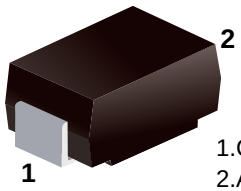
EVVOSEMI®
THINK CHANGE DO

SMAJ Series

Transient Voltage Suppressor Diodes

■ 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



1.Cathode
2.Anode

■ Simplified outline(SMA)

Top View

Unipolar Bipolar

■Maximum Ratings and Electrical characteristics Ratings at 25℃ ambient temperature unless otherwise specified.

Parameter		Symbol	Value	Unit
Peak Pulse Power Dissipation on T_A=25°C (Note 1,2,4, Fig1)		P_{PPM}	400	W
Peak Forward Surge Current (Note 3,Fig 4)		I_{FSM} (UNI)	60	A
Peak Pulse Current on 10/1000 us waveform (Note 1, Fig 3)		I_{PPM}	see Table 1	A
ESD Voltage per IEC6100-4-2	Contact Air	V_{ESD1} V_{ESD2}	±30 ±30	kV
Typical Thermal Resistance Junction to Ambient(Note 2)		$R_{\theta JA}$	30	°C/W
Operating Junction Temperature and Storage Temperature Range		T_j, T_{stg}	-65 ~ +150	°C

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above T_A = 25°C per Fig. 2.
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 10/1000μS.

SMAJ Series

Characteristics at Ta = 25°C

Table 1

Type		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current	Package	
			V_{BR} @ I_T						SMA	
		V_{RRM}	Min	Max	I_T	I_R @ V_{RRM}	V_C @ I_{PP}	I_{PP}	Device Marking Ccode	
UNI	BI	V	V	V	mA	μA	V	A	UNI	BI
SMAJ5.0A	SMAJ5.0CA	5	6.4	7	10	800	9.2	43.5	AE	WE
SMAJ6.0A	SMAJ6.0CA	6	6.67	7.37	10	800	10.3	38.8	AG	WG
SMAJ6.5A	SMAJ6.5CA	6.5	7.22	7.98	10	500	11.2	35.7	AK	WK
SMAJ7.0A	SMAJ7.0CA	7	7.78	8.6	10	200	12.0	33.3	AM	WM
SMAJ7.5A	SMAJ7.5CA	7.5	8.33	9.21	1	100	12.9	31.0	AP	WP
SMAJ8.0A	SMAJ8.0CA	8	8.89	9.83	1	50	13.6	29.4	AR	WR
SMAJ8.5A	SMAJ8.5CA	8.5	9.44	10.4	1	20	14.4	27.8	AT	WT
SMAJ9.0A	SMAJ9.0CA	9	10	11.1	1	10	15.4	26.0	AV	WV
SMAJ10A	SMAJ10CA	10	11.1	12.3	1	5	17.0	23.5	AX	WX
SMAJ11A	SMAJ11CA	11	12.2	13.5	1	1	18.2	22.0	AZ	WZ
SMAJ12A	SMAJ12CA	12	13.3	14.7	1	1	19.9	20.1	BE	XE
SMAJ13A	SMAJ13CA	13	14.4	15.9	1	1	21.5	18.6	BG	XG
SMAJ14A	SMAJ14CA	14	15.6	17.2	1	1	23.2	17.2	BK	XK
SMAJ15A	SMAJ15CA	15	16.7	18.5	1	1	24.4	16.4	BM	XM
SMAJ16A	SMAJ16CA	16	17.8	19.7	1	1	26.0	15.4	BP	XP
SMAJ17A	SMAJ17CA	17	18.9	20.9	1	1	27.6	14.5	BR	XR
SMAJ18A	SMAJ18CA	18	20	22.1	1	1	29.2	13.7	BT	XT
SMAJ20A	SMAJ20CA	20	22.2	24.5	1	1	32.4	12.3	BV	XV
SMAJ22A	SMAJ22CA	22	24.4	26.9	1	1	35.5	11.3	BX	XX
SMAJ24A	SMAJ24CA	24	26.7	29.5	1	1	38.9	10.3	BZ	XZ
SMAJ26A	SMAJ26CA	26	28.9	31.9	1	1	42.1	9.5	CE	YE
SMAJ28A	SMAJ28CA	28	31.1	34.4	1	1	45.4	8.8	CG	YG
SMAJ30A	SMAJ30CA	30	33.3	36.8	1	1	48.4	8.3	CK	YK
SMAJ33A	SMAJ33CA	33	36.7	40.6	1	1	53.3	7.5	CM	YM
SMAJ36A	SMAJ36CA	36	40	44.2	1	1	58.1	6.9	CP	YP
SMAJ40A	SMAJ40CA	40	44.4	49.1	1	1	64.5	6.2	CR	YR
SMAJ43A	SMAJ43CA	43	47.8	52.8	1	1	69.4	5.8	CT	YT
SMAJ45A	SMAJ45CA	45	50	55.3	1	1	72.7	5.5	CV	YV
SMAJ48A	SMAJ48CA	48	53.3	58.9	1	1	77.4	5.2	CX	YX
SMAJ51A	SMAJ51CA	51	56.7	62.7	1	1	82.4	4.9	CZ	YZ
SMAJ54A	SMAJ54CA	54	60	66.3	1	1	87.1	4.6	RE	ZE
SMAJ58A	SMAJ58CA	58	64.4	71.2	1	1	93.6	4.3	RG	ZG
SMAJ60A	SMAJ60CA	60	66.7	73.7	1	1	96.8	4.1	RK	ZK
SMAJ64A	SMAJ64CA	64	71.1	78.6	1	1	103.0	3.9	RM	ZM
SMAJ70A	SMAJ70CA	70	77.8	86	1	1	113.0	3.5	RP	ZP
SMAJ75A	SMAJ75CA	75	83.3	92.1	1	1	121.0	3.3	RR	ZR
SMAJ78A	SMAJ78CA	78	86.7	95.8	1	1	126.0	3.2	RT	ZT
SMAJ85A	SMAJ85CA	85	94.4	104	1	1	137.0	2.9	RV	ZV
SMAJ90A	SMAJ90CA	90	100	111	1	1	146.0	2.7	RX	ZX
SMAJ100A	SMAJ100CA	100	111	123	1	1	162.0	2.5	RZ	ZZ
SMAJ110A	SMAJ110CA	110	122	135	1	1	177.0	2.3	SE	VE
SMAJ120A	SMAJ120CA	120	133	147	1	1	193.0	2.1	SG	VG
SMAJ130A	SMAJ130CA	130	144	159	1	1	209.0	1.9	SK	VK
SMAJ150A	SMAJ150CA	150	167	185	1	1	243.0	1.6	SM	VM
SMAJ160A	SMAJ160CA	160	178	197	1	1	259.0	1.5	SP	VP
SMAJ170A	SMAJ170CA	170	189	209	1	1	275.0	1.5	SR	VR
SMAJ180A	SMAJ180CA	180	201	222	1	1	292.0	1.4	ST	VT
SMAJ200A	SMAJ200CA	200	224	247	1	1	324.0	1.2	SV	VV
SMAJ220A	SMAJ220CA	220	246	272	1	1	356.0	1.1	SX	VX
SMAJ250A	SMAJ250CA	250	279	309	1	1	405.0	1.0	SZ	VZ
SMAJ300A	SMAJ300CA	300	335	371	1	1	486.0	0.8	TE	UE
SMAJ350A	SMAJ350CA	350	391	432	1	1	567.0	0.7	TG	UG
SMAJ400A	SMAJ400CA	400	447	494	1	1	648.0	0.6	TK	UK
SMAJ440A	SMAJ440CA	440	492	543	1	1	713.0	0.6	TM	UM

Fig.1 Peak Pulse Power Rating Curve

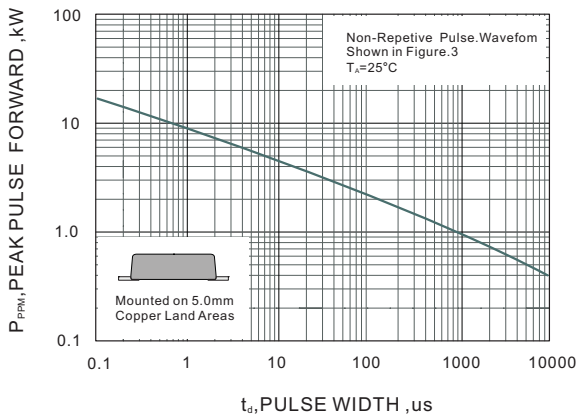


Fig.2 Forward Current Derating Curve

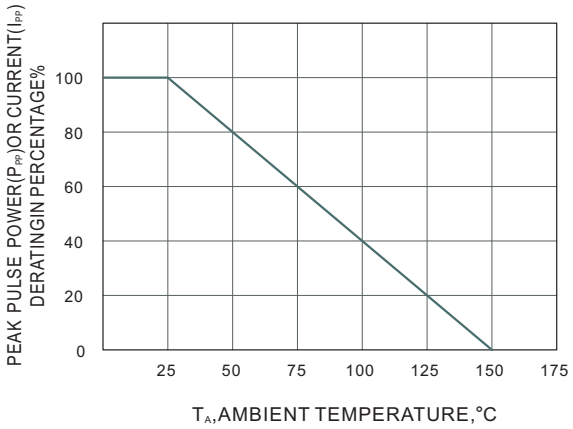


Fig.3 Pulse Waveform

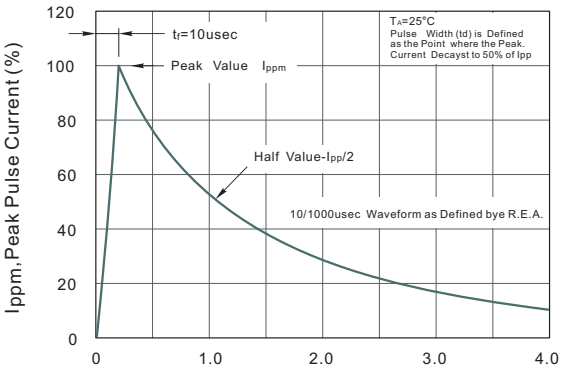
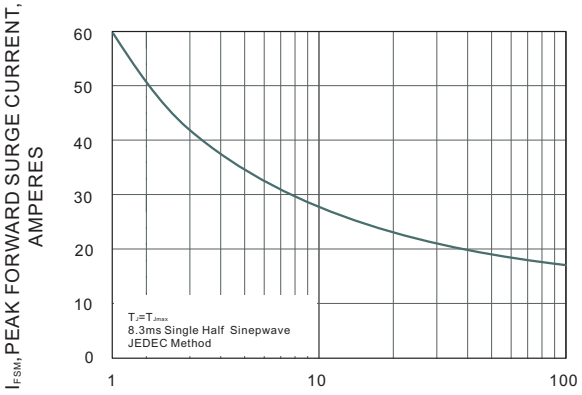
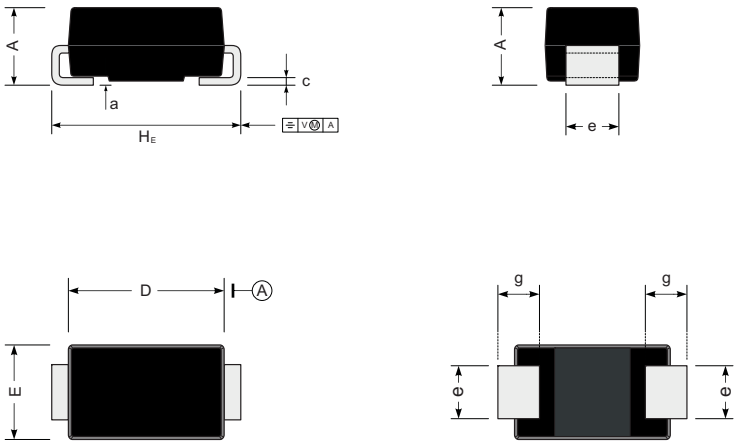


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current

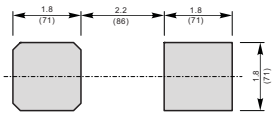


■ SMA



UNIT		A	D	E	H_E	c	e	g	a
mm	max	2.2	4.5	2.7	5.2	0.31	1.6	1.5	0.3
	min	1.9	4.0	2.3	4.7	0.15	1.3	0.9	
mil	max	87	181	106	205	12	63	59	12
	min	75	157	91	185	6	51	35	

■ The recommended mounting pad size



Unit : mm / (mil)