
FUSB185F	1	10.2	15.7	5.1	7.6	3.0	0.8
FUSB250F	1	11.4	18.3	5.1	7.6	3.0	0.8

5. Thermal Derating Curve

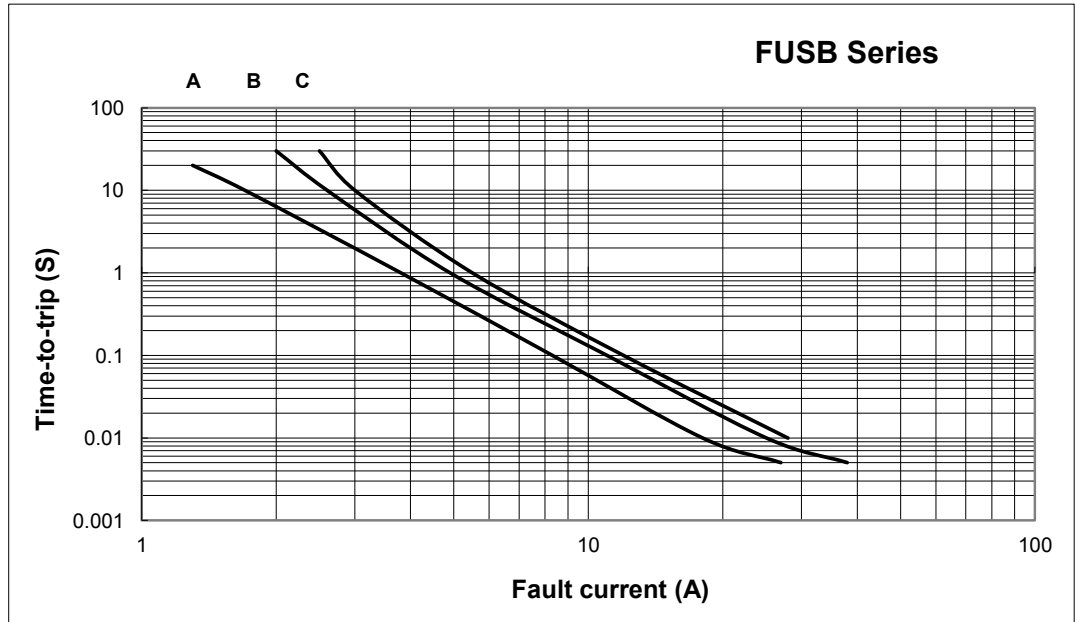


NOTE : Specification subject to change without notice.

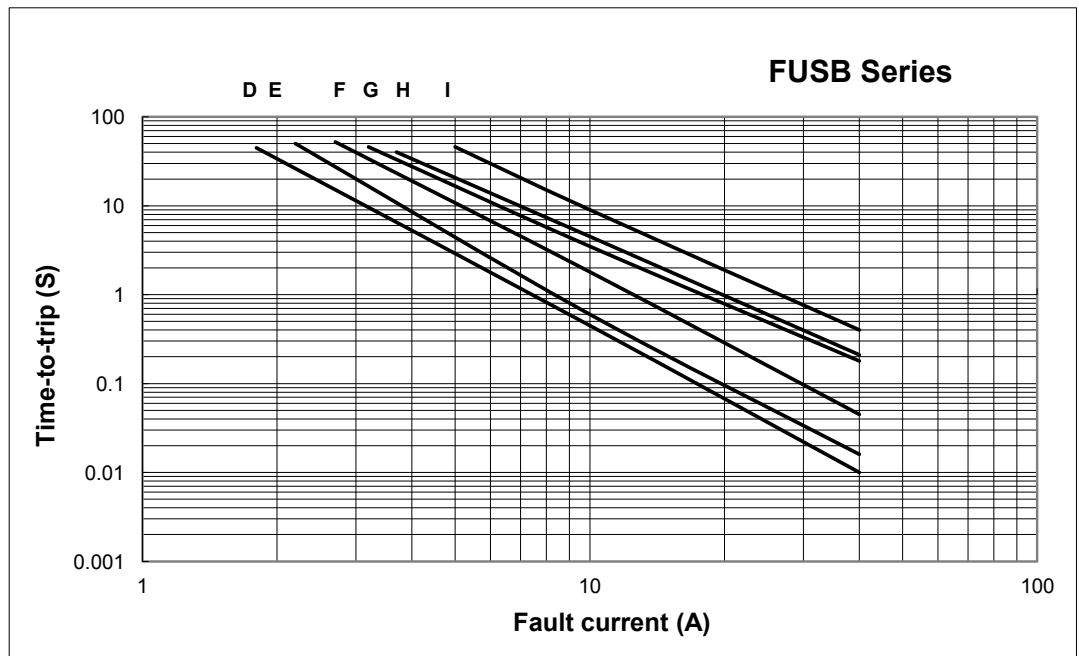


6. Typical Time-To-Trip at 23°C

- A = FUSB075F
- B = FUSB120F
- C = FUSB155F



- D = FUSB090F
- E = FUSB110F
- F = FUSB135F
- G = FUSB160F
- H = FUSB185F
- I = FUSB250F



NOTE : Specification subject to change without notice.

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7. Material Specification

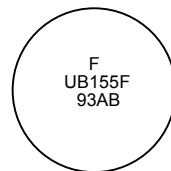
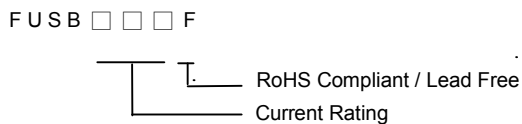
Lead material: Tin plated copper clad steel, 24 AWG

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

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

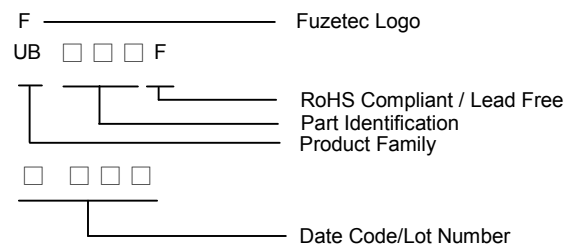
8. Part Numbering and Marking System

Part Numbering System



Example

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.↵

NOTE : Specification subject to change without notice.

2019/11/13



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

2. Agency Recognition

UL : File No. E211981

C-UL: File No. E211981

TÜV: File No. R50004084

3. Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max.Time to trip	Max. Current	Rated Voltage	Typ. Power	Resistance	
	I _H , A	I _T , A	at 5xI _H ,s	I _{MAX} , A	V _{MAX} , VDC	P _d , W	R _{MIN}	R _{1MAX}
							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
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°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 the 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: FRG250-16F Tin plated copper clad steel, 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 ,meet UL-94V-0 requirement.

NOTE : Specification subject to change without notice.

2019/11/13



4. Production Dimensions (millimeter)

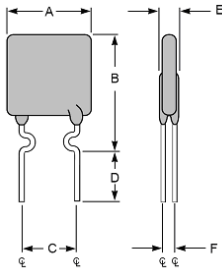


Figure 1
Lead Size: 24AWG
Φ 0.51 mm Diameter

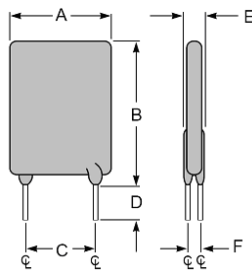


Figure 2
Lead Size: 20AWG
Φ 0.81 mm Diameter

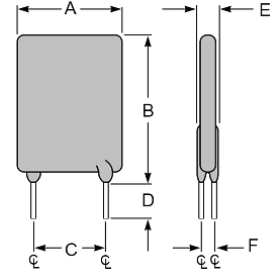
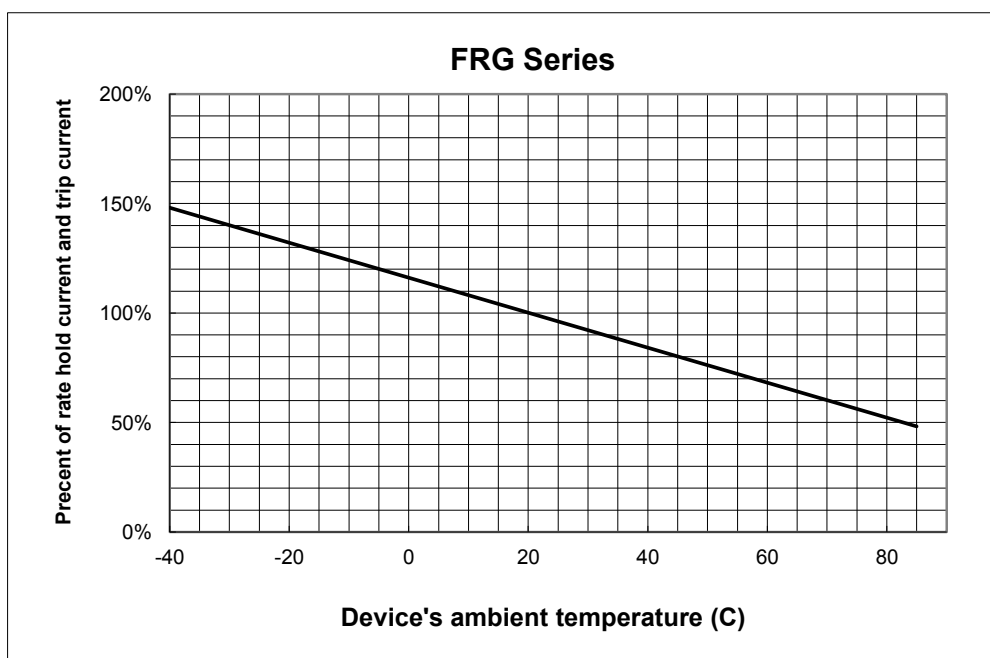


Figure 3
Lead Size: 18AWG
Φ 1.0 mm Diameter

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

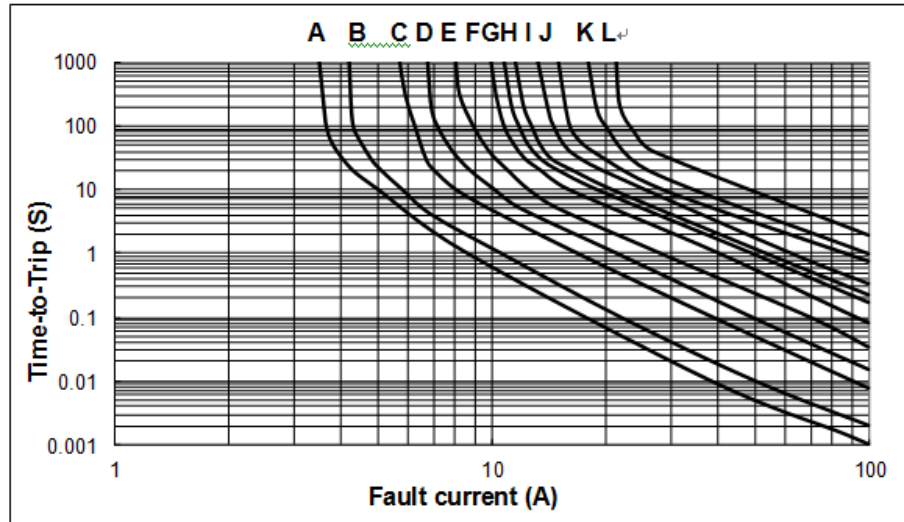


NOTE : Specification subject to change without notice.



6. Typical Time-To-Trip at 23°C

- A = FRG250-16F
- B = FRG300-16F
- C = FRG400-16F
- D = FRG500-16F
- E = FRG600-16F
- F = FRG700-16F
- G = FRG800-16F
- H = FRG900-16F
- I = FRG1000-16F
- J = FRG1100-16F
- K = FRG1200-16F
- L = FRG1400-16F



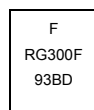
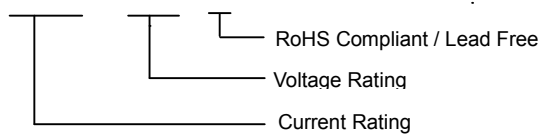
7. Material Specification

Lead material : FRG250-16F Tin plated copper clad steel, 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

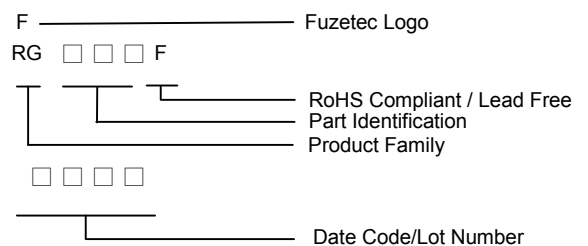
Part Numbering System

FRG □□□ - □□ F



Example

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.



NOTE : Specification subject to change without notice.



Radial Leaded PTC Resettable Fuse : FHT 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 and Operating temperatures up to 125°C.
- (d) Operation Current : 0.5A~15.0A
- (e) Maximum Voltage : 16V/30VDC
- (f) Temperature Range : -40°C to 125°C

2. Agency Recognition

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

3. Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max.Time to Trip	Maximum Current	Rated Voltage	Typical Power	Resistance	
							RMIN	R1MAX
	I _H , A	I _T , A	at 5xI _H , S	I _{MAX} , A	V _{MAX} , VDC	P _d , W	Ohms	Ohms
FHT050-30F	0.5	0.9	2.5	40	30	0.9	0.4800	1.1000
FHT070-30F	0.7	1.4	3.2	40	30	1.4	0.3000	0.8000
FHT100-30F	1.0	1.8	5.2	40	30	1.4	0.1800	0.4300
FHT200-16F	2.0	3.8	3.0	100	16	1.4	0.0450	0.1100
FHT300-16F	3.0	6.0	5.0	100	16	3.0	0.0330	0.0790
FHT400-16F	4.0	7.0	5.0	100	16	3.3	0.0240	0.0600
FHT450-16F	4.5	7.8	3.0	100	16	3.6	0.0220	0.0540
FHT550-16F	5.5	10.0	6.0	100	16	3.5	0.0150	0.0370
FHT600-16F	6.0	10.8	5.0	100	16	4.1	0.0130	0.0320
FHT650-16F	6.5	12.0	5.5	100	16	4.3	0.0110	0.0260
FHT700-16F	7.0	13.0	7.0	100	16	4.0	0.0100	0.0250
FHT750-16F	7.5	13.1	7.0	100	16	4.5	0.0094	0.0220
FHT800-16F	8.0	15.0	8.0	100	16	4.2	0.0080	0.0200
FHT900-16F	9.0	16.5	10.0	100	16	5.0	0.0074	0.0170
FHT1000-16F	10.0	18.5	9.0	100	16	5.3	0.0062	0.0150
FHT1100-16F	11.0	20.0	11.0	100	16	5.5	0.0055	0.0130
FHT1300-16F	13.0	24.0	13.0	100	16	6.9	0.0041	0.0100
FHT1400-16F	14.0	27.0	13.0	100	16	6.9	0.0030	0.0090
FHT1500-16F	15.0	28.0	20.0	100	16	7.0	0.0032	0.0092

NOTE : Specification subject to change without notice.

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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.
 $R1_{MAX}$ =Maximum device resistance at 23°C, 1 hour after tripping .
 Physical specifications:
 Lead material: FHT050-30F~FHT100-30F and FHT200-16F Tin plated copper clad steel, 24 AWG.
 FHT300-16F~FHT1100-16F Tin plated copper, 20 AWG.
 FHT1300-16F~FHT1500-16F Tin plated copper, 18 AWG.
 Soldering characteristics:MIL-STD-202, Method 208E.
 Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement.

4. Production Dimensions (millimeter)

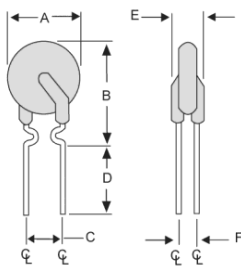


Fig.1

Lead Size :24AWG
Φ0.51 mm Diameter

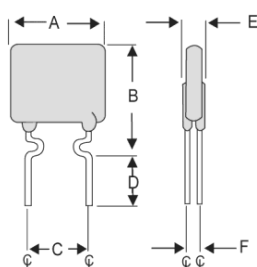


Fig.2

Lead Size :24AWG
Φ0.51 mm Diameter

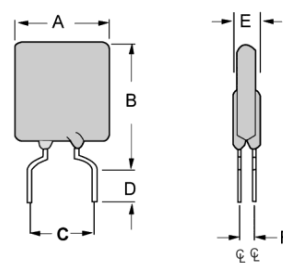


Fig.3

Lead Size : 20AWG
Φ 0.81 mm Diameter

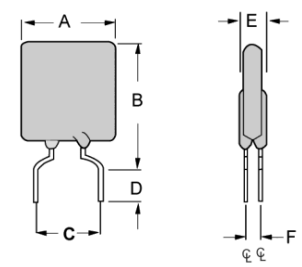


Fig.4

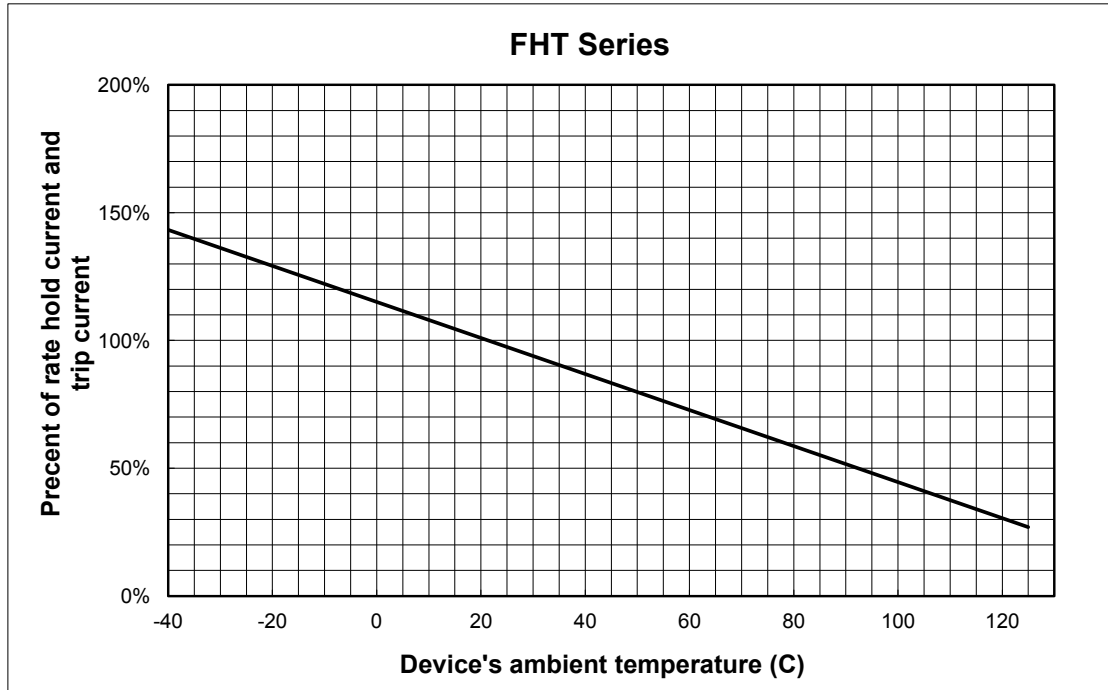
Lead Size : 18AWG
Φ 1.00 mm Diameter

Part Number	Figure	A	B	C	D	E	F
		Maximum	Maximum	Typical	Minimum	Maximum	Typical
FHT050-30F	1	7.4	12.7	5.1	7.6	3.0	1.2
FHT070-30F	2	6.9	10.8	5.1	7.6	3.0	1.2
FHT100-30F	1	9.7	13.6	5.1	7.6	3.0	1.2
FHT200-16F	1	9.4	14.4	5.1	7.6	3.0	1.2
FHT300-16F	3	8.8	13.8	5.1	7.6	3.0	1.2
FHT400-16F	3	10.0	15.0	5.1	7.6	3.0	1.2
FHT450-16F	3	10.4	15.6	5.1	7.6	3.0	1.2
FHT550-16F	3	11.2	18.9	5.1	7.6	3.0	1.2
FHT600-16F	3	11.2	21.0	5.1	7.6	3.0	1.2
FHT650-16F	3	12.7	22.2	5.1	7.6	3.0	1.2
FHT700-16F	3	14.0	21.9	5.1	7.6	3.0	1.2
FHT750-16F	3	14.0	23.5	5.1	7.6	3.0	1.2
FHT800-16F	3	16.5	22.5	5.1	7.6	3.0	1.2
FHT900-16F	3	16.5	25.7	5.1	7.6	3.0	1.2
FHT1000-16F	3	17.5	26.5	10.2	7.6	3.0	1.2
FHT1100-16F	3	21.0	26.1	10.2	7.6	3.0	1.2
FHT1300-16F	4	23.5	28.7	10.2	7.6	3.6	1.4
FHT1400-16F	4	23.5	28.7	10.2	7.6	3.6	1.4
FHT1500-16F	4	23.5	28.7	10.2	7.6	3.6	1.4

NOTE : Specification subject to change without notice.

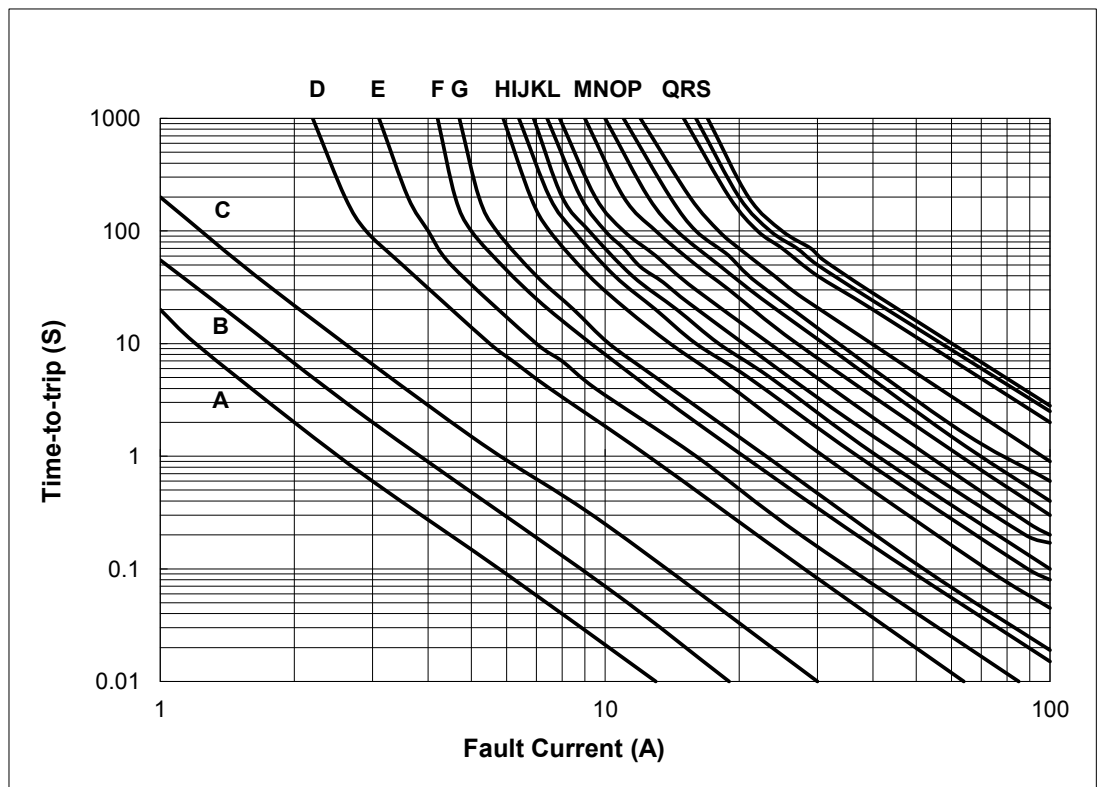


5. Thermal Derating Curve



6. Typical Time-To-Trip at 23°C

- A=FHT050-30F
- B=FHT070-30F
- C=FHT100-30F
- D=FHT200-16F
- E=FHT300-16F
- F=FHT400-16F
- G=FHT450-16F
- H=FHT550-16F
- I=FHT600-16F
- J=FHT650-16F
- K=FHT700-16F
- L= FHT750-16F
- M=FHT800-16F
- N=FHT900-16F
- O=FHT1000-16F
- P=FHT1100-16F
- Q=FHT1300-16F
- R=FHT1400-16F
- S=FHT1500-16F



NOTE : Specification subject to change without notice.

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 FUZETEC TECHNOLOGY CO., LTD.	NO.	PQ27-120E		
	Product Specification and Approval Sheet	Version	A2	Page

7. Material Specification

Lead material : FHT050-30F~FHT100-30F and FHT200-16F Tin plated copper clad steel, 24 AWG.

FHT300-16F~FHT1100-16F Tin plated copper, 20 AWG.

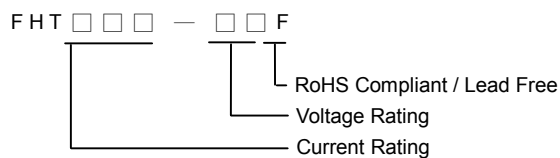
FHT1300-16F~FHT1500-16F Tin plated copper, 18 AWG.

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

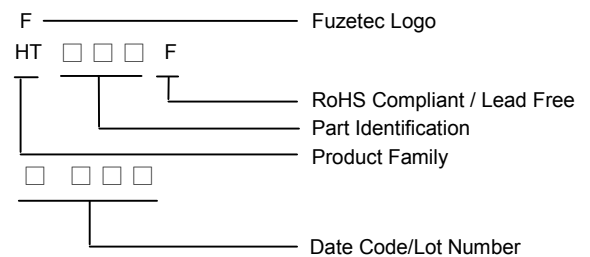
Insulating coating: Flame retardant epoxy, meets UL-94V-0 requirement.

8. Part Numbering and Marking System

Part Numbering System



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.⁴



- Operation beyond the specified maximum rating or improper use may result in damage and possible electrical arcing and/or flame.⁴
- PPTC device are intended for occasional overcurrent protection. Application for repeated overcurrent condition and/or prolonged trip are not anticipated.⁴
- 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.⁴
- Additional protection mechanism are strongly recommended to be used in conjunction with the PPTC device for protection against abnormal or failure conditions.⁴
- 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.⁴

NOTE : Specification subject to change without notice.

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 FUZETEC TECHNOLOGY CO., LTD.	NO.	PQ43-101E		
	Product Specification and Approval Sheet	Version	7	Page

Radial Leaded PTC Resettable Fuse : FHE 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 32V and Operating temperatures up to 125°C.**
- (d) **Operation Current : 0.5A~10.0A**
- (e) **Maximum Voltage : 32V**
- (f) **Temperature Range : -40°C to 125°C**

2. Agency Recognition

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

3. Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max.Time to Trip	Maximum Current	Rated Voltage	Typical Power	Resistance	
	I _H , A	I _T , A	at 5xI _H , S	I _{MAX} , A	V _{MAX} , VDC	P _d , W	R _{MIN}	R _{1MAX}
							Ohms	Ohms
FHE050-32F	0.5	1.0	3.0	100	32	0.9	0.3500	1.1000
FHE070-32F	0.7	1.4	3.2	100	32	1.4	0.2300	0.8000
FHE100-32F	1.0	1.9	6.2	100	32	1.4	0.1500	0.4300
FHE200-32F	2.0	4.0	5.5	100	32	2.2	0.0650	0.2500
FHE300-32F	3.0	6.0	5.0	100	32	3.2	0.0350	0.1100
FHE500-32F	5.0	10.0	9.0	100	32	5.3	0.0150	0.0400
FHE750-32F	7.5	15.0	13.0	100	32	6.5	0.0074	0.0230
FHE1000-32F	10.0	20.0	15.0	100	32	7.0	0.0060	0.0160

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: FHE050-32F~FHE100-32F Tin plated copper clad steel, 24 AWG.
 FHE200-32F~FHE750-32F Tin plated copper, 20 AWG.
 FHE1000-32F Tin plated copper, 18 AWG.
 Soldering characteristics: MIL-STD-202, Method 208E.
 Insulating coating: Flame retardant epoxy, meets UL-94V-0 requirement.

NOTE : Specification subject to change without notice.

2019/11/13



4. Production Dimensions (millimeter)

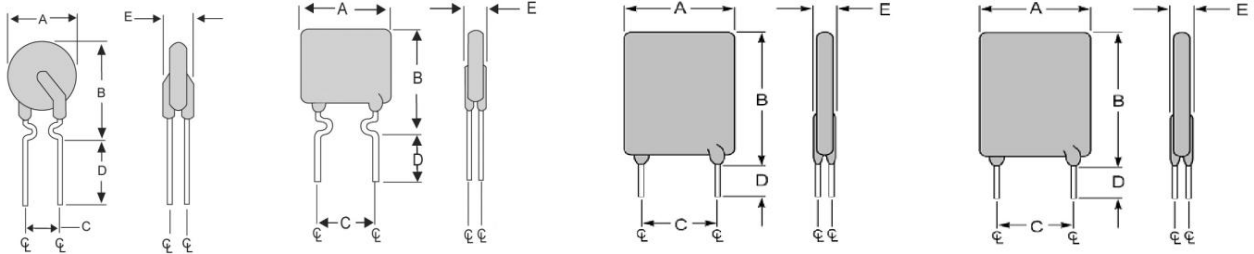


Fig.1
Lead Size: 24AWG
Φ0.51 mm Diameter

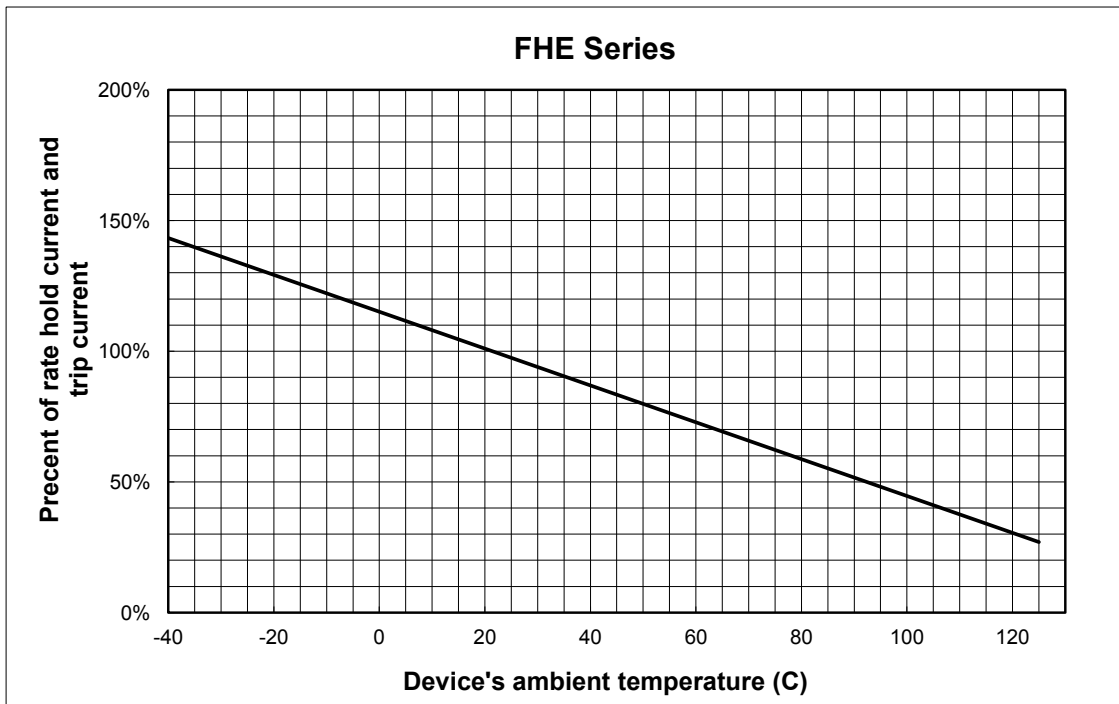
Fig.2
Lead Size: 24AWG
Φ0.51 mm Diameter

Fig.3
Lead Size: 20AWG
Φ0.81 mm Diameter

Fig.4
Lead Size: 18AWG
Φ1.00 mm Diameter

Part Number	Figure	A	B	C	D	E
		Maximum	Maximum	Typical	Minimum	Maximum
FHE050-32F	1	7.4	12.7	5.1	7.6	3.3
FHE070-32F	2	6.9	10.8	5.1	7.6	3.0
FHE100-32F	1	9.7	13.6	5.1	7.6	3.0
FHE200-32F	3	9.5	13.5	5.1	7.6	3.0
FHE300-32F	3	10.2	15.5	5.1	7.6	3.8
FHE500-32F	3	14.0	24.1	5.1	7.6	3.8
FHE750-32F	3	21.1	24.9	10.2	7.6	3.8
FHE1000-32F	4	23.5	27.9	10.2	7.6	4.0

5. Thermal Derating Curve

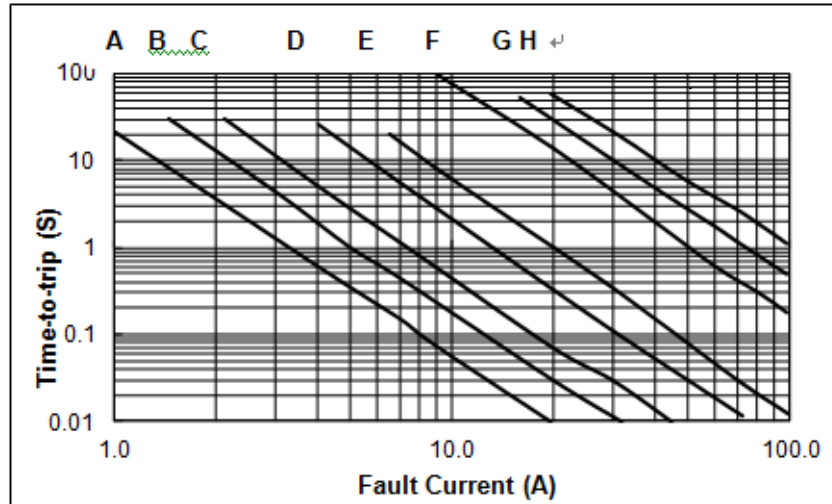


NOTE : Specification subject to change without notice.



6. Typical Time-To-Trip at 23°C

- A = FHE050-32F
- B = FHE070-32F
- C = FHE100-32F
- D = FHE200-32F
- E = FHE300-32F
- F = FHE500-32F
- G = FHE750-32F
- H = FHE1000-32F

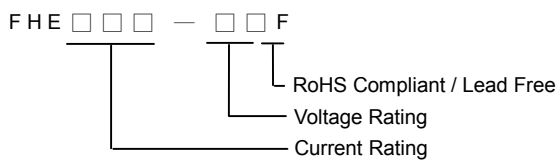


7. Material Specification

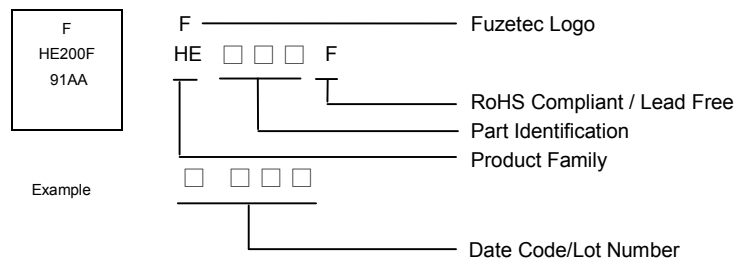
- Lead material: FHE050-32F~FHE100-32F Tin plated copper clad steel, 24 AWG.
- FHE200-32F~FHE750-32F Tin plated copper, 20 AWG.
- FHE1000-32F Tin plated copper, 18 AWG.
- Soldering characteristics: MIL-STD-202, Method 208E.
- Insulating coating: Flame retardant epoxy, meets UL-94V-0 requirement.

8. Part Numbering and Marking System

Part Numbering System



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.

NOTE : Specification subject to change without notice.



Radial Leaded PTC Resettable Fuse : FRHV Series

1. Summary

- RoHS Compliant (Lead Free) Product**
- Applications : Wide variety of electronic equipment**
- Product Features : Low hold current Solid state, Radial leaded product ideal for up to 60V/100V/250V/600V**
- Operation Current : 0.08A~0.40A**
- Maximum Operation Voltage : 60V/100V/250VDC**
- Maximum Interrupt Voltage : 250V/600VAC**
- Temperature Range : -40°C to 85°C**

2. Agency Recognition

UL : File No. E211981

C-UL: File No. E211981

TÜV: *File No. R50138901

*FRH160-600MF and FRH200-600VF~FRH400-600F TÜV In Process.

3. Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max. Time To Trip		Max. Current	Max. Oper. Voltage	Max. Int. Voltage	Typ. Power	Resistance	
			Current	Time					RMIN	R1MAX
			I _H , A	I _T , A					A	Sec
FRH080-250VF	0.08	0.16	0.35	4.0	3.0	100	250	1.0	14.00	33.00
FRH110-250VF	0.11	0.22	1.00	2.0	3.0	100	250	1.0	5.00	16.00
FRH120-250VF	0.12	0.24	1.00	2.0	3.0	100	250	1.0	4.00	16.00
FRH145-250VF	0.15	0.29	1.00	2.5	3.0	100	250	1.0	3.00	12.00
FRH180-250XF	0.18	0.65	3.00	2.0	10.0	100	250	1.0	0.80	4.00
FRH150-600MF	0.15	0.30	1.00	4.0	3.0	250	600	1.0	6.00	17.00
FRH160-600MF	0.16	0.32	1.00	7.0	3.0	250	600	1.0	4.00	16.00
FRH160-600VF	0.16	0.32	1.00	7.0	3.0	250	600	1.0	4.00	18.00
FRH200-600VF	0.20	0.40	1.00	12.0	3.0	250	600	1.0	4.00	13.50
FRH250-600VF	0.25	0.85	3.00	1.0	3.0	250	600	1.0	1.00	7.00
FRH400-600F	0.40	1.00	3.00	4.0	3.0	60	600	1.0	0.95	1.90

I_H=Hold current-maximum current at which the device will not trip at 23°C still air.

I_T=Trip current-maximum current at which the device will always trip at 23°C still air.

V_{MAX}=Maximum operating voltage at which the device can withstand without damage at its rated current.

V_{I-MAX} = Maximum interrupt voltage device can withstand for short period of time. (Not for long term.)

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°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: Tin plated copper, 22 AWG.

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

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

*NOTE : All FRHV products are designed to assist equipment to pass ITU, UL60950 or GR1089 specification.

*FRH150-600MF, FRH160-600VF meet UL497A Overvoltage and Endurance Conditioning requirements for Thermistor type component.

CAUTION : FRHV devices are not intended for continuous use of Line Voltage such as 120Vac ~ 600Vac and above.

NOTE : Specification subject to change without notice.



4. Production Dimensions (millimeter)

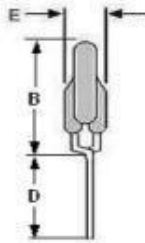
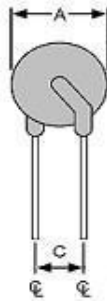


Fig.1
Lead Size :22AWG,
Φ 0.65 mm Diameter

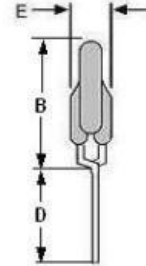
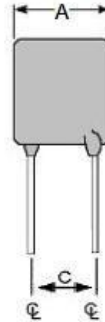


Fig.2
Lead Size : 22AWG,
Φ 0.65 mm Diameter

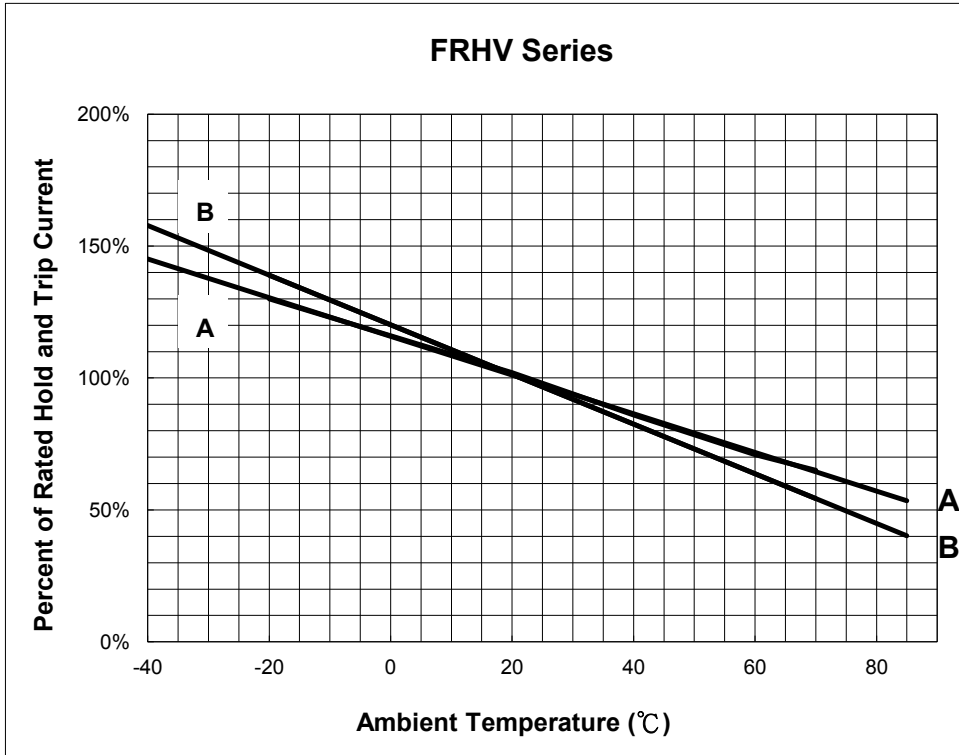
Part Number	Fig	A	B	C	D	E
		Maximum	Maximum	Typical	Minimum	Maximum
FRH080-250VF	1	5.8	9.6	5.0	4.7	4.6
FRH110-250VF	1	6.8	9.9	5.0	4.7	4.6
FRH120-250VF	2	6.5	11.0	5.0	4.7	4.6
FRH145-250VF	2	6.5	11.0	5.0	4.7	4.6
FRH180-250XF	1	9.0	12.0	5.0	4.7	3.8
FRH150-600MF	2	9.0	12.5	5.0	4.7	4.6
FRH160-600MF	2	9.0	12.5	5.0	4.7	4.6
FRH160-600VF	2	16.0	12.6	5.0	4.7	6.0
FRH200-600VF	2	12.0	14.0	5.0	4.7	6.0
FRH250-600VF	2	12.0	15.0	5.0	4.7	6.0
FRH400-600F	2	15.0	14.5	5.0	4.7	6.0

NOTE : Specification subject to change without notice.

2019/11/13



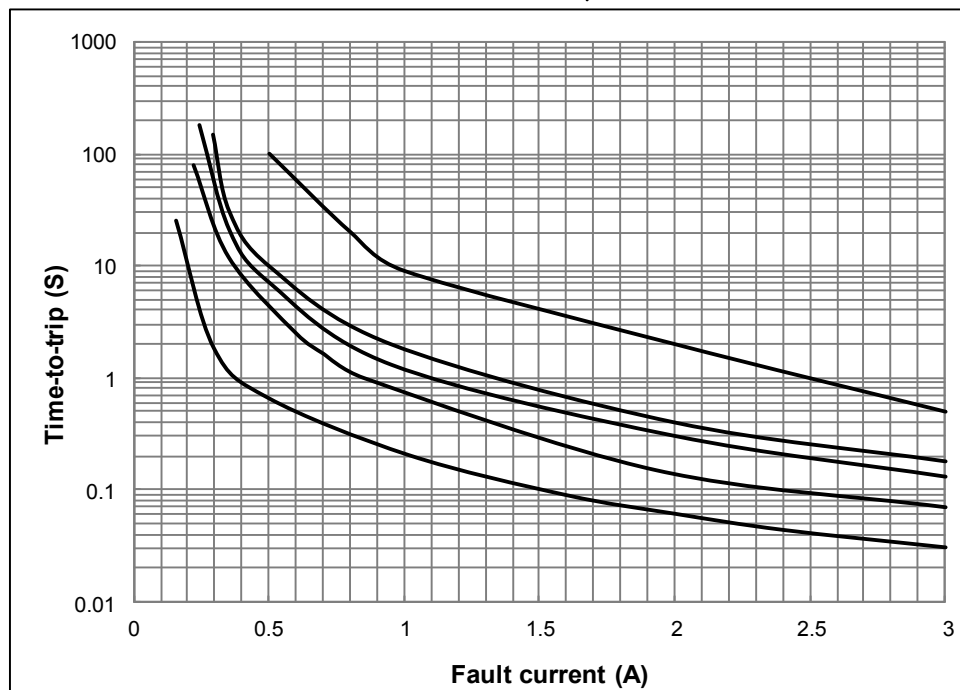
5. Thermal Derating Curve



A= FRH180-250XF
 B= All other FRHV devices

6. Typical Time-To-Trip at 23°C

- A= FRH080-250VF
- B= FRH110-250VF
- C= FRH120-250VF
- D= FRH145-250VF
- E= FRH180-250XF



NOTE : Specification subject to change without notice.

 FUZETEC TECHNOLOGY CO., LTD.	NO.	PQ28-122E		
	Product Specification and Approval Sheet	Version	A0	Page

Radial Leaded PTC Resettable Fuse : FRVL Series

1. Summary

- (a) **RoHS Compliant (Lead Free) product**
- (b) **Applications : Wide variety of electronic equipment**
- (c) **Product Features : Solid state, Radial leaded product ideal for up to 120V_{AC/DC}**
- (d) **Operation Current : 0.10A~3.75A**
- (e) **Maximum Operating Voltage : 120V_{AC/DC}**
- (f) **Maximum Interrupt Voltage : 135V_{AC/DC}**
- (g) **Temperature Range : -40°C to 85°C**

2. Agency Recognition

UL : File No. E211981
C-UL: *File No. E211981
TÜV : File No. R50122733

*FRVL040-120F~FRVL070-120F and FRVL090-120F~FRVL130-120F C-UL In Process.

3. Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Max. Time to Trip	Max. Current	Max. Oper. Voltage	Max. Int. Voltage	Typ Power	Resistance	
	I _H , A	I _T , A	at 5xI _H ,s	I _{MAX} , A	V _{MAX} , V _{AC/DC}	V _{I-MAX} , V _{AC/DC}	P _d , W	R _{MIN}	R _{1MAX}
	Ohms	Ohms							
FRVL010-120F	0.10	0.20	10.0	2.0	120	135	0.84	3.00	7.50
FRVL017-120F	0.17	0.34	10.0	2.0	120	135	0.84	2.00	7.00
FRVL020-120F	0.20	0.40	9.0	2.0	120	135	1.08	1.83	4.40
FRVL025-120F	0.25	0.50	7.5	3.0	120	135	1.08	1.25	3.00
FRVL030-120F	0.30	0.60	8.5	3.0	120	135	1.44	0.88	2.10
FRVL040-120F	0.40	0.80	6.5	3.0	120	135	1.44	0.55	1.29
FRVL050-120F	0.50	1.00	6.0	3.0	120	135	1.56	0.50	1.17
FRVL065-120F	0.65	1.30	5.7	5.0	120	135	1.68	0.31	0.72
FRVL070-120F	0.75	1.50	6.3	5.0	120	135	1.80	0.25	0.60
FRVL075-120F	0.75	1.50	15.0	7.5	120	135	2.64	0.25	0.69
FRVL090-120F	0.90	1.80	7.2	5.0	120	135	1.80	0.20	0.47
FRVL100-120F	1.00	2.00	15.0	10.0	120	135	2.64	0.18	0.47
FRVL110-120F	1.10	2.20	8.2	8.0	120	135	2.28	0.15	0.38
FRVL125-120F	1.25	2.50	20.0	12.5	120	135	2.88	0.11	0.33
FRVL130-120F	1.35	2.70	9.6	10.0	120	135	2.64	0.12	0.30
FRVL135-120F	1.35	2.70	20.0	13.5	120	135	3.12	0.11	0.30
FRVL160-120F	1.60	3.20	11.4	12.0	120	135	3.12	0.09	0.22
FRVL185-120F	1.85	3.70	12.6	12.0	120	135	3.36	0.08	0.19
FRVL200-120F	2.00	4.20	36.0	20.0	120	135	4.32	0.08	0.21
FRVL250-120F	2.50	5.00	15.6	15.0	120	135	4.44	0.05	0.13
FRVL300-120F	3.00	6.00	19.8	17.0	120	135	4.56	0.04	0.10
FRVL375-120F	3.75	7.50	24.0	20.0	120	135	4.80	0.03	0.08

NOTE : Specification subject to change without notice.

2019/9/18



IH=Hold current-maximum current at which the device will not trip at 23°C still air.
 IT=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).
 Pd=Typical power dissipated from device when in tripped state in 23°C still air environment.
 RMIN=Minimum device resistance at 23°C.
 R1MAX=Maximum device resistance at 23°C, 1 hour after tripping .
 Physical specifications:
 Lead material: FRVL010-120F Tin plated copper clad steel, 24AWG.
 FRVL017-120F Tin plated copper, 24AWG.
 FRVL020-120F~FRVL070-120F and FRVL090-120F Tin plated copper, 22AWG.
 FRVL075-120F and FRVL100-120F~FRVL375-120F 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)

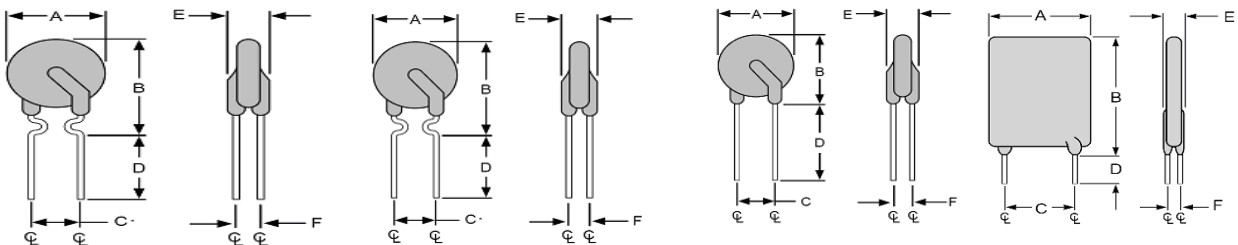


Fig.1
FRVL010-120F~FRVL017-120F
 Lead Size :24AWG
 Φ 0.51 mm Diameter

Fig.2
FRVL020-120F~FRVL090-120F
 Lead Size :22AWG
 Φ 0.65 mm Diameter

Fig.3
FRVL110-120F~FRVL375-120F
 Lead Size :20AWG
 Φ 0.81 mm Diameter

Fig.4
FRVL075-120F ~FRVL200-120F
 Lead Size : 20AWG
 Φ 0.81 mm Diameter

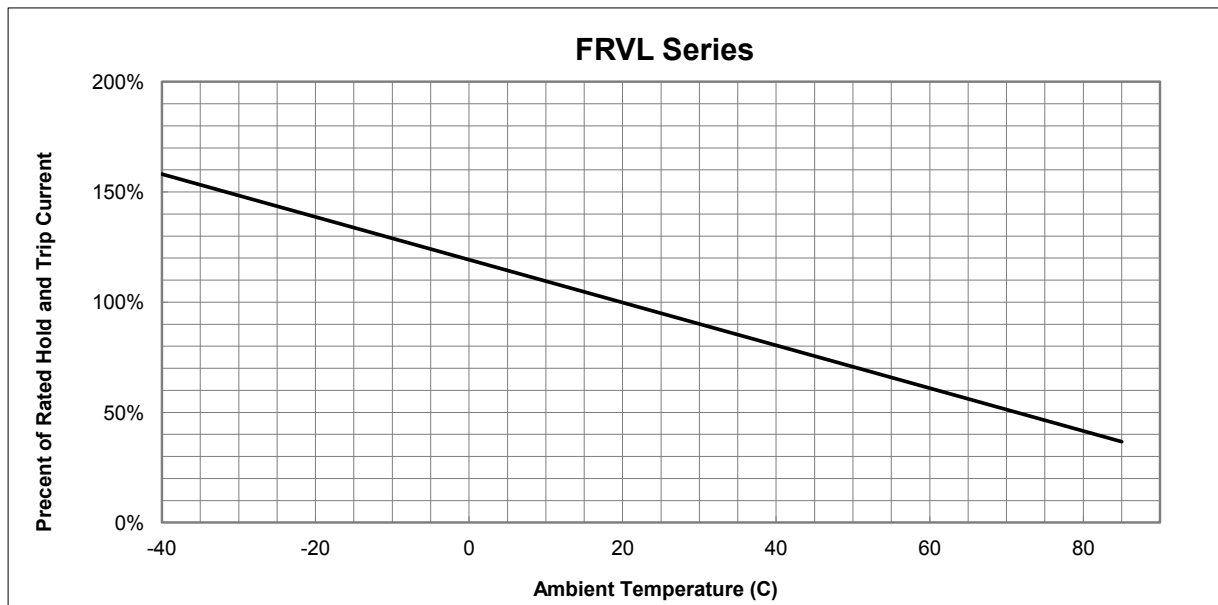
Part Number	Fig.	A	B	C	D	E	F
		Maximum	Maximum	Typical	Minimum	Maximum	Typical
FRVL010-120F	1	7.9	13.0	5.1	7.6	3.8	2.2
FRVL017-120F	1	7.9	13.0	5.1	7.6	3.8	2.2
FRVL020-120F	2	7.9	13.0	5.1	7.6	3.8	2.2
FRVL025-120F	2	7.9	13.0	5.1	7.6	3.8	2.2
FRVL030-120F	2	7.9	13.0	5.1	7.6	3.8	2.2
FRVL040-120F	2	8.2	14.2	5.1	7.6	3.8	2.2
FRVL050-120F	2	9.2	14.9	5.1	7.6	3.8	2.2
FRVL065-120F	2	9.7	14.9	5.1	7.6	3.8	2.2
FRVL070-120F	2	10.6	15.5	5.1	7.6	3.8	2.2
FRVL075-120F	4	10.9	17.0	5.1	7.6	4.1	2.2
FRVL090-120F	2	11.9	15.9	5.1	7.6	3.8	2.2
FRVL100-120F	4	11.5	20.1	5.1	7.6	4.1	2.2
FRVL110-120F	3	13.3	18.3	5.1	7.6	4.1	2.2
FRVL125-120F	4	14.0	21.7	5.1	7.6	4.1	2.2
FRVL130-120F	3	15.5	20.6	5.1	7.6	4.1	2.2
FRVL135-120F	4	16.3	21.7	5.1	7.6	4.1	2.2
FRVL160-120F	3	17.5	22.5	5.1	7.6	4.1	2.2

NOTE : Specification subject to change without notice.



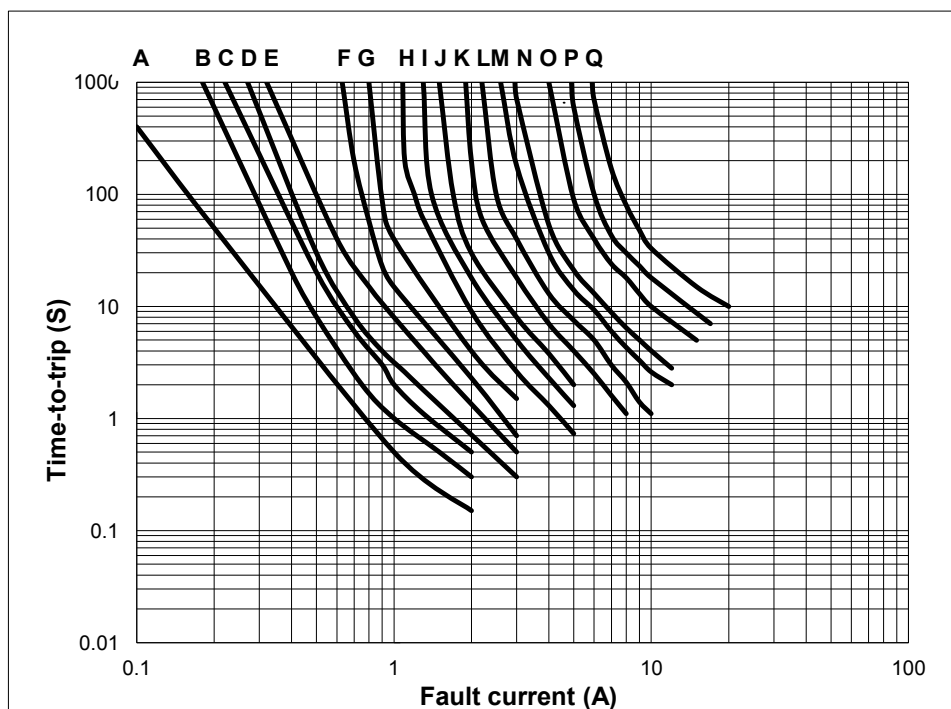
FRVL185-120F	3	19.9	24.9	5.1	7.6	4.1	2.2
FRVL200-120F	4	23.5	27.9	10.2	7.6	4.1	2.2
FRVL250-120F	3	22.5	27.5	10.2	7.6	4.1	2.2
FRVL300-120F	3	25.5	30.0	10.2	7.6	4.1	2.2
FRVL375-120F	3	29.5	34.0	10.2	7.6	4.1	2.2

5. Thermal Derating Curve



6. Typical Time-To-Trip at 23°C

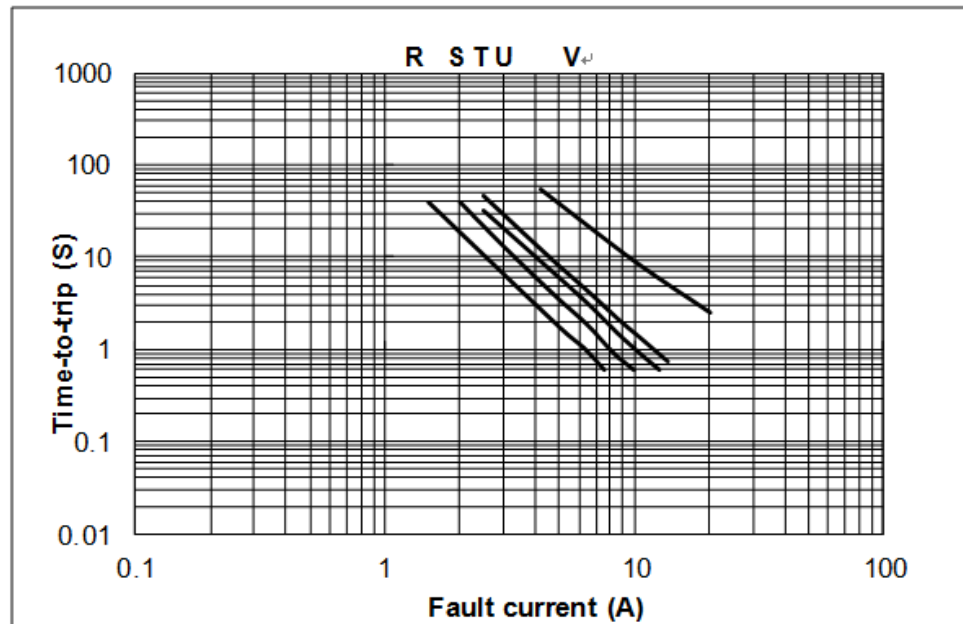
- A=FRVL010-120F
- B=FRVL017-120F
- C=FRVL020-120F
- D=FRVL025-120F
- E=FRVL030-120F
- F=FRVL040-120F
- G=FRVL050-120F
- H=FRVL065-120F
- I=FRVL070-120F
- J=FRVL090-120F
- K=FRVL110-120F
- L=FRVL130-120F
- M=FRVL160-120F
- N=FRVL185-120F
- O=FRVL250-120F
- P=FRVL300-120F
- Q=FRVL375-120F



NOTE : Specification subject to change without notice.



- R=FRVL075-120F
- S=FRVL100-120F
- T=FRVL125-120F
- U=FRVL135-120F
- V=FRVL200-120F



7. Material Specification

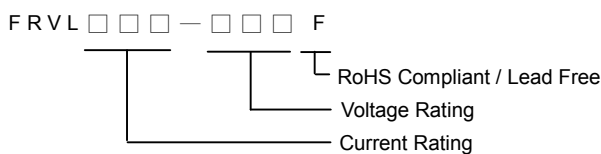
- Lead material : FRVL010-120F Tin plated copper clad steel, 24 AWG.
- FRVL017-120F Tin plated copper, 24 AWG.
- FRVL020-120F~FRVL070-120F and FRVL090-120F Tin plated copper, 22AWG.
- FRVL075-120F and FRVL100-120F~FRVL375-120F Tin plated copper, 20AWG.

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

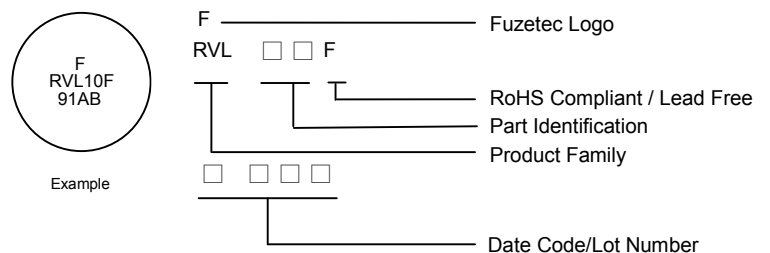
Insulating coating:Flame retardant epoxy, meets UL-94V-0 requirement

8. Part Numbering and Marking System

Part Numbering System



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.



NOTE : Specification subject to change without notice.



Radial Leaded PTC Resettable Fuse: FRV 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 265V_{AC/DC}**
- (d) **Operation Current: 0.05A~2.00A**
- (e) **Maximum Operating Voltage: 240V_{AC/DC}**
- (f) **Maximum Interrupt Voltage: 265V_{AC/DC}**
- (g) **Temperature Range : FRV005-240F~FRV055-240F -40°C to 85°C
FRV075-240F~FRV200-240F -20°C to 85°C**

2. Agency Recognition

UL: File No. E211981

C-UL: File No. E211981

TÜV: File No. R50087018

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/DC}	V _{I-MAX} , V _{AC/DC}	P _d , W	R _{MIN} Ohms	R _{1MAX} Ohms
FRV005-240F	0.05	0.12	15.0	1.0	240	265	0.70	18.50	65.00
FRV008-240F	0.08	0.19	15.0	1.2	240	265	0.80	7.40	26.00
FRV012-240F	0.12	0.30	15.0	1.2	240	265	1.00	3.00	12.00
FRV016-240F	0.16	0.37	15.0	2.0	240	265	1.40	2.50	7.80
FRV025-240F	0.25	0.56	18.5	3.5	240	265	1.50	1.30	3.80
FRV033-240F	0.33	0.74	21.0	4.5	240	265	1.70	0.83	2.60
FRV040-240F	0.40	0.90	24.0	5.5	240	265	2.00	0.60	1.90
FRV055-240F	0.55	1.25	26.0	7.0	240	265	3.40	0.45	1.45
FRV075-240F	0.75	1.50	18.0	7.5	240	265	2.60	0.32	0.84
FRV100-240F	1.00	2.00	21.0	10.0	240	265	2.90	0.22	0.58
FRV125-240F	1.25	2.50	23.0	12.5	240	265	3.30	0.17	0.44
FRV150-240F	1.50	3.00	23.0	15.0	240	265	3.70	0.12	0.32
FRV200-240F	2.00	4.00	28.0	20.0	240	265	4.50	0.09	0.22

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: FRV005-240F~FRV016-240F Tin plated copper clad steel, 24AWG.

FRV025-240F~FRV040-240F Tin plated copper, 22AWG.

FRV055-240F~FRV200-240F 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.

2019/9/17



4. Production Dimensions (millimeter)

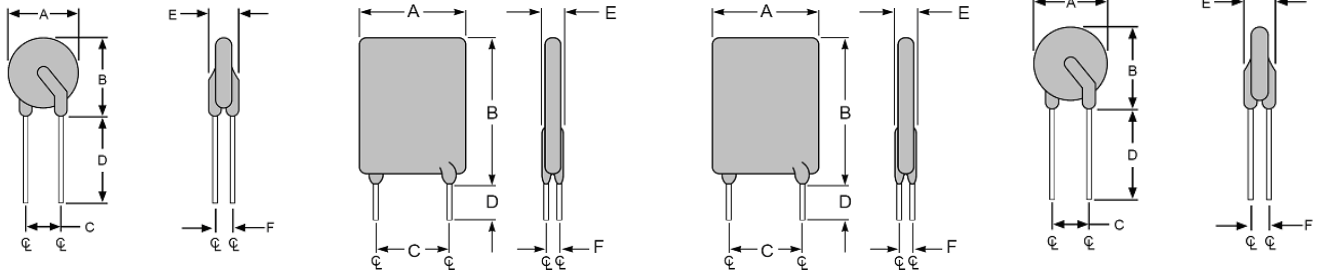


Fig.1
Lead Size: 24AWG
Φ 0.51 mm Diameter

Fig.2
Lead Size: 22AWG
Φ 0.65 mm Diameter

Fig.3
Lead Size: 20AWG
Φ 0.81 mm Diameter

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

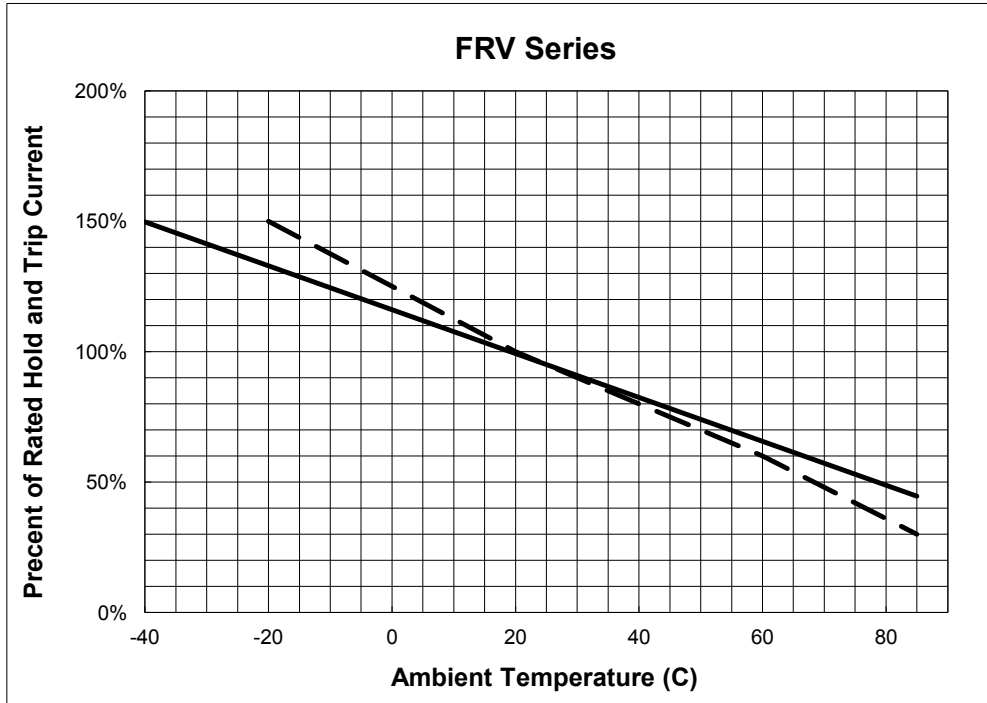
Part Number	Figure	A	B	C	D	E	F
		Maximum	Maximum	Typical	Minimum	Maximum	Typical
FRV005-240F	1	8.3	10.7	5.1	7.6	3.8	1.6
FRV008-240F	1	8.3	10.7	5.1	7.6	3.8	1.6
FRV012-240F	1	8.3	10.7	5.1	7.6	3.8	1.6
FRV016-240F	1	9.9	12.5	5.1	7.6	3.8	1.6
FRV025-240F	2	9.6	17.4	5.1	7.6	3.8	1.8
FRV033-240F	2	11.4	16.5	5.1	7.6	3.8	1.8
FRV040-240F	2	11.5	19.5	5.1	7.6	3.8	1.8
FRV055-240F	3	14.0	21.7	5.1	7.6	4.1	1.9
FRV075-240F	3	11.5	23.4	5.1	7.6	4.8	1.9
FRV100-240F	4	18.7	24.4	10.2	7.6	5.1	1.9
FRV125-240F	4	21.2	27.4	10.2	7.6	5.3	1.9
FRV150-240F	4	23.4	30.9	10.2	7.6	5.3	1.9
FRV200-240F	3	24.9	33.8	10.2	7.6	6.1	1.9

NOTE : Specification subject to change without notice.

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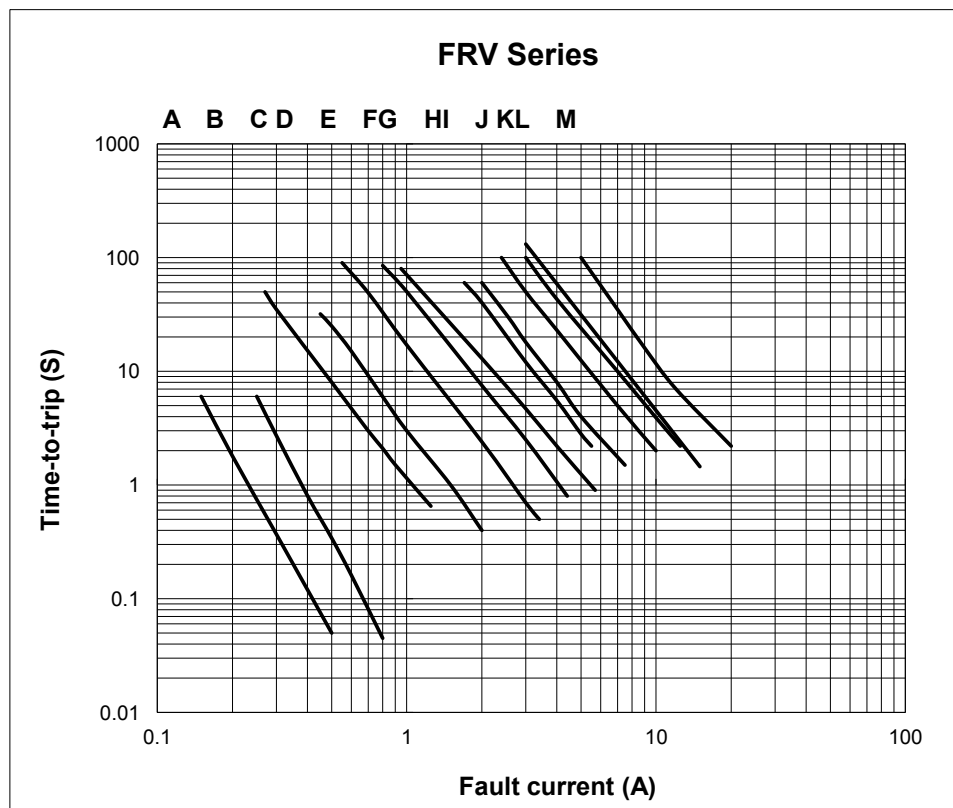
5. Thermal Derating Curve



A = FRV005-240F~
FRV055-240F
B = FRV075-240F ~
FRV200-240F

6. Typical Time-To-Trip at 23°C

- A= FRV005-240F
- B= FRV008-240F
- C= FRV012-240F
- D= FRV016-240F
- E= FRV025-240F
- F= FRV033-240F
- G= FRV040-240F
- H= FRV055-240F
- I= FRV075-240F
- J= FRV100-240F
- K= FRV125-240F
- L=FRV150-240F
- M= FRV200-240F



NOTE : Specification subject to change without notice.

2019/9/17

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	Product Specification and Approval Sheet	Version	A8	Page

7. Material Specification

Lead material : FRV005-240F~FRV016-240F Tin plated copper clad steel, 24AWG.

FRV025-240F~FRV040-240F Tin plated copper, 22AWG.

FRV055-240F~FRV200-240F Tin plated copper, 20AWG.

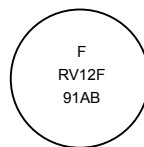
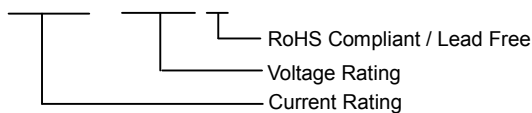
Soldering characteristics: MIL-STD-202, Method 208E.

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

8. Part Numbering and Marking System

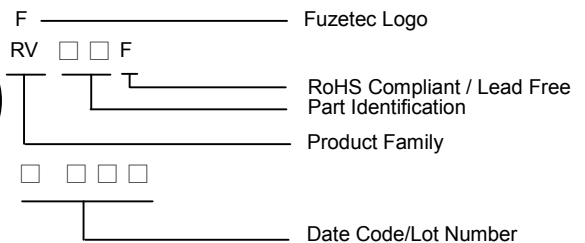
Part Numbering System

FRV □□□ - □□□ F



Example

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.



NOTE : Specification subject to change without notice.

2019/9/17