

描述 / Descriptions

400W 表面贴装瞬态电压抑制器, $V_{RMW}:5.0V\sim440V$, 薄型 SMAF 封装。
400W Surface Mount Transient Voltage Suppressor, Stand-Off Voltage: 5.0V~440V, SMAF thin package.

特征 / Features

为优化电路板空间运用小体积表面贴装, 玻璃钝化芯片, 电感低, 塑料阻燃等级 94V-0。无卤产品。
For surface mounted applications in order to optimize board space, Glass passivated junction, Low inductance, Plastic package has Underwriters Laboratory Flammability Classifications 94V-0. Halogen free product.

用途 / Applications

一般用途。
General purpose.

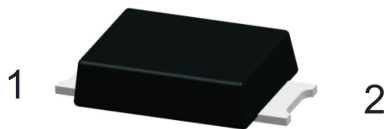
内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



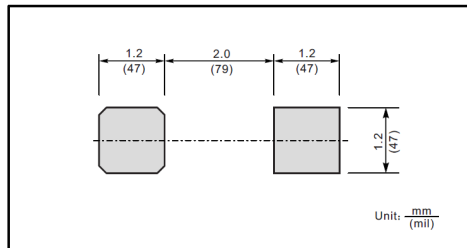
单极性



双极性

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 10/1000us waveform	P _{PPM}	400	W
Peak Forward Surge Current (Note 2, Fig 4)	I _{FSM}	60	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}	±8	kV
	V _{ESD2}	±15	kV
Operating Junction Temperature and Storage Temperature Range	T _j , T _{stg}	-55~+175	°C
Typical Thermal Resistance Junction to Ambient(Note 2)	R _{θJA}	120	°C/W

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above TA = 25°C 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.

SMAFJ5.0(C)A~SMAFJ440(C)A

Rev.A May.-2019



DATA SHEET

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

Type		Device Marking Ccode		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current	
					V _{RMW}	V _{BR@IT}					
						Min					Max
Uni	Bi	Uni	Bi	V	V	V	mA	μA	V	A	
SMAFJ5.0A	SMAFJ5.0CA	AE	WE	5.0	6.4	7.0	10	800	9.2	43.5	
SMAFJ6.0A	SMAFJ6.0CA	AG	WG	6.0	6.67	7.37	10	800	10.3	38.8	
SMAFJ6.5A	SMAFJ6.5CA	AK	WK	6.5	7.22	7.98	10	500	11.2	35.7	
SMAFJ7.0A	SMAFJ7.0CA	AM	WM	7.0	7.78	8.6	10	200	12.0	33.3	
SMAFJ7.5A	SMAFJ7.5CA	AP	WP	7.5	8.33	9.21	1.0	100	12.9	31.0	
SMAFJ8.0A	SMAFJ8.0CA	AR	WR	8.0	8.89	9.83	1.0	50	13.6	29.4	
SMAFJ8.5A	SMAFJ8.5CA	AT	WT	8.5	9.44	10.4	1.0	20	14.4	27.8	
SMAFJ9.0A	SMAFJ9.0CA	AV	WV	9.0	10	11.1	1.0	10	15.4	26.0	
SMAFJ10A	SMAFJ10CA	AX	WX	10	11.1	12.3	1.0	5	17.0	23.5	
SMAFJ11A	SMAFJ11CA	AZ	WZ	11	12.2	13.5	1.0	1.0	18.2	22.0	
SMAFJ12A	SMAFJ12CA	BE	XE	12	13.3	14.7	1.0	1.0	19.9	20.1	
SMAFJ13A	SMAFJ13CA	BG	XG	13	14.4	15.9	1.0	1.0	21.5	18.6	
SMAFJ14A	SMAFJ14CA	BK	XK	14	15.6	17.2	1.0	1.0	23.2	17.2	
SMAFJ15A	SMAFJ15CA	BM	XM	15	16.7	18.5	1.0	1.0	24.4	16.4	
SMAFJ16A	SMAFJ16CA	BP	XP	16	17.8	19.7	1.0	1.0	26.0	15.4	
SMAFJ17A	SMAFJ17CA	BR	XR	17	18.9	20.9	1.0	1.0	27.6	14.5	
SMAFJ18A	SMAFJ18CA	BT	XT	18	20	22.1	1.0	1.0	29.2	13.7	
SMAFJ20A	SMAFJ20CA	BV	XV	20	22.2	24.5	1.0	1.0	32.4	12.3	
SMAFJ22A	SMAFJ22CA	BX	XX	22	24.4	26.9	1.0	1.0	35.5	11.3	
SMAFJ24A	SMAFJ24CA	BZ	XZ	24	26.7	29.5	1.0	1.0	38.9	10.3	
SMAFJ26A	SMAFJ26CA	CE	YE	26	28.9	31.9	1.0	1.0	42.1	9.5	
SMAFJ28A	SMAFJ28CA	CG	YG	28	31.1	34.4	1.0	1.0	45.4	8.8	
SMAFJ30A	SMAFJ30CA	CK	YK	30	33.3	36.8	1.0	1.0	48.4	8.3	

SMAFJ5.0(C)A~SMAFJ440(C)A

Rev.A May.-2019



DATA SHEET

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

Type		Device Marking Ccode		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current	
					V _{RMW}	V _{BR@IT}					
						Min					Max
Uni	Bi	Uni	Bi	V	V	V	mA	μA	V	A	
SMAFJ33A	SMAFJ33CA	CM	YM	33	36.7	40.6	1.0	1.0	53.3	7.5	
SMAFJ36A	SMAFJ36CA	CP	YP	36	40	44.2	1.0	1.0	58.1	6.9	
SMAFJ40A	SMAFJ40CA	CR	YR	40	44.4	49.1	1.0	1.0	64.5	6.2	
SMAFJ43A	SMAFJ43CA	CT	YT	43	47.8	52.8	1.0	1.0	69.4	5.8	
SMAFJ45A	SMAFJ45CA	CV	YV	45	50	55.3	1.0	1.0	72.7	5.5	
SMAFJ48A	SMAFJ48CA	CX	YX	48	53.3	58.9	1.0	1.0	77.4	5.2	
SMAFJ51A	SMAFJ51CA	CZ	YZ	51	56.7	62.7	1.0	1.0	82.4	4.9	
SMAFJ54A	SMAFJ54CA	RE	ZE	54	60	66.3	1.0	1.0	87.1	4.6	
SMAFJ58A	SMAFJ58CA	RG	ZG	58	64.4	71.2	1.0	1.0	93.6	4.3	
SMAFJ60A	SMAFJ60CA	RK	ZK	60	66.7	73.7	1.0	1.0	96.8	4.1	
SMAFJ64A	SMAFJ64CA	RM	ZM	64	71.1	78.6	1.0	1.0	103.0	3.9	
SMAFJ70A	SMAFJ70CA	RP	ZP	70	77.8	86	1.0	1.0	113.0	3.5	
SMAFJ75A	SMAFJ75CA	RR	ZR	75	83.3	92.1	1.0	1.0	121.0	3.3	
SMAFJ78A	SMAFJ78CA	RT	ZT	78	86.7	95.8	1.0	1.0	126.0	3.2	
SMAFJ85A	SMAFJ85CA	RV	ZV	85	94.4	104	1.0	1.0	137.0	2.9	
SMAFJ90A	SMAFJ90CA	RX	ZX	90	100	111	1.0	1.0	146.0	2.7	
SMAFJ100A	SMAFJ100CA	RZ	ZZ	100	111	123	1.0	1.0	162.0	2.5	
SMAFJ110A	SMAFJ110CA	SE	VE	110	122	135	1.0	1.0	177.0	2.3	
SMAFJ120A	SMAFJ120CA	SG	VG	120	133	147	1.0	1.0	193.0	2.1	
SMAFJ130A	SMAFJ130CA	SK	VK	130	144	159	1.0	1.0	209.0	1.9	
SMAFJ150A	SMAFJ150CA	SM	VM	150	167	185	1.0	1.0	243.0	1.6	
SMAFJ160A	SMAFJ160CA	SP	VP	160	178	197	1.0	1.0	259.0	1.5	
SMAFJ170A	SMAFJ170CA	SR	VR	170	189	209	1.0	1.0	275.0	1.5	
SMAFJ180A	SMAFJ180CA	ST	VT	180	201	222	1.0	1.0	292.0	1.4	

SMAFJ5.0(C)A~SMAFJ440(C)A

Rev.A May.-2019



DATA SHEET

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

Type		Device Marking Ccode		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current	
					V _{RMW}	V _{BR@IT}					
						Min					Max
Uni	Bi	Uni	Bi	V	V	V	mA	μA	V	A	
SMAFJ200A	SMAFJ200CA	SV	V V	200	224	247	1.0	1.0	324.0	1.2	
SMAFJ220A	SMAFJ220CA	SX	VX	220	246	272	1.0	1.0	356	1.1	
SMAFJ250A	SMAFJ250CA	SZ	VZ	250	279	309	1.0	1.0	405.0	1.0	
SMAFJ300A	SMAFJ300CA	TE	UE	300	335	371	1.0	1.0	486.0	0.8	
SMAFJ350A	SMAFJ350CA	TG	UG	350	391	432	1.0	1.0	567.0	0.7	
SMAFJ400A	SMAFJ400CA	TK	UK	400	447	494	1.0	1.0	648.0	0.6	
SMAFJ440A	SMAFJ440CA	TM	UM	440	492	543	1.0	1.0	713.0	0.6	

电参数曲线图 / Electrical Characteristic Curve

Fig.1 Peak Pulse Power Rating Curve

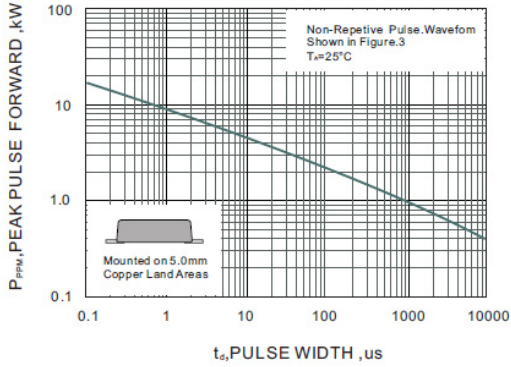


Fig.2 Forward Current Derating Curve

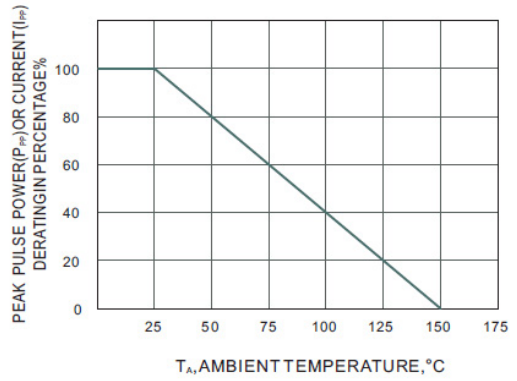


Fig.3 Pulse Waveform

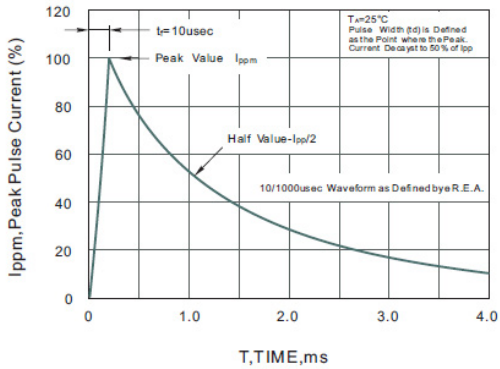
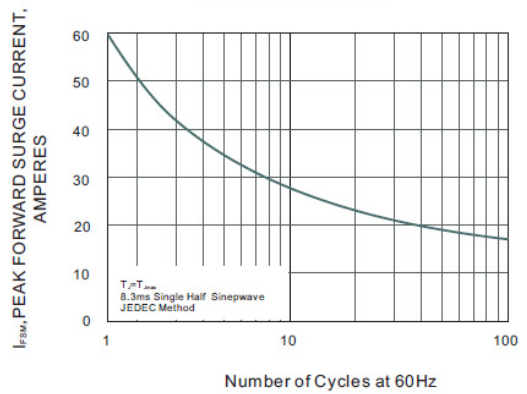
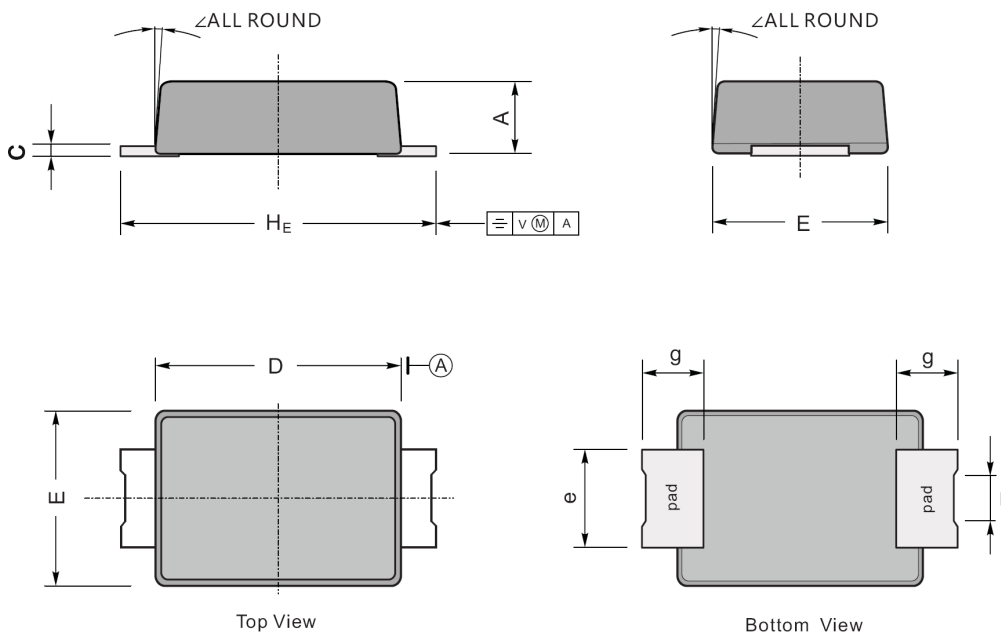


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current

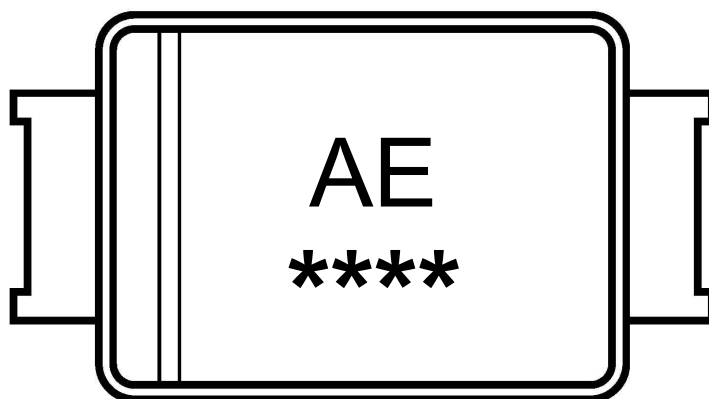


外形尺寸图 / Package Dimensions



UNIT		A	C	D	E	e	g	H_E	b	\angle
mm	max	1.2	0.20	3.7	2.7	1.6	1.2	4.9	1.05	7°
	min	0.9	0.12	3.3	2.4	1.3	0.8	4.4	0.65	
mil	max	47	7.9	146	106	63	47	193	41	
	min	35	4.7	130	94	51	31	173	26	

单极性印章图



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

双极性印章图



说明：

WE： 为型号代码

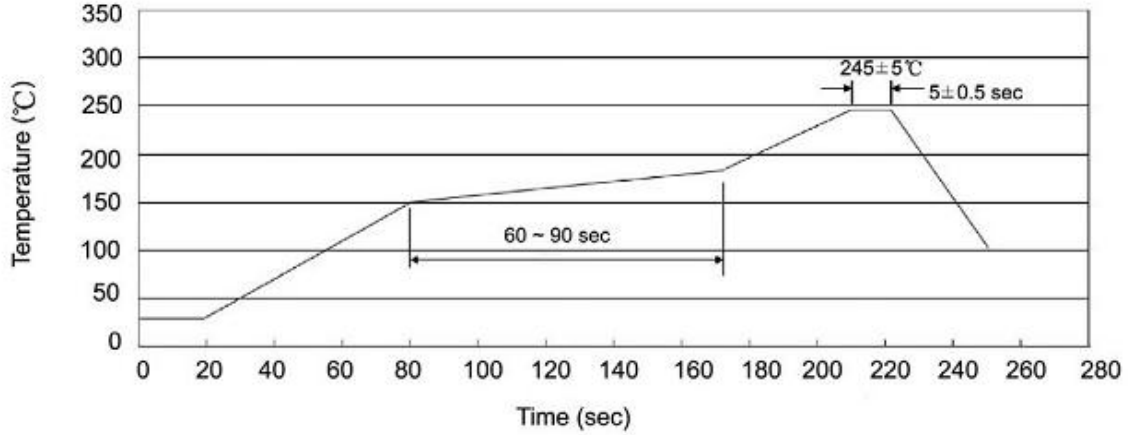
****： 为生产批号追溯码，第1个*为年月代码，后面3个*为当月小批号代码

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 ³)		
	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
SMAF	3000	5	15000	5	75000	7" ×11	185X180X105	390X385X205

使用说明 / Notices