

# Radial Leaded PTC FRX Series



**FUZETEC**



**Application:**

Wide variety of electronic equipment

**Product Features:**

Low hold current, Solid state

Radial-leaded product ideal for up to 60V

**Operation Current:** 100mA~3.75A

**Maximum Voltage:** 60V

**Temperature Range:** -40°C to 85°C

**Agency Approvals:** UL(E211981),

C-UL(E211981),

TÜV(R3-50004084)

**Electrical Characteristics(23°C)**

Part Number	Hold Current	Trip Current	Max. Time to Trip	Maximum Current	Rated Voltage	Typical Power	Resistance Tolerance	
	I <sub>H</sub> ,A	I <sub>T</sub> ,A	at 5xI <sub>H</sub>	I <sub>MAX</sub> ,A	V <sub>MAX</sub> ,V <sub>dc</sub>	P <sub>d</sub> , W	R <sub>MIN</sub>	R <sub>1MAX</sub>
							Ω	Ω
FRX010-60	0.10	0.20	4.0	40	60	0.38	2.50	7.50
FRX017-60	0.17	0.34	3.0	40	60	0.48	2.00	7.00
FRX020-60	0.20	0.40	2.2	40	60	0.41	1.83	4.40
FRX025-60	0.25	0.50	2.5	40	60	0.45	1.25	3.00
FRX030-60	0.30	0.60	3.0	40	60	0.49	0.88	2.10
FRX040-60	0.40	0.80	3.8	40	60	0.56	0.55	1.29
FRX050-60	0.50	1.00	4.0	40	60	0.77	0.50	1.17
FRX065-60	0.65	1.30	5.3	40	60	0.88	0.31	0.72
FRX075-60	0.75	1.50	6.3	40	60	0.92	0.25	0.60
FRX090-60	0.90	1.80	7.2	40	60	0.99	0.20	0.47
FRX110-60	1.10	2.20	8.2	40	60	1.50	0.15	0.38
FRX135-60	1.35	2.70	9.6	40	60	1.70	0.12	0.30
FRX160-60	1.60	3.20	11.4	40	60	1.90	0.09	0.22
FRX185-60	1.85	3.70	12.6	40	60	2.10	0.08	0.19
FRX250-60	2.50	5.00	15.6	40	60	2.50	0.05	0.13
FRX300-60	3.00	6.00	19.8	40	60	2.80	0.04	0.10
FRX375-60	3.75	7.50	24.0	40	60	3.20	0.03	0.08

I<sub>H</sub>=Hold current-maximum current at which the device will not trip at 23°C still air.  
 I<sub>T</sub>=Trip current-minimum current at which the device will always trip at 23°C still air.  
 V<sub>MAX</sub>=Maximum voltage device can withstand without damage at its rated current.  
 I<sub>MAX</sub>= Maximum fault current device can withstand without damage at rated voltage (V max).  
 P<sub>d</sub>=Typical power dissipated from device when in the tripped state in 23°C still air environment.  
 R<sub>MIN</sub>=Minimum device resistance at 23°C.  
 R<sub>1MAX</sub>=Maximum device resistance at 23°C, 1 hour after tripping .  
 Physical specifications:  
 Lead material: FRX010~FRX090 Tin plated copper,24 AWG.  
 FRX110~FRX375 Tin plated copper,20 AWG.  
 Soldering characteristics:MIL-STD-202, Method 208E.  
 Insulating coating:Flame retardant epoxy ,meet UL-94V-O requirement.

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## FRX Product Dimensions (Millimeters)

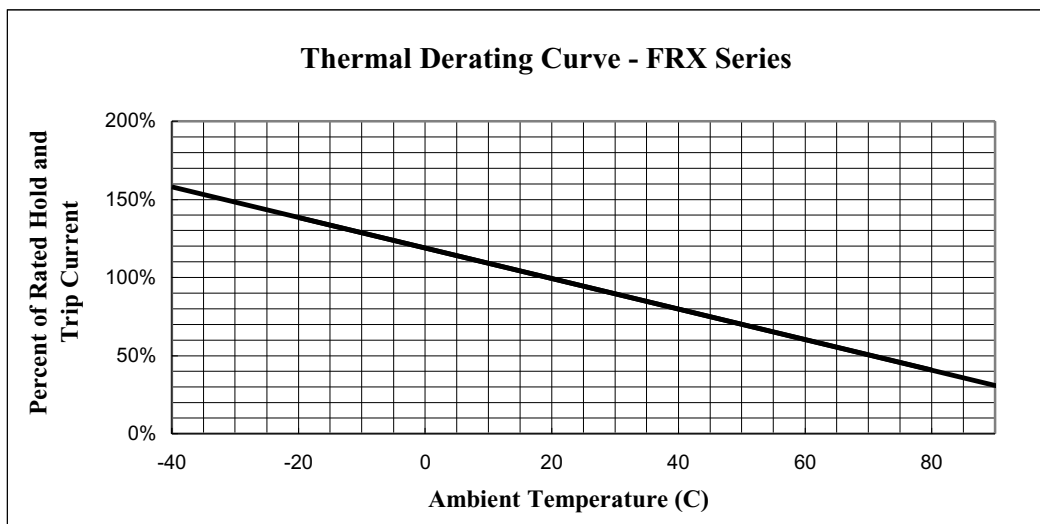


FRX 010-60 ~ FRX 090-60  
Lead Size :24AWG,  
Φ 0.51 mm Diameter

FRX 110-60 ~ FRX 375-60  
Lead Size : 20AWG,  
Φ 0.81 mm Diameter

Part Number	A	B	C	D	E	F
	Maximum	Maximum	Typical	Minimum	Maximum	Typical
FRX-010-060	7.4	12.7	5.1	7.6	3.1	1.1
FRX-017-060	7.4	12.7	5.1	7.6	3.1	1.1
FRX-020-060	7.4	12.7	5.1	7.6	3.1	1.1
FRX-025-060	7.4	12.7	5.1	7.6	3.1	1.1
FRX-030-060	7.4	13.0	5.1	7.6	3.1	1.1
FRX-040-060	7.6	13.5	5.1	7.6	3.1	1.1
FRX-050-060	7.9	13.7	5.1	7.6	3.1	1.1
FRX-065-060	9.7	14.5	5.1	7.6	3.1	1.1
FRX-075-060	10.4	15.2	5.1	7.6	3.1	1.1
FRX-090-060	11.7	15.8	5.1	7.6	3.1	1.1
FRX-110-060	13.0	18.0	5.1	7.6	3.1	1.4
FRX-135-060	14.5	19.6	5.1	7.6	3.1	1.4
FRX-160-060	16.3	21.3	5.1	7.6	3.1	1.4
FRX-185-060	17.8	22.9	5.1	7.6	3.1	1.4
FRX-250-060	21.3	26.4	10.2	7.6	3.1	1.4
FRX-300-060	24.9	30.0	10.2	7.6	3.1	1.4
FRX-375-060	28.5	33.5	10.2	7.6	3.1	1.4

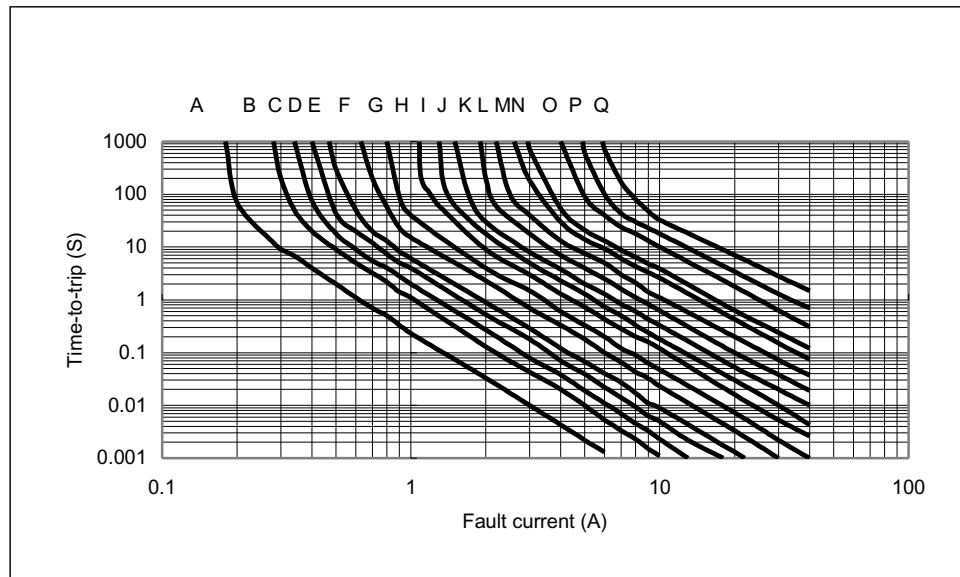
## Thermal Derating Curve



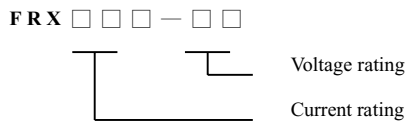


## Typical Time-To-Trip at 23°C

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

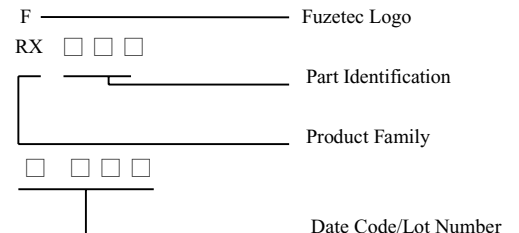


## Part Numbering System



Example

## Part Marking System



## Standard Package

P/N	Pcs /Bag	Reel/Tape
FRX-010-60	500	3K
FRX-017-60	500	3K
FRX-020-60	500	3K
FRX-025-60	500	3K
FRX-030-60	500	3K
FRX-040-60	500	3K
FRX-050-60	500	3K
FRX-065-60	300	3K
FRX-075-60	300	3K

P/N	Pcs /Bag	Reel/Tape
FRX-090-60	300	3K
FRX-110-60	300	1.5K
FRX-135-60	200	1.5K
FRX-160-60	200	1.5K
FRX-185-60	200	1.5K
FRX-250-60	100	-----
FRX-300-60	100	-----
FRX-375-60	100	-----