

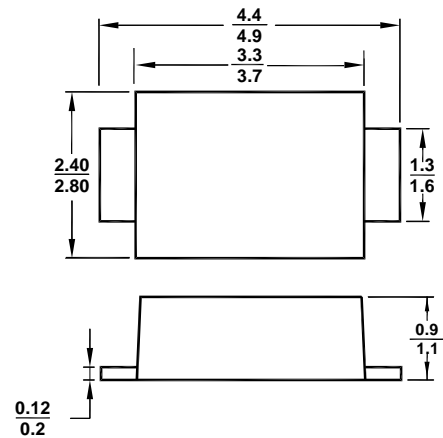
P4SMAFJ Series-HAF

Surface Mount Transient Voltage Suppressors

Features

- For surface mounted applications in order to optimize board space.
- Low profile package
- Glass passivated junction
- Low inductance
- Plastic package has Underwriters Laboratory Flammability
- Halogen and Antimony Free(HAF), RoHS compliant

SMAF



All Dimensions in mm

Mechanical Data

- Case: SMAF
- Terminals: Solderable per MIL-STD-750, Method 2026

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 s waveform ^{1) 2) 4)}	P_{PPM}	400	W
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC Method) ³⁾	I_{FSM}	40	A
Peak Pulse Current on 10/1000 us waveform ¹⁾	I_{PPM}	see Table 1	A
Typical Junction capacitance at VR=4V, f=1MHz	C_J	390	pF
ESD Voltage per IEC6100-4-2	Air Contact V_{ESD1} V_{ESD2}	± 30 ± 30	kV
Typical Thermal Resistance Junction to Ambient ²⁾	$R_{\theta JA}$	70	$^\circ\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	T_J, T_{stg}	- 55 to + 150	$^\circ\text{C}$

¹⁾ Non-repetitive current pulse and derated above $T_a = 25^\circ\text{C}$.

²⁾ Mounted on 5mm² copper pads to each terminal.

³⁾ Peak Forward Surge Current : 8.3ms single half sine-wave Superimposed on rated load (JEDEC method).

⁴⁾ Peak pulse power waveform is 10/1000 S.

TOP DYNAMIC



P4SMAFJ Series-HAF

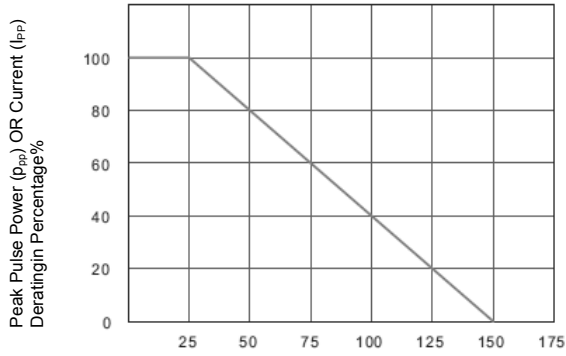
Electrical Characteristics (Rating at $T_a = 25\text{ }^\circ\text{C}$ unless otherwise specified)

Uni-directional / Bi-directional Type	Stand-off Voltage V_{WM} (V)	Breakdown Voltage		Test Current I_T (mA)	Maximum Clamping Voltage V_C (V) at I_{PPM}	Maximum Peak Pulse Current I_{PPM} (A)	Maximum Reverse Leakage		Package SMAF	
		V_{BR} @ I_T					I_R (μA) @ V_{RWM} (μA)		Device Marking Code	
		Min.	Max.							
		(V)	(V)				UNI	BI	UNI	BI
P4SMAFJ5.0A / CA	5	6.4	7.25	10	9.2	43.5	800	1600	HE	5.0D
P4SMAFJ6.0A / CA	6	6.67	7.67	10	10.3	38.8	800	1600	HG	6.0D
P4SMAFJ6.5A / CA	6.5	7.22	8.3	10	11.2	35.7	500	1000	HK	6.5D
P4SMAFJ7.0A / CA	7	7.78	8.95	10	12	33.3	200	400	HM	7.0D
P4SMAFJ7.5A / CA	7.5	8.33	9.58	1	12.9	31	100	200	HP	7.5D
P4SMAFJ8.0A / CA	8	8.89	10.23	1	13.6	29.4	50	100	HR	8.0D
P4SMAFJ8.5A / CA	8.5	9.44	10.82	1	14.4	27.7	10	20	HT	8.5D
P4SMAFJ9.0A / CA	9	10	11.5	1	15.4	26	5	5	HV	9.0D
P4SMAFJ10A / CA	10	11.1	12.8	1	17	23.5	5	5	HX	10D
P4SMAFJ11A / CA	11	12.2	14	1	18.2	22	1	1	HZ	11D
P4SMAFJ12A / CA	12	13.3	15.3	1	19.9	20.1	1	1	IE	12D
P4SMAFJ13A / CA	13	14.4	16.5	1	21.5	18.6	1	1	IG	13D
P4SMAFJ14A / CA	14	15.6	17.9	1	23.2	17.2	1	1	IK	14D
P4SMAFJ15A / CA	15	16.7	19.2	1	24.4	16.4	1	1	IM	15D
P4SMAFJ16A / CA	16	17.8	20.5	1	26	15.3	1	1	IP	16D
P4SMAFJ17A / CA	17	18.9	21.7	1	27.6	14.5	1	1	IR	17D
P4SMAFJ18A / CA	18	20	23.3	1	29.2	13.7	1	1	IT	18D
P4SMAFJ20A / CA	20	22.2	25.5	1	32.4	12.3	1	1	IV	20D
P4SMAFJ22A / CA	22	24.4	28	1	35.5	11.2	1	1	IX	22D
P4SMAFJ24A / CA	24	26.7	30.7	1	38.9	10.3	1	1	IZ	24D
P4SMAFJ26A / CA	26	28.9	33.2	1	42.1	9.5	1	1	JE	26D
P4SMAFJ28A / CA	28	31.1	35.8	1	45.4	8.8	1	1	JG	28D
P4SMAFJ30A / CA	30	33.3	38.3	1	48.4	8.3	1	1	JK	30D
P4SMAFJ33A / CA	33	36.7	42.2	1	53.3	7.5	1	1	JM	33D
P4SMAFJ36A / CA	36	40	46	1	58.1	6.9	1	1	JP	36D
P4SMAFJ40A / CA	40	44.4	51.1	1	64.5	6.2	1	1	JR	40D
P4SMAFJ43A / CA	43	47.8	54.9	1	69.4	5.7	1	1	JT	43D
P4SMAFJ45A / CA	45	50	57.5	1	72.7	5.5	5	5	JV	45D
P4SMAFJ48A / CA	48	53.3	61.3	1	77.4	5.2	5	5	JX	48D
P4SMAFJ51A / CA	51	56.7	65.2	1	82.4	4.9	5	5	JZ	51D
P4SMAFJ54A / CA	54	60	69	1	87.1	4.6	5	5	RE	54D
P4SMAFJ58A / CA	58	64.4	74.1	1	93.6	4.3	5	5	RG	58D
P4SMAFJ60A / CA	60	66.7	76.7	1	96.8	4.1	5	5	RK	60D
P4SMAFJ64A / CA	64	71.1	81.8	1	103	3.9	5	5	RM	64D
P4SMAFJ70A / CA	70	77.8	89.5	1	113	3.5	5	5	RP	70D
P4SMAFJ75A / CA	75	83.3	95.8	1	121	3.3	5	5	RR	75D
P4SMAFJ78A / CA	78	86.7	99.7	1	126	3.2	5	5	RT	78D
P4SMAFJ85A / CA	85	94.4	108.2	1	137	2.9	5	5	RV	85D
P4SMAFJ90A / CA	90	100	115.5	1	146	2.7	5	5	RX	90D
P4SMAFJ100A / CA	100	111	128	1	162	2.5	5	5	RZ	100D
P4SMAFJ110A / CA	110	122	140.5	1	177	2.3	5	5	SE	110D
P4SMAFJ120A / CA	120	133	153	1	193	2	5	5	SG	120D
P4SMAFJ130A / CA	130	144	165.5	1	209	1.9	5	5	SK	130D
P4SMAFJ150A / CA	150	167	192.5	1	243	1.6	5	5	SM	150D
P4SMAFJ160A / CA	160	178	205	1	259	1.5	5	5	SP	160D
P4SMAFJ170A / CA	170	189	217.5	1	275	1.4	5	5	SR	170D
P4SMAFJ180A / CA	180	198	230.4	1	292	1.3	5	5	180A	180D
P4SMAFJ190A / CA	190	209	243.2	1	308	1.3	5	5	190A	190D
P4SMAFJ200A / CA	200	220	256	1	324	1.2	5	5	200A	200D
P4SMAFJ210A / CA	210	231	268.8	1	340	1.2	5	5	210A	210D
P4SMAFJ220A / CA	220	242	281.6	1	356	1.1	5	5	220A	220D

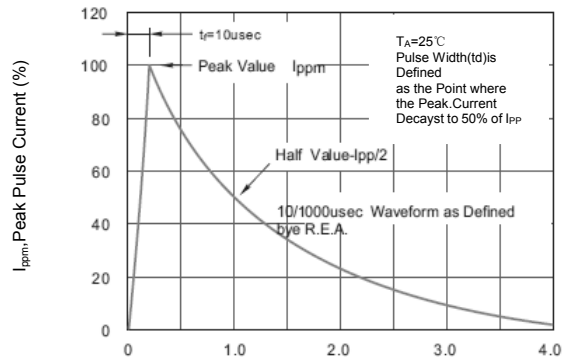
TOP DYNAMIC



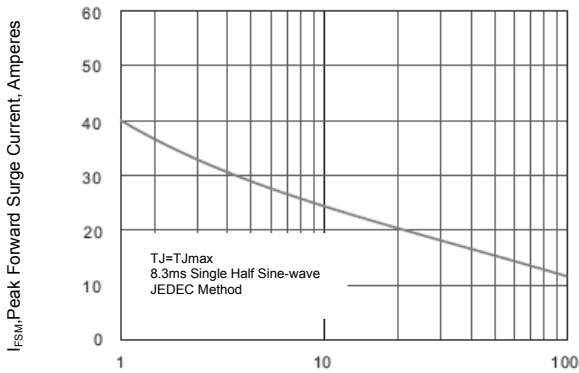
P4SMAFJ Series-HAF



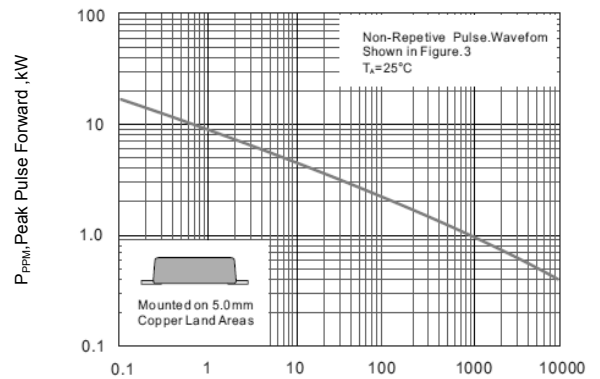
T_A, Ambient Temperature, °C
Figure 1. Forward Current Derating Curve



T, Time, ms
Figure 2. Pulse Waveform



Number of Cycles at 60Hz
Figure 3. Maximum Non-Repetitive Peak Forward Surge Current



td, Pulse Width, μs
Figure 4. Peak Pulse Power Rating Curve

TOP DYNAMIC

