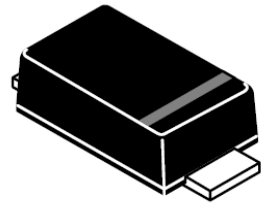


## Description

The P4SMFJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.



## Features

- 400W peak pulsepower capability at 10 x 1000 $\mu$ s waveform, repetition rate (duty cycle): 0.01%
- Glass Passivated chip junction
- For surface mounted applications to optimize board space
- Low profile package
- Built-in strain relief
- Low incremental surge resistance
- Excellent clamping capability
- Plastic package has UL flammability classification 94V-0
- Fast response time: typically less than 1.0ps from 0 Volts to BV min
- Typical IR less than 5 $\mu$ A above 22V
- High temperature soldering: 260°C/40 seconds at terminals
- IEC-61000-4-2 ESD 15KV(Air),8KV(Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2(IEC801-2)
- EFT protection of data lines in accordance with IEC61000-4-4(IEC801-4)
- AEC -Q101 qualified.

## Applications

TVS devices are ideal for the protection of I/O Interfaces, VCC bus and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications.

## Maximum Ratings and Electrical Characteristics

(TA=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C by 10x1000µs waveform (Fig.2)(Note 1) (Note 2)	$P_{PPM}$	400	W
Power Dissipation on infinite heat sink at TA=50°C	$P_D$	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Unidirectional only(Note 3)	$I_{FSM}$	300	A
Maximum Instantaneous Forward Voltage at 100A for Unidirectional only	$V_F$	3.5V/5.0	V
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	-55 to +150	°C
Typical Thermal Resistance Junction to Lead	$R_{uJL}$	15	°C/W
Typical Thermal Resistance Junction to Ambient	$R_{uJA}$	75	°C/W

### Notes:

1. Non-repetitive current pulse, per Fig.3and derated above TA=25°C per Fig. 2.
2. Mounted on copper pad area of 0.31x0.31" (8.0 x 8.0mm) to each terminal.
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

## Electrical Characteristics

Part Number		Breakdown Voltage $V_{BR}$ @ $I_T$			Maximum Reverse Leakage $I_R$ @ $V_{RWM}$ ( $\mu A$ )	Working Peak Reverse Voltage $V_{RWM}$ (V)	Maximum Reverse Surge Current $I_{PP}$ (A)	Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V)
		Min (V)	Max (V)	$I_T$ (mA)				
P4SMFJ5.0A	P4SMFJ5.0CA	6.40	7.00	10	800	5.0	40.1	9.2
P4SMFJ6.0A	P4SMFJ6.0CA	6.67	7.37	10	800	6.0	35.9	10.3
P4SMFJ6.5A	P4SMFJ6.5CA	7.22	7.98	10	500	6.5	33.1	11.2
P4SMFJ7.0A	P4SMFJ7.0CA	7.78	8.60	10	200	7.0	30.9	12.0
P4SMFJ7.5A	P4SMFJ7.5CA	8.33	9.21	1	100	7.5	28.7	12.9
P4SMFJ8.0A	P4SMFJ8.0CA	8.89	9.83	1	50	8.0	27.2	13.6
P4SMFJ8.5A	P4SMFJ8.5CA	9.44	10.40	1	20	8.5	25.7	14.4
P4SMFJ9.0A	P4SMFJ9.0CA	10.00	11.10	1	10	9.0	24.1	15.4
P4SMFJ10A	P4SMFJ10CA	11.10	12.30	1	5	10.0	23.5	17.0
P4SMFJ11A	P4SMFJ11CA	12.20	13.50	1	1	11.0	22.0	18.2
P4SMFJ12A	P4SMFJ12CA	13.30	14.70	1	1	12.0	20.1	19.9
P4SMFJ13A	P4SMFJ13CA	14.40	15.90	1	1	13.0	18.6	21.5
P4SMFJ14A	P4SMFJ14CA	15.60	17.20	1	1	14.0	17.2	23.2
P4SMFJ15A	P4SMFJ15CA	16.70	18.50	1	1	15.0	16.4	24.4
P4SMFJ16A	P4SMFJ16CA	17.80	19.70	1	1	16.0	15.4	26.0
P4SMFJ17A	P4SMFJ17CA	18.90	20.90	1	1	17.0	14.5	27.6
P4SMFJ18A	P4SMFJ18CA	20.00	22.10	1	1	18.0	13.7	29.2
P4SMFJ20A	P4SMFJ20CA	22.20	24.50	1	1	20.0	12.3	32.4
P4SMFJ22A	P4SMFJ22CA	24.40	26.90	1	1	22.0	11.3	35.5
P4SMFJ24A	P4SMFJ24CA	26.70	29.50	1	1	24.0	10.3	38.9
P4SMFJ26A	P4SMFJ26CA	28.90	31.90	1	1	26.0	9.5	42.1
P4SMFJ28A	P4SMFJ28CA	31.10	34.40	1	1	28.0	8.8	45.4
P4SMFJ30A	P4SMFJ30CA	33.30	36.80	1	1	30.0	8.3	48.4
P4SMFJ33A	P4SMFJ33CA	36.70	40.60	1	1	33.0	7.5	53.3
P4SMFJ36A	P4SMFJ36CA	40.00	44.20	1	1	36.0	6.9	58.1
P4SMFJ40A	P4SMFJ40CA	44.40	49.10	1	1	40.0	6.2	64.5
P4SMFJ43A	P4SMFJ43CA	47.80	52.80	1	1	43.0	5.8	69.4
P4SMFJ45A	P4SMFJ45CA	50.00	55.30	1	1	45.0	5.5	72.7
P4SMFJ48A	P4SMFJ48CA	53.30	58.90	1	1	48.0	5.2	77.4
P4SMFJ51A	P4SMFJ51CA	56.70	62.70	1	1	51.0	4.9	82.4
P4SMFJ54A	P4SMFJ54CA	60.00	66.30	1	1	54.0	4.6	87.1
P4SMFJ58A	P4SMFJ58CA	64.40	71.20	1	1	58.0	4.3	93.6
P4SMFJ60A	P4SMFJ60CA	66.70	73.70	1	1	60.0	4.1	96.8
P4SMFJ64A	P4SMFJ64CA	71.10	78.60	1	1	64.0	3.9	103.0
P4SMFJ70A	P4SMFJ70CA	77.80	86.00	1	1	70.0	3.5	113.0
P4SMFJ75A	P4SMFJ75CA	83.30	92.10	1	1	75.0	3.3	121.0
P4SMFJ78A	P4SMFJ78CA	86.70	95.80	1	1	78.0	3.2	126.0
P4SMFJ85A	P4SMFJ85CA	94.40	104.00	1	1	85.0	2.9	137.0

## Electrical Characteristics

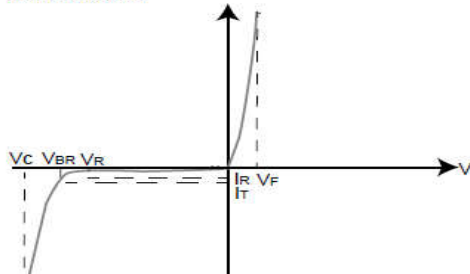
### Notes:

For bidirectional type having  $V_{RWM}$  of 20 volts and less, the  $I_R$  limit is double.

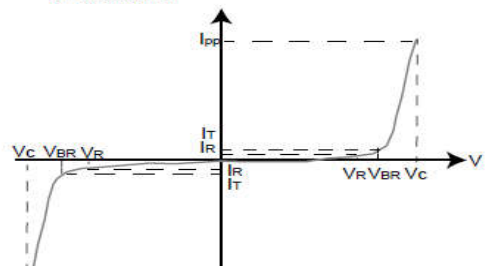
For parts without A ( $V_{BR}$  is  $\pm 10\%$  and  $V_C$  is 5% higher than A parts

## I-V Curve Characteristics

Uni-directional



Bi-directional



# Ratings and Characteristic Curves (TA=25°C unless otherwise noted)

Figure 1 - Peak Pulse Power Rating Curve

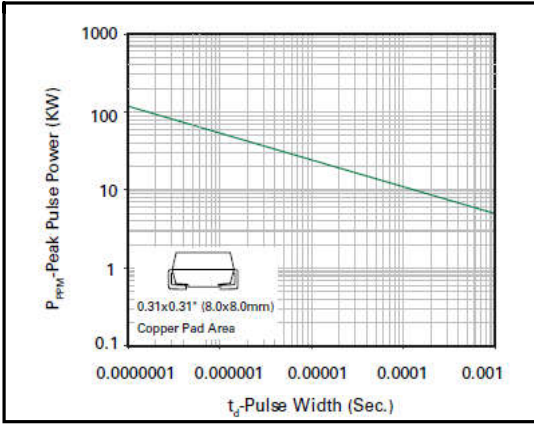


Figure 2 - Pulse Derating Curve

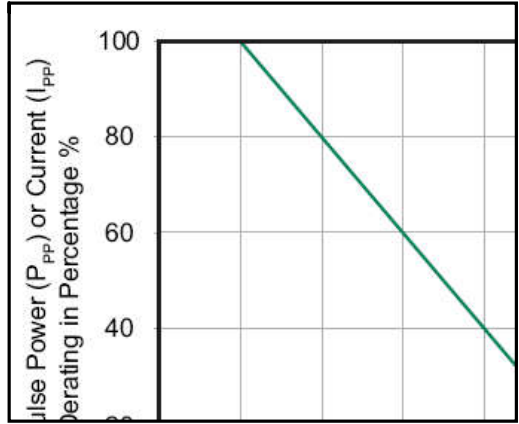


Figure 3 - Pulse Waveform

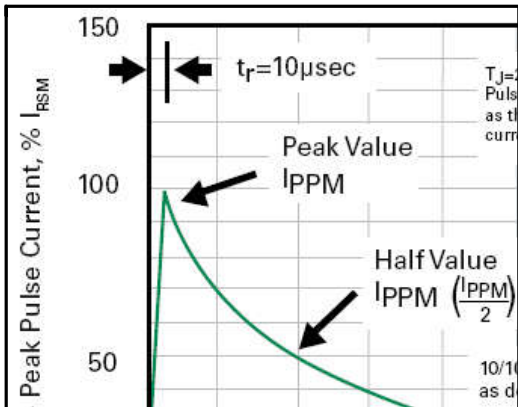
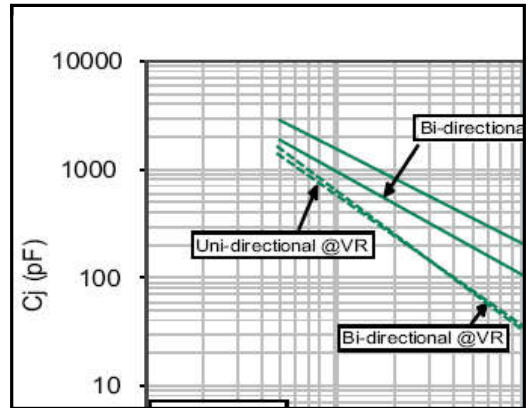


Figure 4 - Typical Junction Capacitance



## Ratings and Characteristic Curves (TA=25°C unless otherwise noted)

Figure 5 - Steady State Power Dissipation Derating Curve

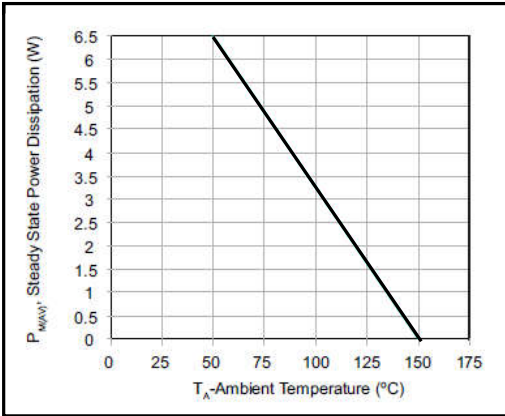
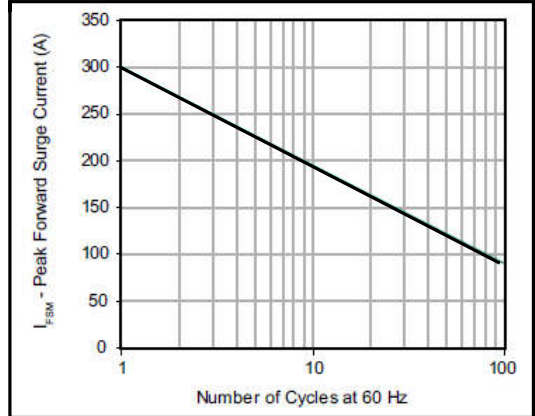


Figure 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



## Part Numbering System

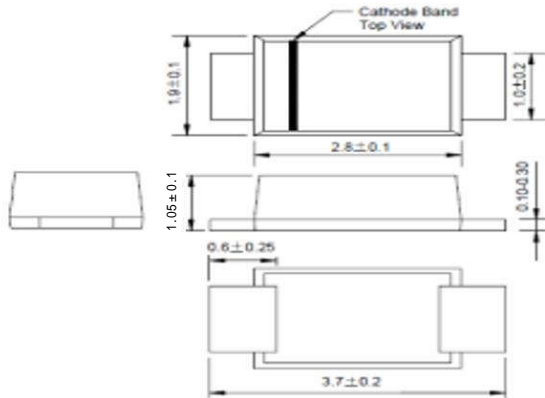
**P4SMFJ XXX C A**

(1) (2) (3) (4)

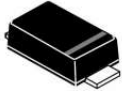
- (1) SERIES.
- (2) VR VOLTAGE.
- (3) BI-DIRECTIONAL.
- (4) 5% VOLTAGE TOLERANCE.

## Product Dimensions

### SOD-123FL



## Summary of Packing Options

Package Type	Description	Packing Quantity	Industry Standard
SOD-123(P4SMFJ) 	Embossed Carrier Reel Pack	3000PCS	EIA-481-D

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