

SINLOON®

PTC 高分子正溫度系數可覆式保險絲

FRX Series

Current Range: 0.05A ~ 3.75A

Radial Leaded PTC Resettable Fuse

Application:
Wide variety of electronic equipment

Feature:
Low hold current, Solid state,
Radial-leaded product ideal for up to 60V_{DC}

Rated:
Operation Current: 0.05A ~ 3.75A
Maximum Voltage: 60V_{DC}
Temperature Range: -40°C to 85°C

Ordering Information

Example: FRX005-60F

Part No.	Current	Voltage	F
FRX	005(0.05A) 050 (0.5A) 110 (1.1A)	60V	Lead Free RoHS

Approval



Figure:



Part Marking System

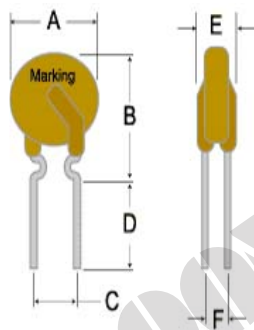
Example:
FRX30F Value part number
22AC Data code/Lot number



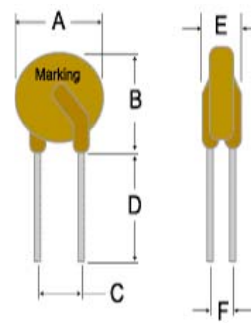
Dimension

Unit: mm

Part Number	A Maximum	B Maximum	C Typical	D Minimum	E Maximum	F 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	13	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	18	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	10.2	7.6	3.1	1.4
FRX375-60F	28.5	33.5	10.2	7.6	3.1	1.4



FRX005-60 - FRX090-60
Lead size: Tin copper 24AWG, Φ0.51mm Dim.



FRX110-60 - FRX375-60
Lead size: Tin copper 20AWG, Φ0.81mm Dim.

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Electrical Characteristics (23°C)

Part Number	Hold	Trip	Max. Time	Maximum	Rated	Typical	Resistance	
	Current	Current	to Trip	Current	Voltage	Power	RMIN	R1MAX
	IH, A	IT, A	at 5xIH, S	IMAX, A	VMAX, Vdc	Pd, W	ohms	ohms
FRX005-60F	0.05	0.1	5	40	60	0.26	7.3	20
FRX010-60F	0.1	0.2	4	40	60	0.38	2.5	7.5
FRX017-60F	0.17	0.34	3	40	60	0.48	2	7
FRX020-60F	0.2	0.4	2.2	40	60	0.41	1.83	4.4
FRX025-60F	0.25	0.5	2.5	40	60	0.45	1.25	3
FRX030-60F	0.3	0.6	3	40	60	0.49	0.88	2.1
FRX040-60F	0.4	0.8	3.8	40	60	0.56	0.55	1.29
FRX050-60F	0.5	1	4	40	60	0.77	0.5	1.17
FRX065-60F	0.65	1.3	5.3	40	60	0.88	0.31	0.72
FRX075-60F	0.75	1.5	6.3	40	60	0.92	0.25	0.6
FRX090-60F	0.9	1.8	7.2	40	60	0.99	0.2	0.47
FRX110-60F	1.1	2.2	8.2	40	60	22AC	0.15	0.38
FRX135-60F	1.35	2.7	9.6	40	60	1.7	0.12	0.3
FRX160-60F	1.6	3.2	11.4	40	60	1.9	0.09	0.22
FRX185-60F	1.85	3.7	12.6	40	60	2.1	0.08	0.19
FRX250-60F	2.5	5	15.6	40	60	2.5	0.05	0.13
FRX300-60F	3	6	19.8	40	60	2.8	0.04	0.1
FRX375-60F	3.75	7.5	24	40	60	3.2	0.03	0.08

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 the 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: FRX005~FRX090 Tin plated copper, 24 AWG. FRX110~FRX375 Tin plated copper, 20 AWG.

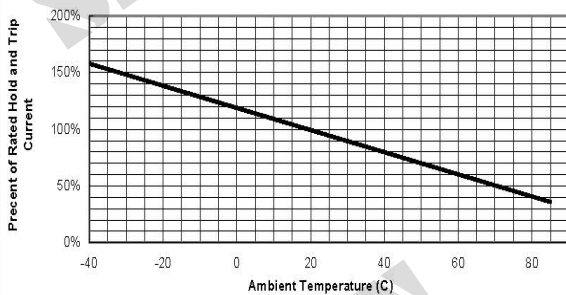
Soldering characteristics: MIL-STD-202, Method 208E.

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

*NOTE:UL, C-UL and TÜV are only applied for FRX010-60F~FRX375-60F

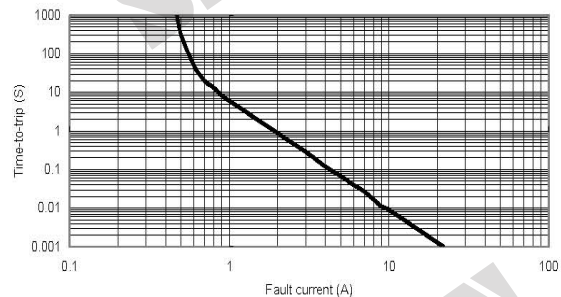
Thermal Derating Curve

Thermal Derating Curve - FRX 030-60F



Thermal Time-To-Trip at 23°C

FRX030-60F



Note: Specification subject to change without notice.

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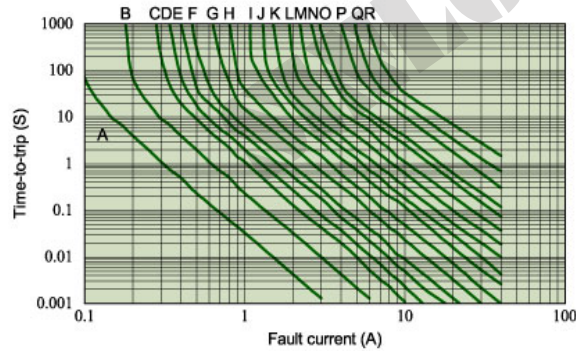
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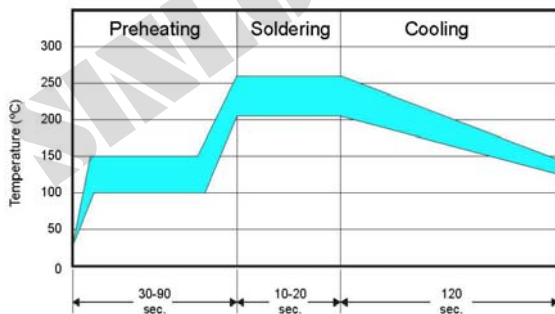
Typical Time-to-Trip at 23 °C

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



Solder reflow

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



Package Information

P/N	Pcs /Bag	Reel/Tape
FRX005-60F	500	3K
FRX010-60F	500	3K
FRX017-60F	500	3K
FRX020-60F	500	3K
FRX025-60F	500	3K
FRX030-60F	500	3K
FRX040-60F	500	3K
FRX050-60F	500	3K
FRX065-60F	300	3K

P/N	Pcs /Bag	Reel/Tape
FRX075-60F	300	3K
FRX090-60F	300	3K
FRX110-60F	300	1.5K
FRX135-60F	200	1.5K
FRX160-60F	200	1.5K
FRX185-60F	200	1.5K
FRX250-60F	100	1K
FRX300-60F	100	1K
FRX375-60F	100	1K



WARNING:

1. Operation beyond the specified maximum ratings or improper use may result in damage and possible electrical arcing and/or flame.
2. PPTC device are intended for occasional overcurrent protection. Application for repeated overcurrent condition and/or prolonged trip are not anticipated.
3. Avoid contact of PPTC device with chemical solvent. Prolonged contact will damage the device performance.

※ 美隆電子產品規格特性參數的改變和更新不會另行通知。
※ Mayloon characteristic parameters of electronic product specification changes or updates without prior notice .