

SMAJ Series

Rev.C Nov.-2024

/ Descriptions

400W, 5.0V~440V SMA

Surface mount transient voltage suppressor power 400 watts,Stand-Off Voltage 5.0V~440V ,SMA package.

/ Features

Glass passivated junction, Low inductance, For surface mounted applications, HF product.

/ Applications

General purpose.

/ Equivalent Circuit

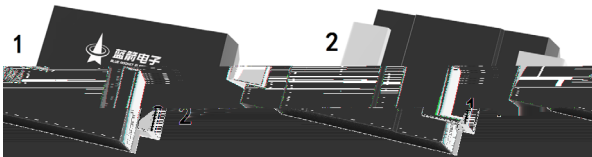


Unipolar



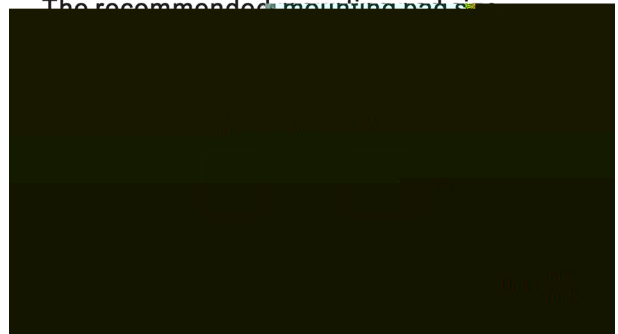
Bipolar

/ Pinning



PIN	DESCRIPTION
1	Cathode
2	Anode

The recommended mounting pad size



/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings($T_A=25$)

Parameter		Symbol	Rating	Unit
Peak Pulse Power Dissipation on $T_A=25^\circ\text{C}$ (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	V_{ESD1}	± 30	KV
	Air	V_{ESD2}	± 30	KV
Typical Thermal Resistance Junction to Ambient(Note 2)		R_{JA}	100	/W
Operating Junction Temperature and Storage Temperature Range		T_j, T_{stg}	-65 ~ +150	

Note:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^\circ\text{C}$ per Fig. 2.
2. Mounted on 5mm^2 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.

/ Electrical Characteristics(Ta=25)

Type		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current	Package	
			V _{BR} @ I _T		I _T	I _R @ V _{RRM}	V _C @ I _{PP}	I _{PP}	SMA	
		V _{RRM}	Min	Max					Device Marking Ccode	
UNI	BI	V	V	V	mA	uA	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

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DATA SHEET

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	uA	V	A	UNI	BI
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	SMAJ54CA	1	87.6	4.6	RE2.4	

/ Electrical Characteristic Curve

Fig.1 Peak Pulse Power Rating Curve

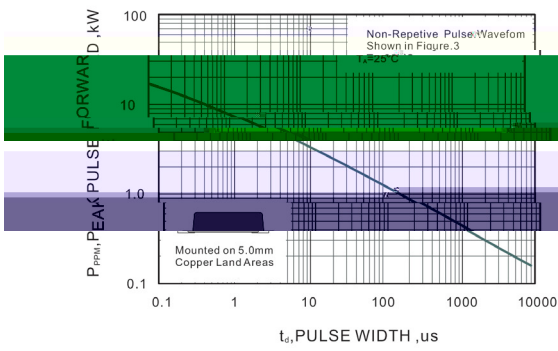


Fig.2 Forward Current Derating Curve

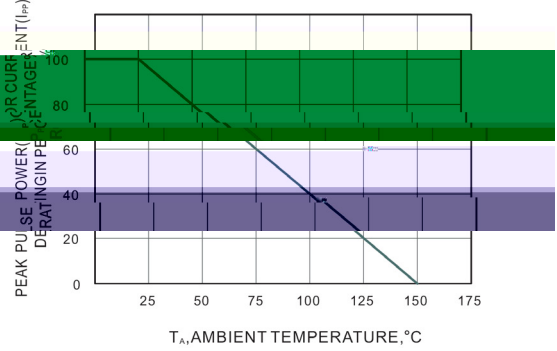


Fig.3 Pulse Waveform

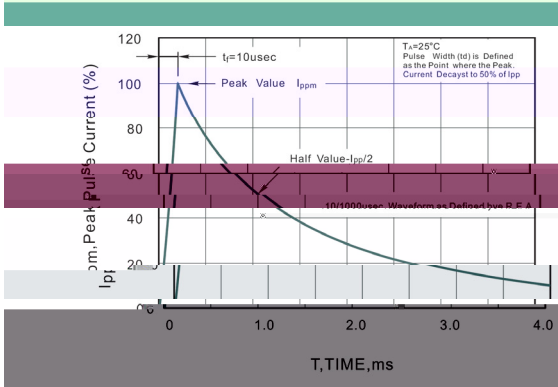
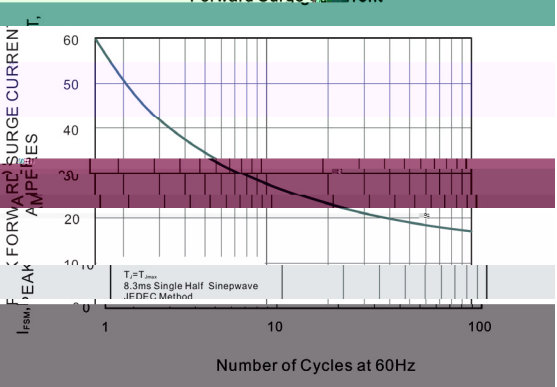
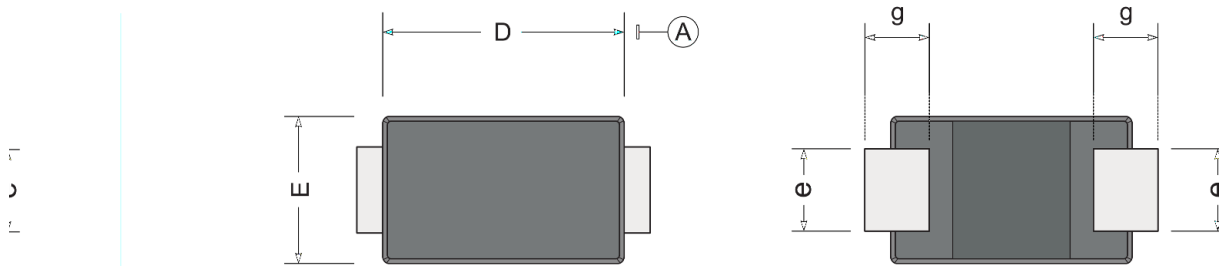
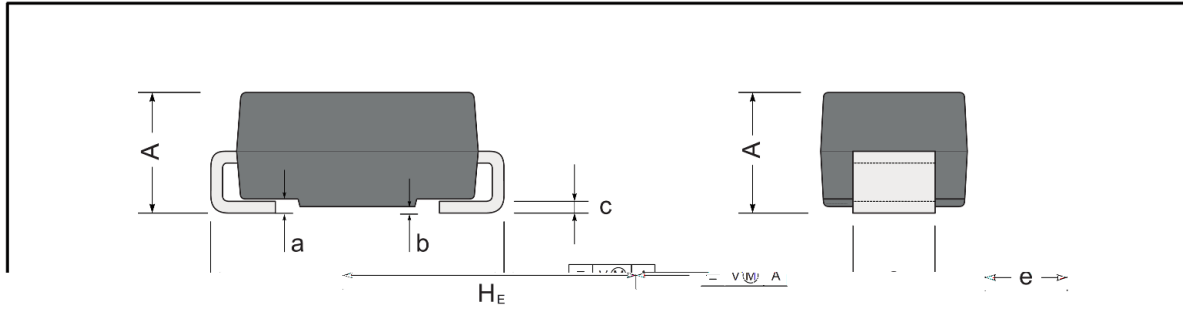


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current



/ Package Dimensions

SMA



UNIT		A	D	E	H _E	c	e	g	b	a
mm	max	2.2	4.5	2.7	5.2	0.31	1.6	1.5	0.2	0.1
	min	1.9	4.0	2.3	4.7	0.15	1.3	0.9	0.05	0.05
mil	max	87	181	108	209	12.6	63	63	8	4
	min	75	157	91	185	6	51	35	2	2

/ Marking Instructions



AE

Note:

AE Product Type Code

**** Lot No. Code, code change with Lot No

/ Marking Instructions



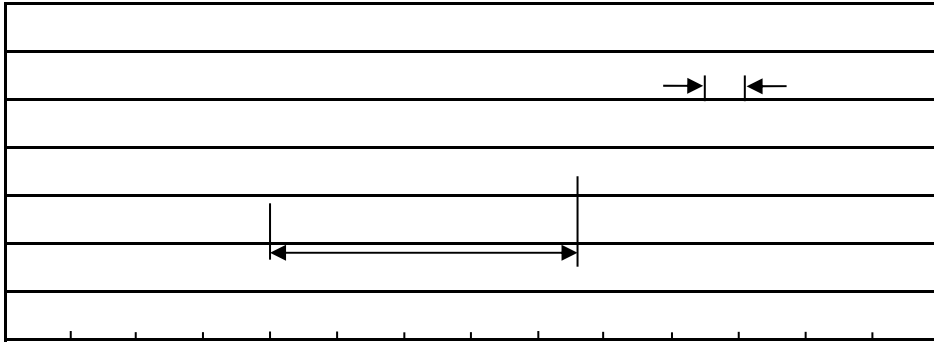
WE

Note:

WE Product Type Code

**** Lot No. Code, code change with Lot No

() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- | | | | | | |
|---|-------|-----|-----------|--------|---|
| 1 | 150 | 180 | 60 | 90sec; | 1.Preheating:150~180 , Time:60~90sec. |
| 2 | 245±5 | | 5±0.5sec; | | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |
| 3 | | 2 | 10 | /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
SMA	5,000	2	10,000	7	70,000	13 x12	336x336x40	380x335x366

/ Notices