

POLYRESET

Polymer PTC Resettable Fuse Radial Leaded Type

F (30V) series

(1) Features

1. Overcurrent and overtemperature protection device has a low resistance and high hold current.
2. Remotely resettable.
3. High hold currents.
4. Latching(noncycling) operation.
5. Rugged, monolithic construction.

(2) Applications

1. General electronics.
2. Telephone line protection.
3. Computers & peripherals.
4. Automotive applications.
5. Industrial control circuits.

(3) Ordering Information

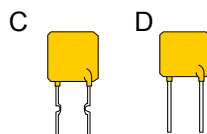
PR - F A - 090 - B
 (1) (2) (3) (4) (5)

(1) Polyreset Product Designator

(2) Voltage Code

F : 30V

(3) Lead Type Code



(4) Hold current

(5) Packing

B : Bulk Packing

T : Tape and Reel

A : Ammo-Pack

(4) Shape and Dimension

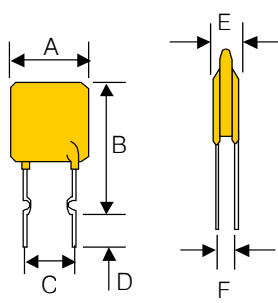


Fig.1

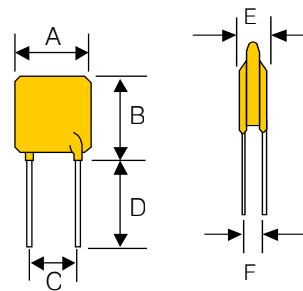


Fig.2

Unit : millimeters(inches)

Part number	A max.	B max.	C typ.	D min.	E max.	F typ.	Figure
PR-FC-090-□	7.4 (0.29)	12.2 (0.48)	5.1 (0.20)	7.6 (0.30)	3.0 (0.12)	0.8 (0.03)	1
PR-FC-110-□	7.4 (0.29)	14.2 (0.56)	5.1 (0.20)	7.6 (0.30)	3.0 (0.12)	0.8 (0.03)	1
PR-FC-135-□	8.9 (0.35)	13.5 (0.53)	5.1 (0.20)	7.6 (0.30)	3.0 (0.12)	0.8 (0.03)	1
PR-FC-160-□	8.9 (0.35)	15.2 (0.60)	5.1 (0.20)	7.6 (0.30)	3.0 (0.12)	0.8 (0.03)	1
PR-FC-185-□	10.2 (0.40)	15.7 (0.62)	5.1 (0.20)	7.6 (0.30)	3.0 (0.12)	0.8 (0.03)	1
PR-FC-250-□	11.4 (0.45)	18.3 (0.72)	5.1 (0.20)	7.6 (0.30)	3.0 (0.12)	0.8 (0.03)	1
PR-FD-300-□	11.4 (0.45)	17.3 (0.68)	5.1 (0.20)	7.6 (0.30)	3.0 (0.12)	1.2 (0.05)	2
PR-FD-400-□	14.0 (0.55)	20.1 (0.79)	5.1 (0.20)	7.6 (0.30)	3.0 (0.12)	1.2 (0.05)	2
PR-FD-500-□	14.0 (0.55)	24.9 (0.98)	10.2 (0.40)	7.6 (0.30)	3.0 (0.12)	1.2 (0.05)	2
PR-FD-600-□	16.5 (0.65)	24.9 (0.98)	10.2 (0.40)	7.6 (0.30)	3.0 (0.12)	1.2 (0.05)	2
PR-FD-700-□	19.1 (0.75)	26.7 (1.05)	10.2 (0.40)	7.6 (0.30)	3.0 (0.12)	1.2 (0.05)	2
PR-FD-800-□	21.6 (0.85)	29.2 (1.15)	10.2 (0.40)	7.6 (0.30)	3.0 (0.12)	1.2 (0.05)	2
PR-FD-900-□	24.1 (0.95)	29.7 (1.17)	10.2 (0.40)	7.6 (0.30)	3.0 (0.12)	1.2 (0.05)	2

(5) Specifications

◆ Electrical Characteristics

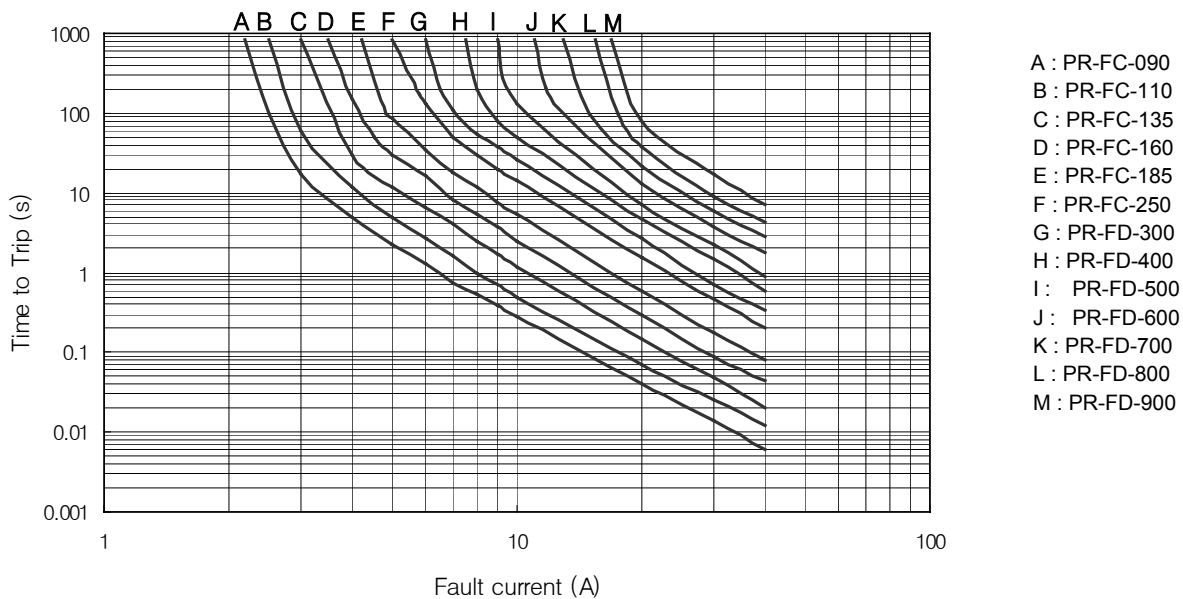
Part number	V _{max} (V)	I _H (A)	I _T (A)	Max.time to trip(s) @5×I _H	P _d (W)	Initial resistance		Post trip resistance
						R _{min} (Ω)	R _{max} (Ω)	R1 max (Ω)
PR-FC-090-□	30	0.90	1.80	5.9	0.6	0.070	0.12	0.22
PR-FC-110-□	30	1.10	2.20	6.6	0.7	0.050	0.10	0.17
PR-FC-135-□	30	1.35	2.70	7.3	0.8	0.040	0.08	0.13
PR-FC-160-□	30	1.60	3.20	8.0	0.9	0.030	0.07	0.11
PR-FC-185-□	30	1.85	3.70	8.7	1.0	0.030	0.06	0.09
PR-FC-250-□	30	2.50	5.00	10.3	1.2	0.020	0.04	0.07
PR-FD-300-□	30	3.00	6.00	10.8	2.0	0.020	0.05	0.08
PR-FD-400-□	30	4.00	8.00	12.7	2.5	0.010	0.03	0.05
PR-FD-500-□	30	5.00	10.00	14.5	3.0	0.010	0.03	0.05
PR-FD-600-□	30	6.00	12.00	16.0	3.5	0.005	0.02	0.04
PR-FD-700-□	30	7.00	14.00	17.5	3.8	0.005	0.02	0.03
PR-FD-800-□	30	8.00	16.00	18.8	4.0	0.005	0.02	0.02
PR-FD-900-□	30	9.00	18.00	20.0	4.2	0.005	0.01	0.02

* Tested at 40A

◆ Hold current vs. Temperature

Part number	Maximum ambient operating temperature (°C)								
	-40	-20	0	20	40	50	60	70	85
PR-FC-090-□	1.31	1.17	1.04	0.90	0.75	0.69	0.61	0.55	0.47
PR-FC-110-□	1.60	1.43	1.27	1.10	0.91	0.85	0.75	0.67	0.57
PR-FC-135-□	1.96	1.76	1.55	1.35	1.12	1.04	0.92	0.82	0.70
PR-FC-160-□	2.32	2.08	1.84	1.60	1.33	1.23	1.09	0.98	0.83
PR-FC-185-□	2.68	2.41	2.13	1.85	1.54	1.42	1.26	1.13	0.96
PR-FC-250-□	3.63	3.25	2.88	2.50	2.08	1.93	1.70	1.53	1.30
PR-FD-300-□	4.35	3.90	3.45	3.00	2.49	2.31	2.04	1.83	1.56
PR-FD-400-□	5.80	5.20	4.60	4.00	3.32	3.08	2.72	2.44	2.08
PR-FD-500-□	7.25	6.50	5.75	5.00	4.15	3.85	3.40	3.05	2.60
PR-FD-600-□	8.70	7.80	6.90	6.00	4.98	4.62	4.08	3.66	3.12
PR-FD-700-□	10.15	9.10	8.05	7.00	5.81	5.39	4.76	4.27	3.64
PR-FD-800-□	11.60	10.40	9.20	8.00	6.64	6.16	5.44	4.88	4.16
PR-FD-900-□	13.05	11.70	10.35	9.00	7.47	6.93	6.12	5.49	4.68

◆ Typical time to trip at 20°C (PR-F series)



(6) Physical Characteristics

Lead Material	PR-FC-090~250 : 24 AWG Sn-plated Cu clad steel (0.020in/0.51mm)
	PR-FD-300~900 : 20 AWG Sn-plated Cu (0.032in/0.81mm)
Insulating Material	Cured, flame-retardant epoxy polymer, meets UL 94V-O requirements

(7) Terms and Description

1. **Hold current (I_H)** : maximum current at which the device will not trip at 20°C
2. **Trip current (I_T)** : minimum current at which the device will always trip at 20°C ($2 \times I_H$)
3. **Typical power dissipation (P_d)** : typical amount of power dissipation by the device when in tripped state in 20°C still air environment

4. R_{min} : Minimum device resistance at 20°C prior to tripping
5. R_{max} : Maximum device resistance at 20°C prior to tripping
6. R_{1max} : Maximum device resistance at 20°C measured 1 hour post trip
7. I_{max} : Maximum interrupt current.
8. V_{max} : Maximum operating voltage.

(8) Packaging Information

Specification	Bulk Bag Quantity	Tape and Reel Quantity	AMMO Pack	Standard Package (B / T / A)
PR-FC-090-□	500	3000	2000	10000/ 15000/ 10000
PR-FC-110-□	500	3000	2000	10000/ 15000/ 10000
PR-FC-135-□	500	3000	2000	10000/ 15000/ 10000
PR-FC-160-□	500	3000	2000	10000/ 15000/ 10000
PR-FC-185-□	500	3000	2000	10000/ 15000/ 10000
PR-FC-250-□	500	3000	2000	10000/ 15000/ 10000
PR-FD-300-□	500	2500	1000	10000/ 12500/ 5000
PR-FD-400-□	500	1500	1000	10000/ 7500/ 5000
PR-FD-500-□	250	1500	1000	5000/ 7500/ 5000
PR-FD-600-□	250	-	1000	5000/ - / 5000
PR-FD-700-□	250	-	-	5000/ - / -
PR-FD-800-□	250	-	-	5000/ - / -
PR-FD-900-□	250	-	-	5000/ - / -

(9)Tape and Reel Specification

Devices taped using EIA468-B/IEC286-2 standards. See table below and Figures 1 and 2 for details.

Dimension Description		IEC Mark	EIA Mark	Dimensions	
				Dim.(mm)	Tol.(mm)
Carrier tape width		W	W	18	-0.5/+1.0
Hold down tape width		W ₀	W ₄	11	min.
Top distance between tape edges		W ₂	W ₆	3	max.
Sprocket hole position		W ₁	W ₅	9	-0.5/+0.75
Sprocket hole diameter*		D ₀	D ₀	4	±0.2
Abscissa to plane (straight lead)		H	H	18.5	±2.5
Abscissa to plane (kinked lead)		H ₀	H ₀	16	±0.5
Abscissa to top	PR-FC-090 ~ PR-FD-300	H ₁	H ₁	32.2	max.
	PR-FD-400 ~ PR-FD-900	H ₁	H ₁	45.0	max.
Overall width with lead protrusion	PR-FC-090 ~ PR-FD-300	-	C ₁	43.2	max.
	PR-FD-400 ~ PR-FD-900	-	C ₁	56	max.
Overall width without lead protrusion	PR-FC-090 ~ PR-FD-300	-	C ₂	42.5	max.
	PR-FD-400 ~ PR-FD-900	-	C ₂	56	max.
Lead protrusion		l ₁	L ₁	1.0	max.
Protrusion of cut out		L	L	11	max.
Protrusion beyond hold down tape		l ₂	l ₂	Not specified	
Sprocket hole pitch		P ₀	P ₀	12.7	±0.3
Pitch tolerance		-	-	20 consec.	±1
Device pitch	PR-FC-090 ~ PR-FD-300	-	-	12.7	±0.3
Device pitch	PR-FD-400 ~ PR-FD-900	-	-	25.4	±0.6
Tape Thickness		t	t	0.9	max.
Overall tape and lead thickness	PR-FC-090 ~ PR-FC-250	t ₁	t ₁	1.5	max.
	PR-FD-300 ~ PR-FD-900	t ₁	t ₁	2.3	max.
Splice sprocket hole alignment		-	-	0	±0.3
Body lateral deviation		Δh	Δh	0	±1.0
Body tape plane deviation		Δp	Δp	0	±1.3
Ordinate to adjacent component lead*	PR-FC-090 ~ PR-FD-300	ΔP ₁	P ₁	3.81	±0.7
	PR-FD-400 ~ PR-FD-900	ΔP ₁	P ₁	7.62	±0.7
Lead spacing*	PR-FC-090 ~ PR-FD-400	F	F	5.08	+0.75/-0.5
	PR-FD-500 ~ PR-FD-900	F	F	10.2	+0.75/-0.5
Reel width	PR-FC-090 ~ PR-FD-400	w	w ₂	56	max.
	PR-FD-500 ~ PR-FD-900	w	w ₂	63.5	max.
Reel diameter		d	a	370	max.
Space between flanges less device*		-	w ₁	4.75	±3.25
Arbor hole diameter		f	c	26	±12.0
Core diameter		h	n	91	max.
Box		-	-	64/372/362	max.
Consecutive missing places		-	-	none	-
Empty places per reel		-	-	0.1%	max.

*Differs from EIA specification.

EIA Referenced Taped Component Dimension

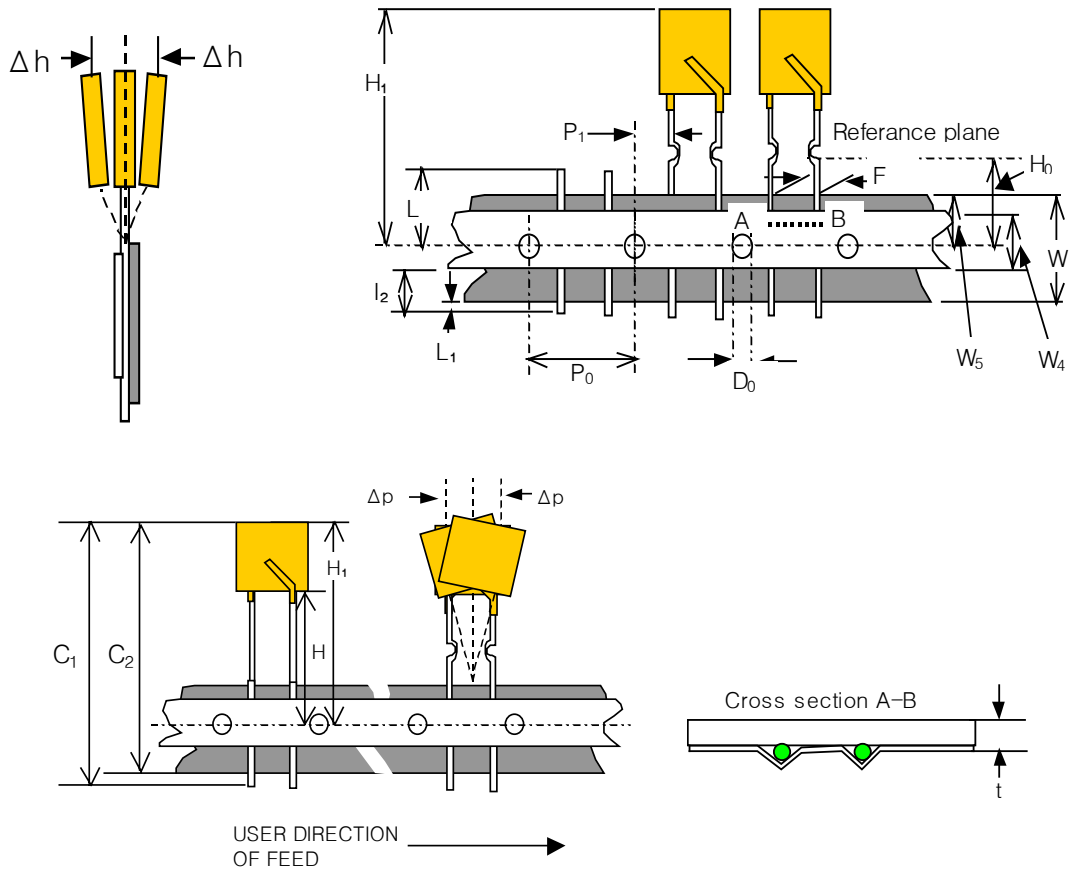


Figure 1

Reel Dimension

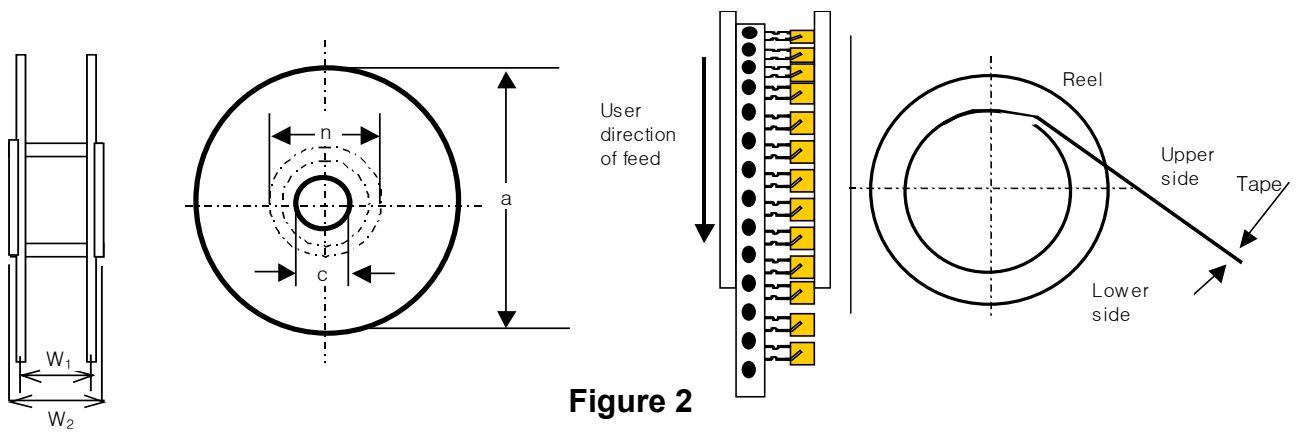


Figure 2