

**描述 / Descriptions**

表面贴装瞬态电压抑制器功率：400W,反向浪涌电压：5.0V~440V，SMA 封装。

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

**特征 / Features**

玻璃钝化，低电感，适用表面贴装。无卤产品。

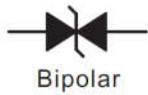
Glass passivated junction, Low inductance, For surface mounted applications. HF product.

**用途 / Applications**

一般用途.

General purpose.

**内部等效电路 / Equivalent Circuit**

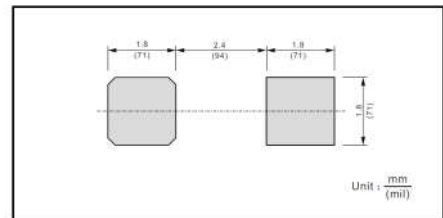


**引脚排列 / Pinning**



PIN	DESCRIPTION
1	Cathode
2	Anode

The recommended mounting pad size



**印章代码 / Marking**

见印章说明。See Marking Instructions.

**极限参数 / Absolute Maximum Ratings(Ta=25°C)**

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Peak Pulse Power Dissipation on T <sub>A</sub> =25°C (Note 1,2,4, Fig1)	P <sub>PPM</sub>	400	W
Peak Forward Surge Current (Note 3, Fig 4)	I <sub>FSM</sub> (UNI)	60	A
Peak Pulse Current on 10/1000 us waveform (Note 1, Fig 3)	I <sub>PPM</sub>	see Table 1	A
ESD Voltage per IEC6100-4-2	Contact	V <sub>ESD1</sub>	±30
	Air	V <sub>ESD2</sub>	±30
Typical Thermal Resistance Junction to Ambient(Note 2)	R <sub>θJA</sub>	100	°C/W
Operating Junction Temperature and Storage Temperature Range	T <sub>j</sub> , T <sub>stg</sub>	-65 ~ +150	°C

Note:

1. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub> = 25°C per Fig. 2.
2. Mounted on 5mm<sup>2</sup> 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.

**电性能参数 / Electrical Characteristics(Ta=25°C)**

Type		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current	Package	
			V <sub>BR</sub> @ I <sub>T</sub>						SMA	
		V <sub>R</sub> RM	Min	Max	I <sub>T</sub>	I <sub>R</sub> @ V <sub>R</sub> RM	V <sub>C</sub> @ I <sub>PP</sub>	I <sub>PP</sub>	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

**电性能参数 / Electrical Characteristics(Ta=25°C)**

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			V <sub>BR</sub> @ I <sub>T</sub>						SMA	
		V <sub>R</sub> RM	Min	Max	I <sub>T</sub>	I <sub>R</sub> @ V <sub>R</sub> RM	V <sub>C</sub> @ I <sub>PP</sub>	I <sub>PP</sub>	Device Marking Ccode	UNI
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	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	SMAJ300CA	350	391	432	1	1	567.0	0.7	TG	UG
SMAJ400A	SMAJ350CA	400	447	494	1	1	648.0	0.6	TK	UK
SMAJ440A	SMAJ400CA	440	492	543	1	1	713.0	0.6	TM	UM

电参数曲线图 / Electrical Characteristic Curve

Fig.1 Peak Pulse Power Rating Curve

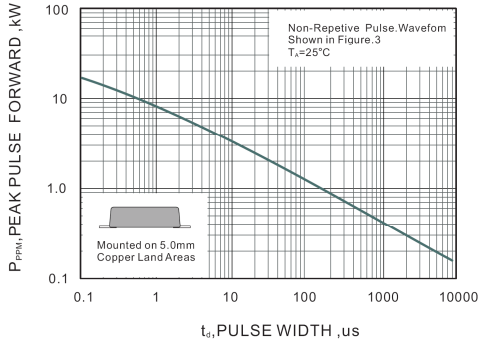


Fig.2 Forward Current Derating Curve

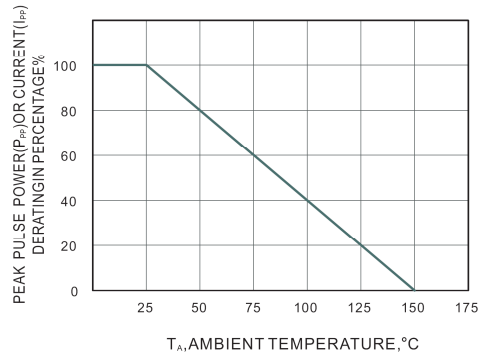


Fig.3 Pulse Waveform

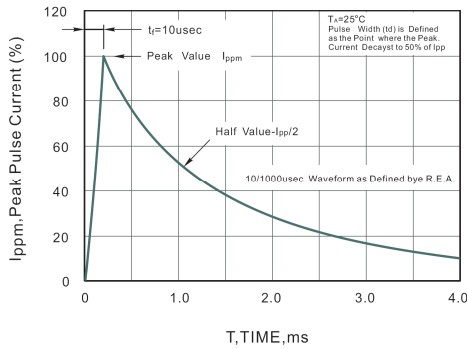
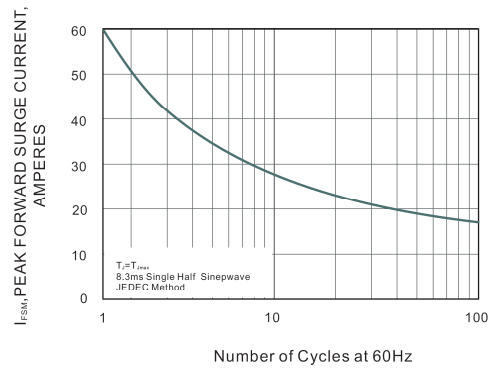
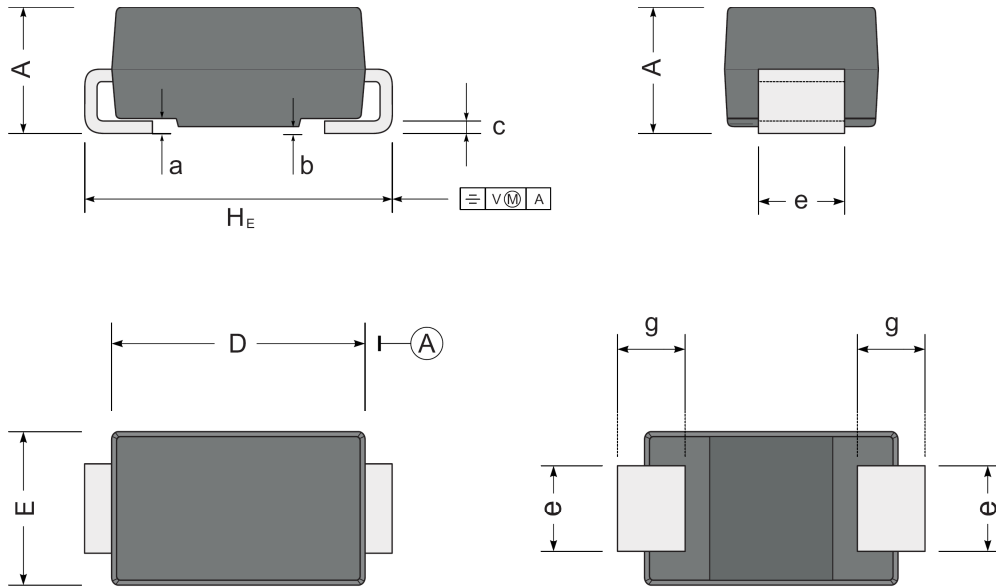


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current



外形尺寸图 / Package Dimensions

SMA



UNIT		A	D	E	H <sub>E</sub>	c	e	g	b	a
mm	max	2.2	4.5	2.7	5.2	0.31	1.6	1.5	0.2	0.3
	min	1.9	4.0	2.3	4.7	0.15	1.3	0.9	0.05	
mil	max	87	181	106	205	12	63	59	7.9	12
	min	75	157	91	185	6	51	35	2	

印章说明 / Marking Instructions



说明：

AE : 为型号代码

\*\*\*\* : 为生产批号追溯码，第1个\*为年月代码，后面3个\*为当月小批号代码

Note:

AE : Product Type Code

\*\*\*\* : Lot No. Code , The 1st \* means:YM Code , The last 3 \* means:little Lot No Code

印章说明 / Marking Instructions



说明：

WE : 为型号代码

\*\*\*\*\* : 为生产批号追溯码，第1个\*为年月代码，后面3个\*为当月小批号代码

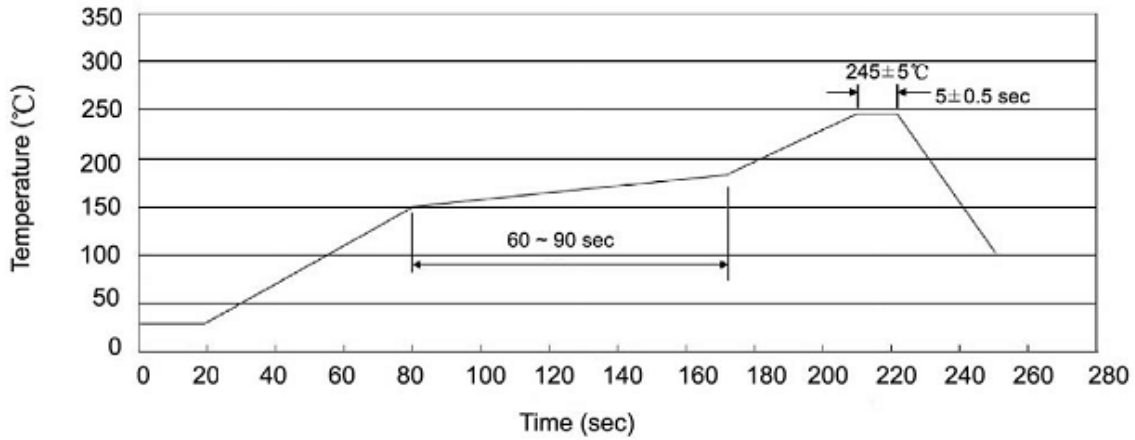
Note:

WE : Product Type Code

\*\*\*\*\* : Lot No. Code ,The 1st \* means:YM Code ,The last 3 \* means:little Lot No Code



**回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)**



说明：

- 1、预热温度 150 ~ 180°C，时间 60 ~ 90sec;
- 2、峰值温度 245±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2 ~ 10°C/sec.

Note:

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

**耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions**

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

**包装规格 / Packaging SPEC.**

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm <sup>3</sup> )		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SMA	5000	2	10000	7	70000	13" ×12	336X336X40	380X335X366

**使用说明 / Notices**