Prisemi®

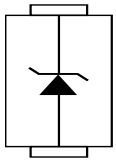
P6SMAFJ5.0A THRU P6SMAFJ440CA

Surface mount transient voltage suppressor power 600 watts

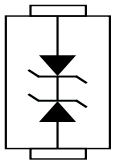
Description

The SMAF Series are designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Unidirectional



Bi-directional



Feature

- For surface mounted applications in order to optimize board space.
- Low profile package
- Glass passivated junction
- Low inductance
- Plastic package has Underwriters Laboratory Flammability

Mechanical Characteristics

- Case: SMAF
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 57mg/0.002oz

Absolute maximum rating@25℃

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 s waveform (Note1,Note2, Fig.1).(Note 1,2,4, Fig1)	P_{PPM}	Minimum 600	W
Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load, (JEDEC Method) (Note 3,Fig4).	I_{FSM}	100	A
Peak Pulse Current on 10/1000 us waveform (Note 1, Fig 2)	I_{PPM}	see Table 1	A
Typical Junction capacitance at VR=4V, f=1MHz	C_J	390	pF
ESD Voltage per IEC6100-4-2 Contact Air	V_{ESD1} V_{ESD2}	±8 to ±15	KV
Typical Thermal Resistance Junction to Ambient(Note 2)	$R_{\theta JA}$	150	℃/W
Operating Junction Temperature and Storage Temperature Range	T_j, T_{stg}	-55 to +150	℃

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above TA = 25℃ per Fig. 2.
2. Mounted on FR-4 PCB single-sided copper, mini pad.
3. Peak Forward Surge Current : 8.3ms single half sine-wave Superimposed on rated load (JEDEC method).
4. Peak pulse power waveform is 10/1000μS.

Electrical characteristics per line@25℃(unless otherwise specified)

Part Number (Uni)	Part Number (Bi)	Reverse Stand off Voltage V_R (V)	Breakdown Voltage V_{BR}@ I_T (V)		Test Current I_T (mA)	Maximum Clamping Voltage V_C @I_{PP} (V)	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R @V_{RWM} (uA)
			MIN	MAX				
P6SMAFJ5.0A	P6SMAFJ5.0CA	5.0	6.40	7.00	10	9.2	65.3	800
P6SMAFJ6.0A	P6SMAFJ6.0CA	6.0	6.67	7.37	10	10.3	58.3	800
P6SMAFJ6.5A	P6SMAFJ6.5CA	6.5	7.22	7.98	10	11.2	53.6	500
P6SMAFJ7.0A	P6SMAFJ7.0CA	7.0	7.78	8.60	10	12.0	50.0	200
P6SMAFJ7.5A	P6SMAFJ7.5CA	7.5	8.33	9.21	1	12.9	46.6	100
P6SMAFJ8.0A	P6SMAFJ8.0CA	8.0	8.89	9.83	1	13.6	44.2	50
P6SMAFJ8.5A	P6SMAFJ8.5CA	8.5	9.44	10.40	1	14.4	41.7	20
P6SMAFJ9.0A	P6SMAFJ9.0CA	9.0	10.00	11.10	1	15.4	39.0	10
P6SMAFJ10A	P6SMAFJ10CA	10.0	11.10	12.30	1	17.0	35.3	5
P6SMAFJ11A	P6SMAFJ11CA	11.0	12.20	13.50	1	18.2	33.0	1
P6SMAFJ12A	P6SMAFJ12CA	12.0	13.30	14.70	1	19.9	30.2	1
P6SMAFJ13A	P6SMAFJ13CA	13.0	14.40	15.90	1	21.5	28.0	1
P6SMAFJ14A	P6SMFAJ14CA	14.0	15.60	17.20	1	23.2	25.9	1
P6SMAFJ15A	P6SMAFJ15CA	15.0	16.70	18.50	1	24.4	24.6	1
P6SMAFJ16A	P6SMAFJ16CA	16.0	17.80	19.70	1	26.0	23.1	1
P6SMAFJ17A	P6SMAFJ17CA	17.0	18.90	20.90	1	27.6	21.8	1
P6SMAFJ18A	P6SMAFJ18CA	18.0	20.00	22.10	1	29.2	20.6	1
P6SMAFJ20A	P6SMAFJ20CA	20.0	22.20	24.50	1	32.4	18.6	1
P6SMAFJ22A	P6SMAFJ22CA	22.0	24.40	26.90	1	35.5	16.9	1
P6SMAFJ24A	P6SMAFJ24CA	24.0	26.70	29.50	1	38.9	15.5	1
P6SMAFJ26A	P6SMAFJ26CA	26.0	28.90	31.90	1	42.1	14.3	1
P6SMAFJ28A	P6SMAFJ28CA	28.0	31.10	34.40	1	45.4	13.3	1
P6SMAFJ30A	P6SMAFJ30CA	30.0	33.30	36.80	1	48.4	12.4	1
P6SMAFJ33A	P6SMAFJ33CA	33.0	36.70	40.60	1	53.3	11.3	1
P6SMAFJ36A	P6SMAFJ36CA	36.0	40.00	44.20	1	58.1	10.4	1
P6SMAFJ40A	P6SMAFJ40CA	40.0	44.40	49.10	1	64.5	9.3	1
P6SMAFJ43A	P6SMAFJ43CA	43.0	47.80	52.80	1	69.40	8.7	1

Part Number (Uni)	Part Number (Bi)	Reverse Stand off Voltage V_R (V)	Breakdown Voltage V_{BR}@ I_T (V)		Test Current I_T (mA)	Maximum Clamping Voltage V_C @I_{PP} (V)	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R @V_{RWM} (uA)
			MIN	MAX				
P6SMAFJ45A	P6SMAFJ45CA	45.0	50.00	55.30	1	72.7	8.3	1
P6SMAFJ48A	P6SMAFJ48CA	48.0	53.30	58.90	1	77.4	7.8	1
P6SMAFJ51A	P6SMAFJ51CA	51.0	56.70	62.70	1	82.4	7.3	1
P6SMAFJ54A	P6SMAFJ54CA	54.0	60.00	66.30	1	87.1	6.9	1
P6SMAFJ58A	P6SMAFJ58CA	58.0	64.40	71.20	1	93.6	6.5	1
P6SMAFJ60A	P6SMAFJ60CA	60.0	66.70	73.70	1	96.8	6.2	1
P6SMAFJ64A	P6SMAFJ64CA	64.0	71.10	78.60	1	103.0	5.9	1
P6SMAFJ70A	P6SMAFJ70CA	70.0	77.80	86.00	1	113.0	5.3	1
P6SMAFJ75A	P6SMAFJ75CA	75.0	83.30	92.10	1	121.0	5.0	1
P6SMAFJ78A	P6SMAFJ78CA	78.0	86.70	95.80	1	126.0	4.8	1
P6SMAFJ85A	P6SMAFJ85CA	85.0	94.40	104.00	1	137.0	4.4	1
P6SMAFJ90A	P6SMAFJ90CA	90.0	100.00	111.00	1	146.0	4.1	1
P6SMAFJ100A	P6SMAFJ100CA	100.0	111.00	123.00	1	162.0	3.7	1
P6SMAFJ110A	P6SMAFJ110CA	110.0	122.00	135.00	1	177.0	3.4	1
P6SMAFJ120A	P6SMAFJ120CA	120.0	133.00	147.00	1	193.0	3.1	1
P6SMAFJ130A	P6SMAFJ130CA	130.0	144.00	159.00	1	209.0	2.9	1
P6SMAFJ150A	P6SMAFJ150CA	150.0	167.00	185.00	1	243.0	2.5	1
P6SMAFJ160A	P6SMAFJ160CA	160.0	178.00	197.00	1	259.0	2.3	1
P6SMAFJ170A	P6SMAFJ170CA	170.0	189.00	209.00	1	275.0	2.2	1
P6SMAFJ180A	P6SMAFJ180CA	180.0	201.00	222.00	1	292.0	2.1	1
P6SMAFJ200A	P6SMAFJ200CA	200.0	224.00	247.00	1	324.0	1.9	1
P6SMAFJ220A	P6SMAFJ220CA	220.0	246.00	272.00	1	356.0	1.7	1
P6SMAFJ250A	P6SMAFJ250CA	250.0	279.00	309.00	1	405.0	1.5	1
P6SMAFJ300A	P6SMAFJ300CA	300.0	335.00	371.00	1	486.0	1.3	1
P6SMAFJ350A	P6SMAFJ350CA	350.0	391.00	432.00	1	567.0	1.1	1
P6SMAFJ400A	P6SMAFJ400CA	400.0	447.00	494.00	1	648.0	0.9	1
P6SMAFJ440A	P6SMAFJ440CA	440.0	492.00	543.00	1	713.0	0.9	1

Typical Characteristics

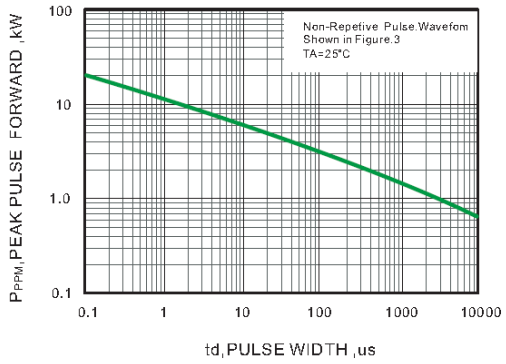


Fig.1 Peak Pulse Power Rating Curve

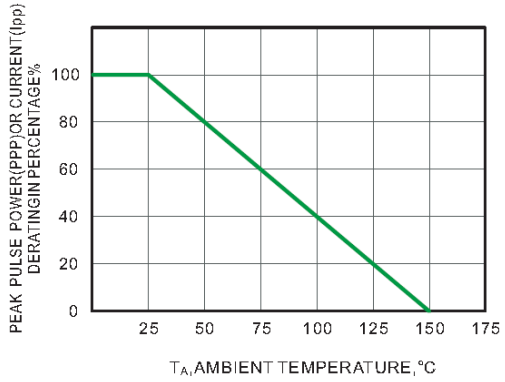


Fig.2 Forward Current Derating Curve

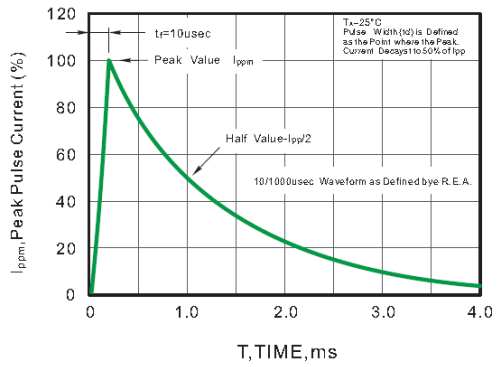
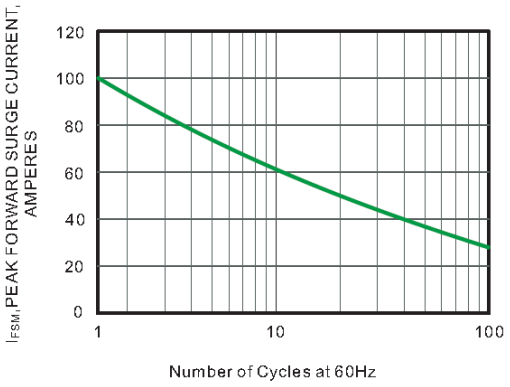


Fig.3 Pulse Waveform

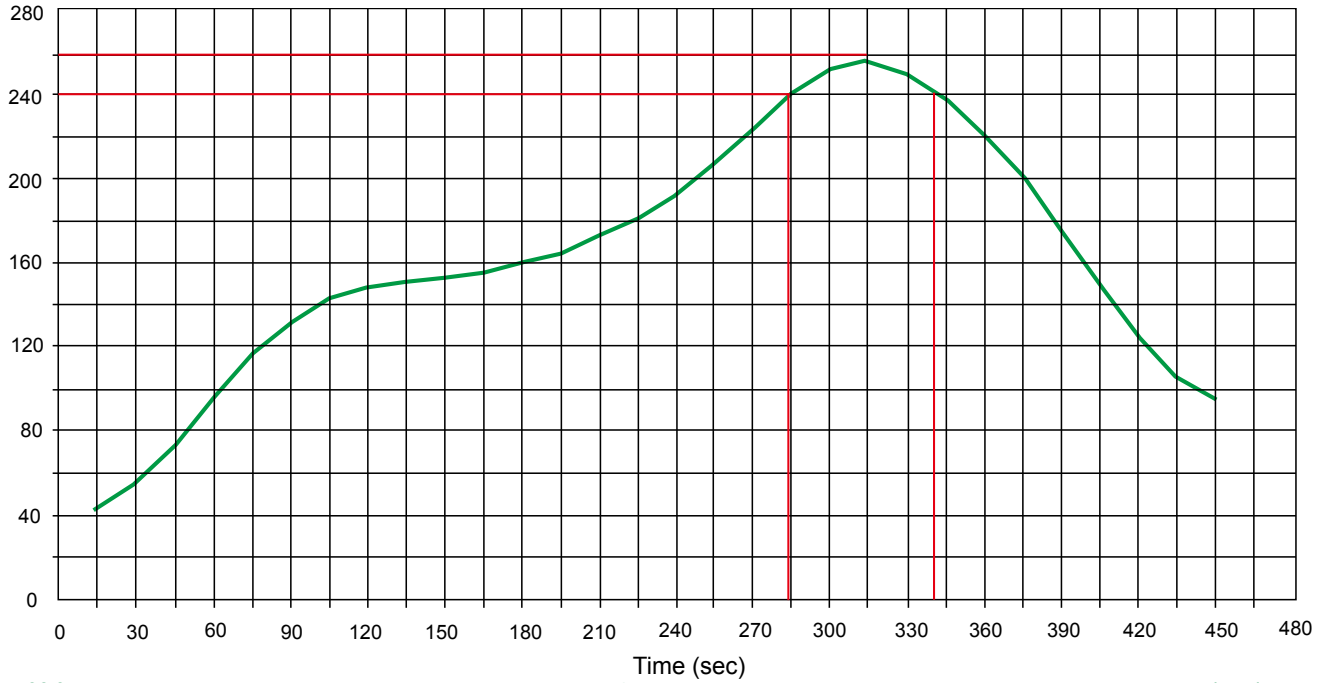


TJ=TJmax
8.3ms Single Half Sinepwave
JEDEC Method

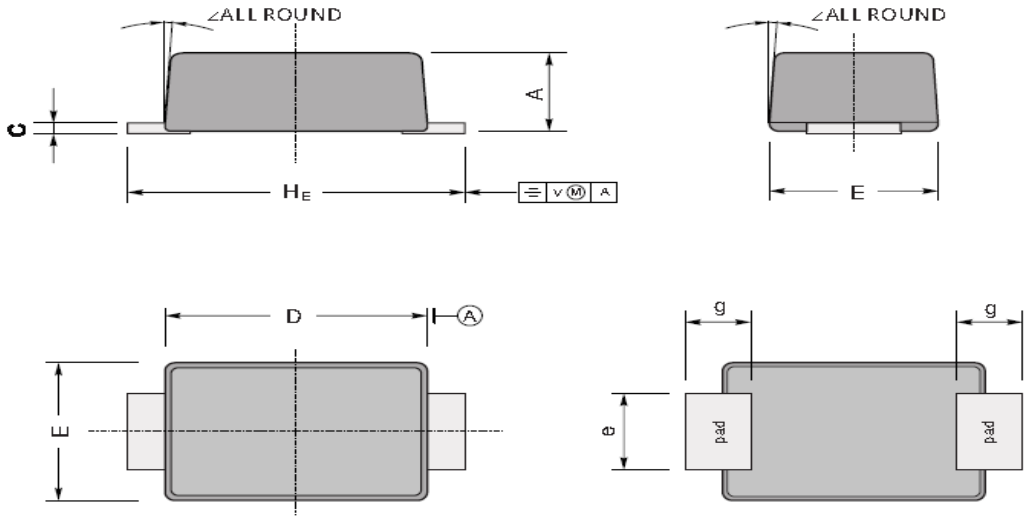
Fig.4 Maximum Non-Repetitive Peak Forward Surge Current

Solder Reflow Recommendation

Peak Temp=257℃, Ramp Rate=0.802deg. ℃/sec

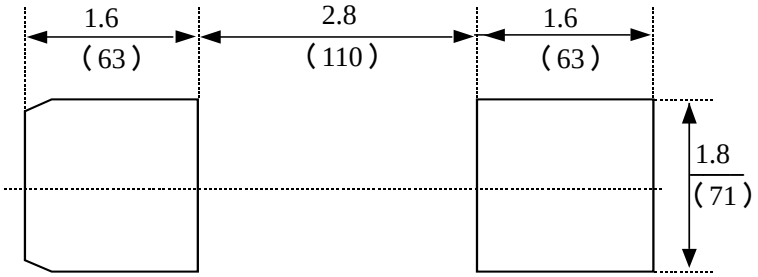


Product dimension (SMAF)



UNIT		A	C	D	E	e	g	H_E	∠
mm	max	1.3	0.23	3.7	2.7	1.6	1.3	4.9	7°
	min	1.1	0.18	3.3	2.4	1.3	1.0	4.4	
mil	max	51	9.1	146	106	63	51	193	
	min	43	7.1	130	94	51	39	173	

The recommended mounting pad size



Unit: mm / (mil)

Ordering information

Device	Package	Shipping
P6SMAFJ5.0A - P6SMAFJ440CA	SMAF (Pb-Free)	5000/ Tape & Reel

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