

## STRAP Series



### Application

Rechargeable battery packs, Lithium cell and battery packs

### Product Features

Low profile, Solid state



### Operation Current

FVL Series 1.70A~2.30A ; FVT Series 1.10A~2.40A  
FLR Series 1.90A~7.30A ; FSR Series 1.20A~4.20A

### Maximum Voltage

12V ~ 30V<sub>DC</sub>



### Temperature Range

-40°C to 85°C

### Agency Recognition

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



SVHC Compliant

## 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	Rated Voltage V <sub>MAX</sub> , V <sub>DC</sub>	Max. Current I <sub>MAX</sub> , A	Typ. Power Pd, W	Resistance		
							R <sub>MIN</sub>	R <sub>MAX</sub>	R <sub>1MAX</sub>
							Ohms	Ohms	Ohms
FVL170F	1.70	4.10	5.0	12	100	1.4	0.018	0.032	0.064
FVL175F	1.75	4.20	5.0	12	100	1.4	0.017	0.031	0.062
FVL230F	2.30	5.00	5.0	12	100	1.4	0.012	0.018	0.036
FVT110F	1.10	2.70	5.0	16	100	0.7	0.038	0.070	0.140
FVT170F	1.70	3.40	5.0	16	100	0.7	0.030	0.052	0.105
FVT175F	1.75	3.60	5.0	16	100	0.8	0.029	0.051	0.102
FVT200F	2.00	4.70	5.0	16	100	0.9	0.022	0.039	0.078
FVT210GF	2.10	4.70	5.0	16	100	1.2	0.018	0.030	0.060
FVT240F	2.40	5.90	5.0	16	100	1.0	0.014	0.026	0.052
FSR120F	1.20	2.70	5.0	15	100	1.2	0.085	0.160	0.220
FSR175F	1.75	3.80	5.0	15	100	1.5	0.050	0.090	0.120
FSR200F	2.00	4.40	4.0	30	100	1.9	0.030	0.060	0.100
FSR350F	3.50	6.30	3.0	30	100	2.5	0.017	0.031	0.050
FSR420F	4.20	7.60	6.0	30	100	2.9	0.012	0.024	0.040
FLR190F	1.90	3.90	5.0	15	100	1.2	0.039	0.072	0.102
FLR260F	2.60	5.80	5.0	15	100	2.5	0.020	0.042	0.063
FLR380F	3.80	8.30	5.0	15	100	2.5	0.013	0.026	0.037
FLR450F	4.50	8.90	5.0	20	100	2.5	0.011	0.020	0.028
FLR550F	5.50	10.50	5.0	20	100	2.8	0.009	0.016	0.022
FLR600F	6.00	11.70	5.0	20	100	2.8	0.007	0.014	0.019
FLR730F	7.30	14.10	5.0	20	100	3.3	0.006	0.012	0.015

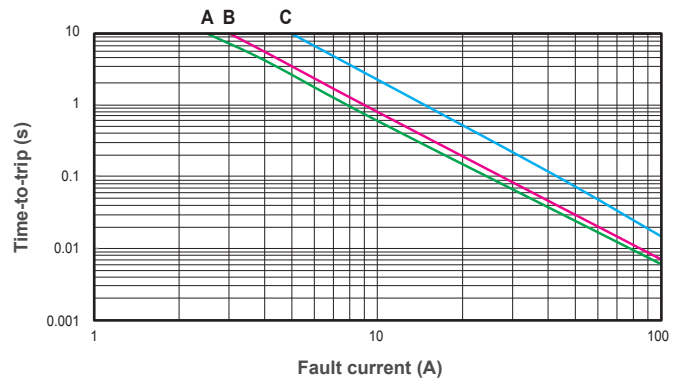
## Thermal Derating for PPTC Device at Various Ambient Temperatures

TEMPERATURE	-40°C	-20°C	0°C	23°C	30°C	40°C	50°C	60°C	70°C	85°C
FVL Series	195%	163%	132%	100%	85%	68%	53%	38%	21%	-
FVT Series	172%	149%	124%	100%	90%	78%	65%	53%	41%	23%
FSR Series	152%	135%	118%	100%	90%	82%	74%	65%	56%	42%
FLR Series	147%	132%	117%	100%	94%	86%	80%	71%	61%	52%

## Typical Time-To-Trip at 23°C

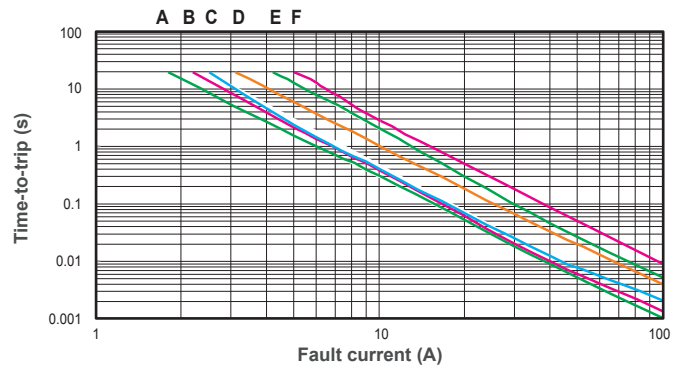
### FVL Series

- A = FVL170F
- B = FVL175F
- C = FVL230F



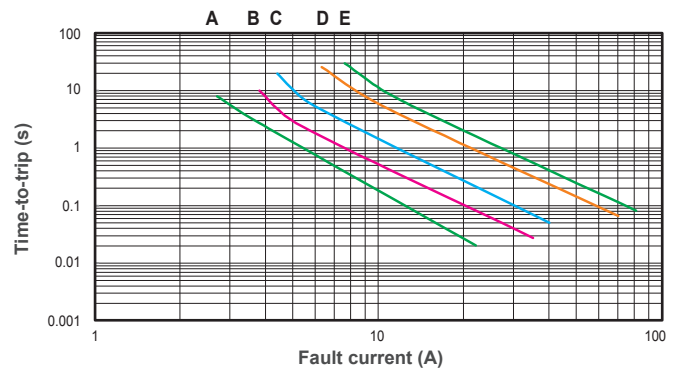
### FVT Series

- A = FVT110F
- B = FVT170F
- C = FVT175F
- D = FVT200F
- E = FVT210GF
- F = FVT240F



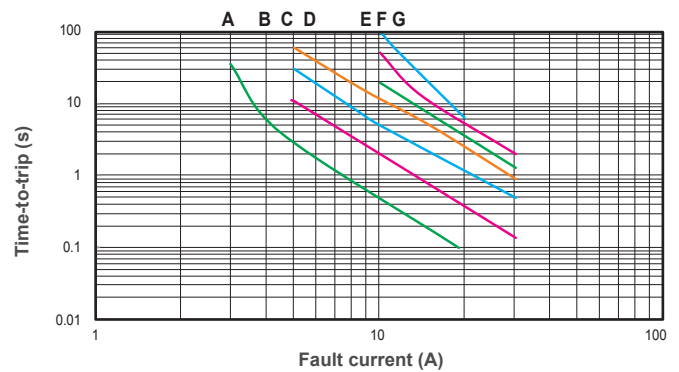
### FSR Series

- A = FSR120F
- B = FSR175F
- C = FSR200F
- D = FSR350F
- E = FSR420F

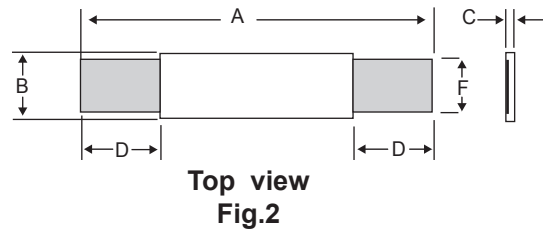
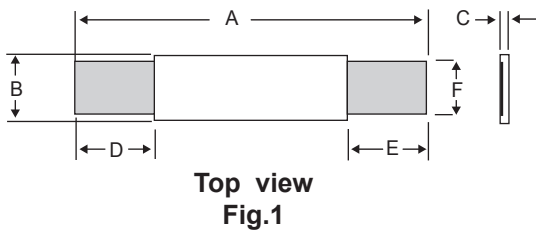


### FLR Series

- A = FLR190F
- B = FLR260F
- C = FLR380F
- D = FLR450F
- E = FLR550F
- F = FLR600F
- G = FLR730F

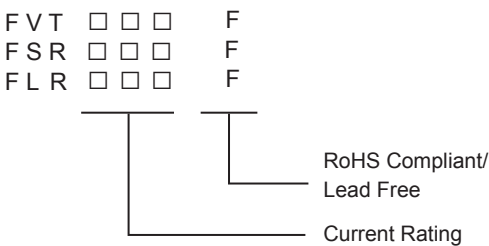
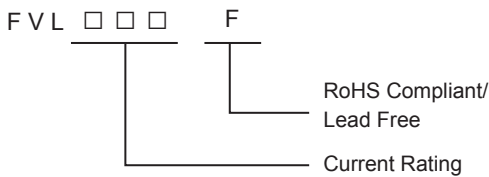


## Product Dimensions (mm)

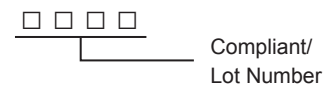
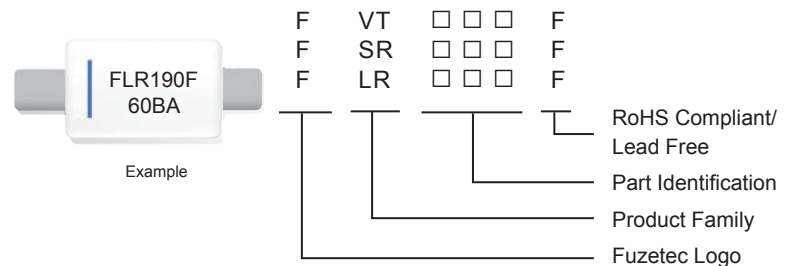
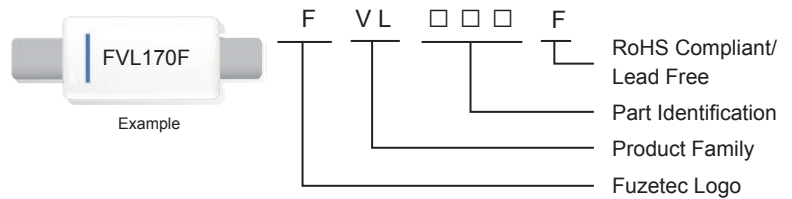


Part Number	Fig	A		B		C		D		E		F	
		Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
FVL170F	1	20.8	23.2	3.5	3.9	0.5	0.8	4.5	6.5	4.5	6.5	2.4	2.6
FVL175F	1	23.0	24.5	2.9	3.3	0.5	0.8	4.7	7.2	3.8	5.4	2.4	2.6
FVL230F	1	20.9	23.1	4.9	5.3	0.5	0.8	4.1	5.8	4.1	5.8	3.9	4.1
FVT110F	2	23.6	25.6	2.6	2.9	0.5	0.9	7.0	8.0	---	---	2.3	2.5
FVT170F	2	15.4	17.5	7.0	7.4	0.5	0.9	4.0	6.2	---	---	3.9	4.1
FVT175F	2	21.0	23.0	3.5	3.9	0.5	0.9	4.6	6.6	---	---	2.9	3.1
FVT200F	2	21.0	23.0	4.1	4.5	0.5	0.9	3.0	4.8	---	---	2.9	3.1
FVT210GF	2	21.0	23.0	4.9	5.2	0.5	0.9	4.1	5.5	---	---	3.9	4.1
FVT240F	2	23.8	26.0	4.9	5.3	0.5	0.9	3.5	5.5	---	---	3.9	4.1
FSR120F	2	19.9	22.1	4.9	5.2	0.6	1.0	5.5	7.5	---	---	3.9	4.1
FSR175F	2	20.9	23.1	4.9	5.2	0.6	1.0	4.1	5.5	---	---	3.9	4.1
FSR200F	2	21.3	23.4	10.2	11.0	0.5	1.1	5.0	7.6	---	---	4.8	5.4
FSR350F	2	28.4	31.8	13.0	13.5	0.5	1.1	6.3	8.9	---	---	5.9	6.1
FSR420F	2	30.6	32.4	12.9	13.6	0.5	1.1	5.0	7.5	---	---	5.9	6.1
FLR190F	2	19.9	22.1	4.9	5.5	0.6	1.0	5.5	7.5	---	---	3.9	4.1
FLR260F	2	20.9	23.1	4.9	5.5	0.6	1.0	4.1	5.5	---	---	3.9	4.1
FLR380F	2	24.0	26.0	6.9	7.5	0.6	1.0	4.1	5.5	---	---	4.9	5.1
FLR450F	2	24.0	26.0	9.9	10.5	0.6	1.0	5.3	6.7	---	---	5.9	6.1
FLR550F	2	35.0	37.0	6.9	7.5	0.6	1.0	5.3	6.7	---	---	4.9	5.1
FLR600F	2	24.0	26.0	13.9	14.5	0.6	1.0	4.1	5.5	---	---	5.9	6.1
FLR730F	2	27.1	29.1	13.9	14.5	0.6	1.0	4.1	5.5	---	---	5.9	6.1

## Part Numbering System



## Part Marking System



## Package Information

Part Number	Standard Package
FVL170F~FVL175F	: 1.0K Pcs/Bag
FVL230F	: 500 Pcs/Bag
FVT110F~FVT210GF	: 1.0K Pcs/Bag
FVT240F	: 500 Pcs/Bag
FSR120F~FSR175F	: 1.0K Pcs/Bag
FSR200F~FSR420F	: 500 Pcs/Bag
FLR190F~FLR380F	: 1.0K Pcs/Bag
FLR450F~FLR730F	: 500 Pcs/Bag

## Physical specifications

Lead material	0.13mm nominal thickness, quarter-hard nickel.
Insulating coating	Polyester tape.

### 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.