

 FUZETEC TECHNOLOGY CO., LTD.	NO.	PQ15-101E		
	Product Specification and Approval Sheet	Version	6	Page

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 36V**
- (d) **Operation Current: 500mA~2.50A**
- (e) **Maximum Voltage: 36V**
- (f) **Temperature Range : -40°C to 85°C**

2. Agency Recognition

UL: E211981

C-UL: E211981

3. Electrical Characteristics (23°C)

Part Number	Hold Current	Trip Current	Maximum Current	Rated Voltage	Typical Power	Resistance	
	I_H, A	I_T, A	I_{MAX}, A	V_{MAX}, V_{dc}	P_d, W	R_{MIN}	R_{1MAX}
						Ω	Ω
FRT050-33F	0.50	1.10	40	36	0.67	0.140	0.448
FRT075-33F	0.75	1.50	40	36	0.71	0.115	0.368
FRT090-33F	0.90	1.80	40	36	0.74	0.090	0.288
FRT120-33F	1.20	2.30	40	36	0.78	0.074	0.180
FRT135-33F	1.35	2.50	40	36	0.84	0.059	0.143
FRT160-33F	1.60	2.75	40	36	0.86	0.041	0.131
FRT190-33F	1.90	3.00	40	36	0.90	0.045	0.092
FRT220-33F	2.20	3.50	40	36	0.95	0.025	0.080
FRT250-33F	2.50	4.00	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, 24 AWG.

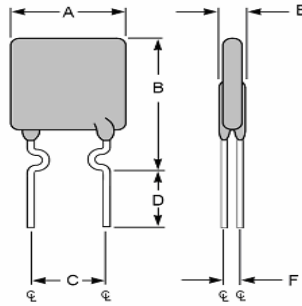
Soldering characteristics:MIL-STD-202, Method 208E.

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

NOTE : Specification subject to change without notice.



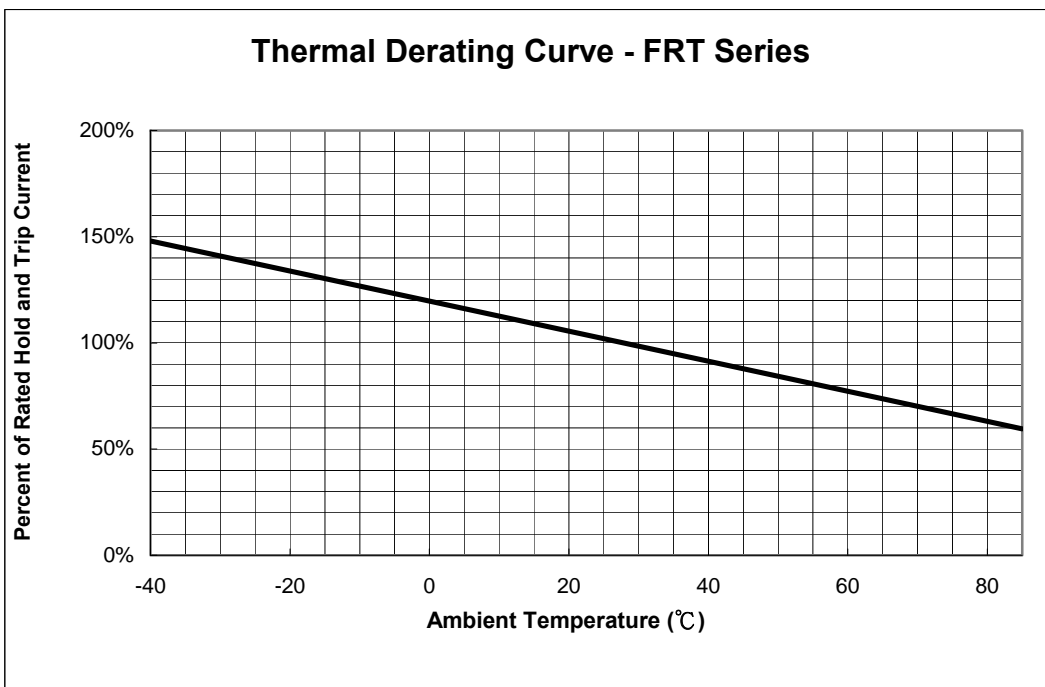
4. Production Dimensions (millimeter)



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

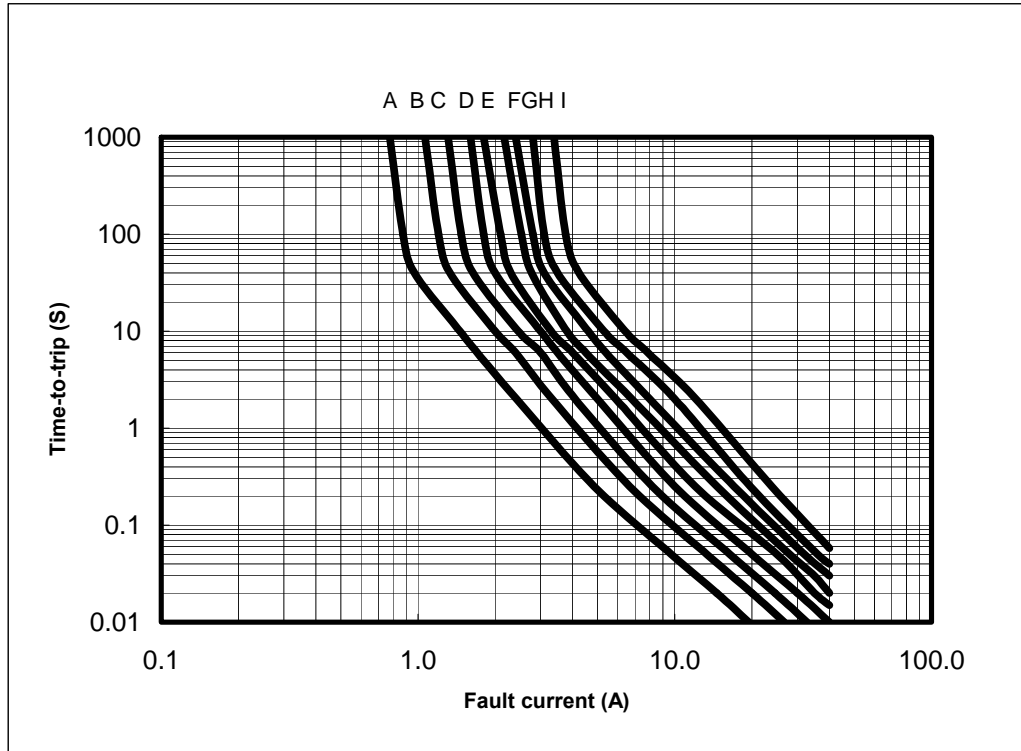


NOTE : Specification subject to change without notice.



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



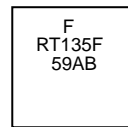
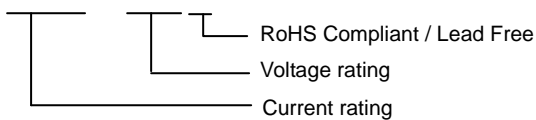
7. Material Specification

- Lead material : Tin plated copper, 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

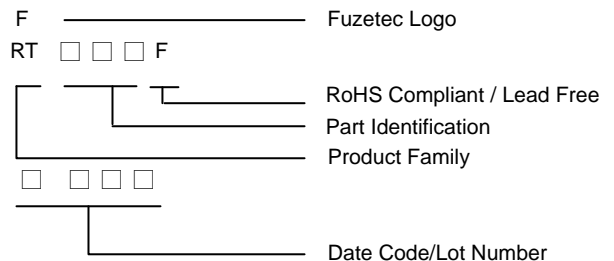
Part Numbering System

FRT □ □ □ - □ □ F



Example

Part Marking System



Warning: -Operation beyond the specified maximum ratings or improper use may result in damage and possible electrical arcing and/or flame.



- PPTC device are intended for occasional overcurrent protection. Application for repeated overcurrent condition and/or prolonged trip are not anticipated.
- Avoid contact of PPTC device with chemical solvent. Prolonged contact will damage the device performance.

NOTE : Specification subject to change without notice.