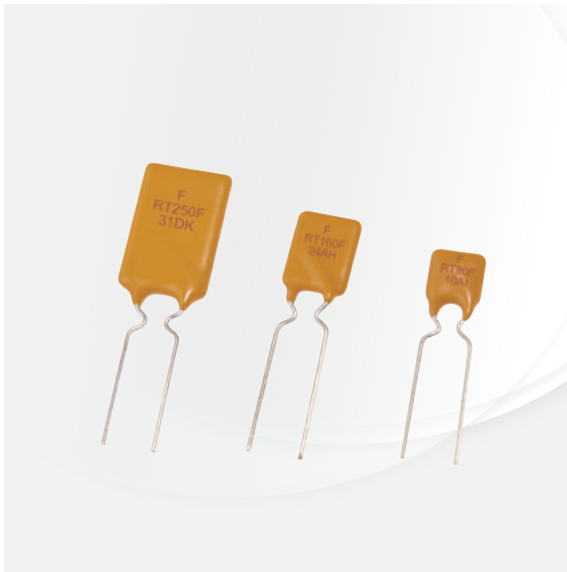


## FRT Series



### Application

IEEE 1394 Firewire, Computers & Consumer electronics

### Product Features

Fast trip time, Lower Trip-to-hold Ratio, Radial-leaded product ideal for up to 36V<sub>DC</sub>



### Operation Current

0.50A~2.50A

### Maximum Voltage

36V<sub>DC</sub>



### Temperature Range

-40°C to 85°C

### Agency Recognition

AGENCY	AGENCY FILE NUMBER
	UL(E211981)
	C-UL(E211981)
	TÜV (R50004084)



## Electrical Characteristics (23°C)

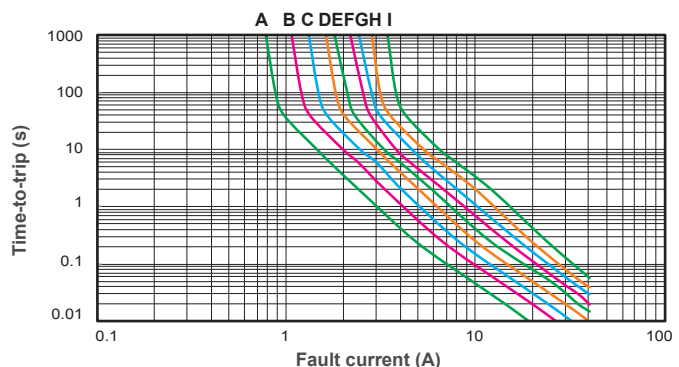
Part Number	Hold Current I <sub>H</sub> , A	Trip Current I <sub>T</sub> , A	Max. Time to trip at 5xI <sub>H</sub> , S	Max. Current I <sub>MAX</sub> , A	Rated Voltage V <sub>MAX</sub> , V <sub>DC</sub>	Typ. Power Pd, W	Resistance	
							R <sub>MIN</sub> Ohms	R <sub>1MAX</sub> Ohms
FRT050-33F	0.50	1.00	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

## Thermal Derating for PPTC Device at Various Ambient Temperatures

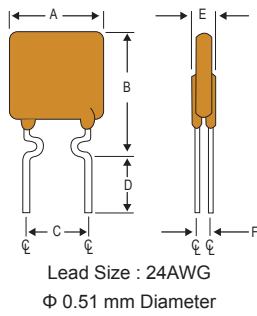
TEMPERATURE	-40°C	-20°C	0°C	23°C	30°C	40°C	50°C	60°C	70°C	85°C
DERATING %	148%	134%	120%	100%	98%	90%	84%	78%	70%	59%

## 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

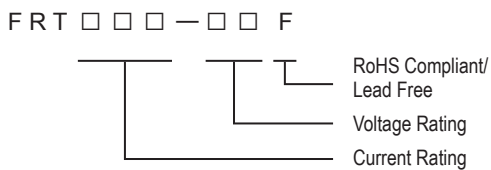


## FRT Product Dimensions (mm)

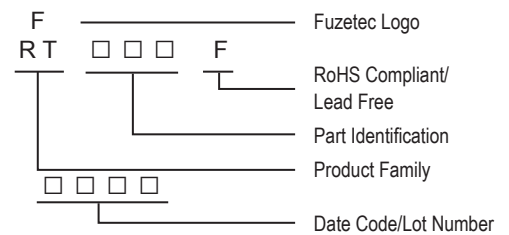


Part Number	A	B	C	D	E	F
	Max.	Max.	Typ.	Min.	Max.	Typ.
FRT050-33F	7.4	12.2	5.1	7.6	3.0	1.1
FRT075-33F	7.4	12.2	5.1	7.6	3.0	1.1
FRT090-33F	7.4	12.2	5.1	7.6	3.0	1.1
FRT120-33F	7.4	12.2	5.1	7.6	3.0	1.1
FRT135-33F	7.4	14.2	5.1	7.6	3.0	1.1
FRT160-33F	7.4	14.0	5.1	7.6	3.0	1.1
FRT190-33F	9.0	13.5	5.1	7.6	3.0	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

## Part Numbering System



## Part Marking System



## Package Information

Part Number	Standard Package
FRT050-33F~FRT250-33F	: 500Pcs/Bag, 3.0K Reel/Tape

## 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.

### 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.