

SMF5.0(C)A~SMF440(C)A

Rev.B May.-2024

描述 / Descriptions

200W 表面贴装瞬态电压抑制器， $V_{RMW}:5.0V\sim440V$ ，薄型 SOD-123FL 封装。
 200W Surface Mount Transient Voltage Suppressor, Stand-Off Voltage: 5.0V~440V, SOD-123FL 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,HF Product.

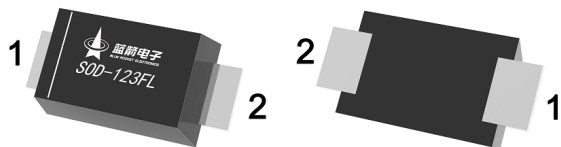
用途 / Applications

一般用途。
 General purpose.

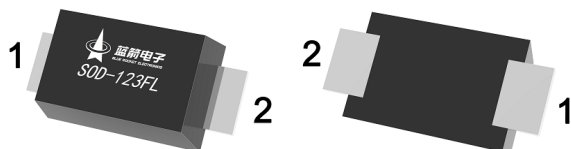
内部等效电路 / Equivalent Circuit



引脚排列 / Pinning



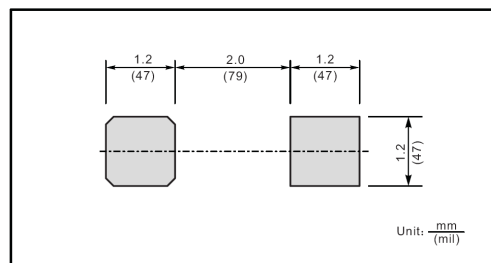
单极性



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.

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Rev.B May.-2024



DATA SHEET

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 Ta=25°C(Note1,2,5,Fig1)	P _{PPM}	200	W
Peak Forward Surge Current(Note3)	I _{FSM(UNI)}	20	A
Peak Pulse Current on 10/1000us waveform (Note1)Fig2	I _{PPM}	See Table 1	A
Steady State Power Dissipation (Note4)	P _{M(AV)}	1	W
Operating Junction and Storage Range	T _j , T _{stg}	-55~150	°C
ESD Voltage per IEC61000-4-2 Contact Air	V _{ESD1}	±30	kV
	V _{ESD2}	±30	
ESD Voltage (HBM)	V _{ESD}	16	kV
Typical Thermal Resistance	R _{θJA}	105	°C/W
	R _{θJC}	25	
	R _{θJL}	32	

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. 8.3ms single half sinewave, or equivalent square wave duty cycle=4 pulses per minutes maximum
4. lead temperature at T_L=75°C
5. Peak pulse powe. waveform is tp=10/1000us
6. A transient suppressor is selected according to the working peak reverse voltage(V_{rwm}), Which Should be equal to or greater than the DC or continuous peak operating voltage level
7. P.C.B. mounted with 0.2" X 0.2" (5 X 5 mm) copper pad areas.

SMF5.0(C)A~SMF440(C)A

Rev.B May.-2024



DATA SHEET

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

Type		Marking		Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
					V _{RMW}	V _{BR@IT}				
Uni	Bi	Uni	Bi	V		Min	Max	I _T	I _{R@VRMW}	V _{C@IPP}
SMF5.0A	SMF5.0CA	AE	CAE	5.0	6.4	7.0	10	400	9.2	21.7
SMF6.0A	SMF6.0CA	AG	CAG	6.0	6.67	7.37	10	400	10.3	19.4
SMF6.5A	SMF6.5CA	AK	CAK	6.5	7.22	7.98	10	250	11.2	17.9
SMF7.0A	SMF7.0CA	AM	CAM	7.0	7.78	8.6	10	100	12	16.7
SMF7.5A	SMF7.5CA	AP	CAP	7.5	8.33	9.21	1.0	50	12.9	15.5
SMF8.0A	SMF8.0CA	AR	CAR	8.0	8.89	9.83	1.0	25	13.6	14.7
SMF8.5A	SMF8.5CA	AT	CAT	8.5	9.44	10.4	1.0	10	14.4	13.9
SMF9.0A	SMF9.0CA	AV	CAV	9.0	10	11.1	1.0	5.0	15.4	13.0
SMF10A	SMF10CA	AX	CAX	10	11.1	12.3	1.0	2.5	17	11.8
SMF11A	SMF11CA	AZ	CAZ	11	12.2	13.5	1.0	2.5	18.2	11.0
SMF12A	SMF12CA	BE	CBE	12	13.3	14.7	1.0	2.5	19.9	10.1
SMF13A	SMF13CA	BG	CBG	13	14.4	15.9	1.0	1.0	21.5	9.3
SMF14A	SMF14CA	BK	CBK	14	15.6	17.2	1.0	1.0	23.2	8.6
SMF15A	SMF15CA	BM	CBM	15	16.7	18.5	1.0	1.0	24.4	8.2
SMF16A	SMF16CA	BP	CBP	16	17.8	19.7	1.0	1.0	26	7.7
SMF17A	SMF17CA	BR	CBR	17	18.9	20.9	1.0	1.0	27.6	7.2
SMF18A	SMF18CA	BT	CBT	18	20	22.1	1.0	1.0	29.2	6.8
SMF20A	SMF20CA	BV	CBV	20	22.2	24.5	1.0	1.0	32.4	6.2
SMF22A	SMF22CA	BX	CBX	22	24.4	26.9	1.0	1.0	35.5	5.6
SMF24A	SMF24CA	BZ	CBZ	24	26.7	29.5	1.0	1.0	38.9	5.1
SMF26A	SMF26CA	CE	CCE	26	28.9	31.9	1.0	1.0	42.1	4.8
SMF28A	SMF28CA	CG	CCG	28	31.1	34.4	1.0	1.0	45.4	4.4
SMF30A	SMF30CA	CK	CCK	30	33.3	36.8	1.0	1.0	48.4	4.1
SMF33A	SMF33CA	CM	CCM	33	36.7	40.6	1.0	1.0	53.3	3.8
SMF36A	SMF36CA	CP	CCP	36	40	44.2	1.0	1.0	58.1	3.4

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Rev.B May.-2024



DATA SHEET

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Type		Marking		Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
					V _{RMW}	V _{BR@IT}				
				Uni		Bi	Uni	Bi	V	Min
SMF40A	SMF40CA	CR	CCR	40	44.4	49.1	1.0	1.0	64.5	3.1
SMF43A	SMF43CA	CT	CCT	43	47.8	52.8	1.0	1.0	69.4	2.9
SMF45A	SMF45CA	CV	CCV	45	50	55.3	1.0	1.0	72.7	2.8
SMF48A	SMF48CA	CX	CCX	48	53.3	58.9	1.0	1.0	77.4	2.6
SMF51A	SMF51CA	CZ	CCZ	51	56.7	62.7	1.0	1.0	82.4	2.4
SMF54A	SMF54CA	DE	CDE	54	60	66.3	1.0	1.0	87.1	2.3
SMF58A	SMF58CA	DG	CDG	58	64.4	71.2	1.0	1.0	93.6	2.1
SMF60A	SMF60CA	DK	CDK	60	66.7	73.7	1.0	1.0	96.8	1.8
SMF64A	SMF64CA	DM	CDM	64	71.1	78.6	1.0	1.0	103	1.7
SMF70A	SMF70CA	DP	CDP	70	77.8	86	1.0	1.0	113	1.5
SMF75A	SMF75CA	DR	CDR	75	83.3	92.1	1.0	1.0	121	1.4
SMF78A	SMF78CA	DT	CDT	78	86.7	95.8	1.0	1.0	126	1.4
SMF85A	SMF85CA	DV	CDV	85	94.4	104	1.0	1.0	137	1.3
SMF90A	SMF90CA	DX	CDX	90	100	111	1.0	1.0	146	1.2
SMF100A	SMF100CA	DZ	CDZ	100	111	123	1.0	1.0	162	1.1
SMF110A	SMF110CA	EE	CEE	110	122	135	1.0	1.0	177	1.0
SMF120A	SMF120CA	EG	CEG	120	133	147	1.0	1.0	193	0.9
SMF130A	SMF130CA	EK	CEK	130	144	159	1.0	1.0	209	0.8
SMF150A	SMF150CA	EM	CEM	150	167	185	1.0	1.0	243	0.7
SMF160A	SMF160CA	EP	CEP	160	178	197	1.0	1.0	259	0.7
SMF170A	SMF170CA	ER	CER	170	189	209	1.0	1.0	275	0.6
SMF180A	SMF180CA	ET	CET	180	201	222	1.0	1.0	292	0.6
SMF200A	SMF200CA	EX	CEX	200	224	247	1.0	1.0	324	0.5
SMF220A	SMF220CA	E22	CE22	220	246	272	1.0	1.0	356	0.5

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					V _{RMW}	V _{BR@IT}				
				Min		Max	I _T	I _{R@VRMW}	V _{C@IPP}	I _{PP}
Uni	Bi	Uni	Bi	V	V	V	mA	μA	V	A
SMF250A	SMF250CA	E25	CE25	250	279	309	1.0	1.0	405	0.5
SMF300A	SMF300CA	E30	CE30	300	335	371	1.0	1.0	486	0.45
SMF350A	SMF350CA	E35	CE35	350	391	432	1.0	1.0	567	0.4
SMF400A	SMF400CA	E40	CE40	400	447	494	1.0	1.0	648	0.35
SMF440A	SMF440CA	E44	CE44	440	492	543	1.0	1.0	713	0.3

电参数曲线图 / Electrical Characteristic Curve

Fig.1 Peak Pulse Power Rating Curve

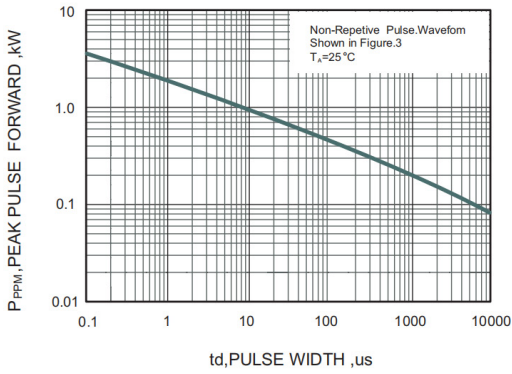


Fig.2 Forward Current Derating Curve

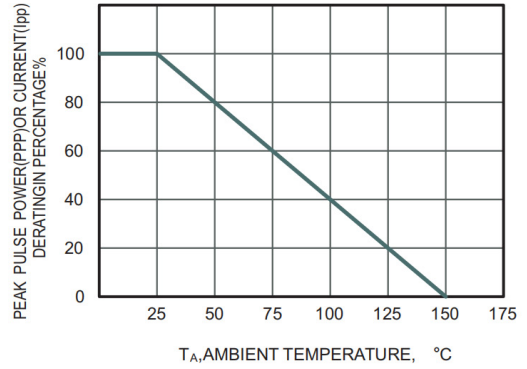


Fig.3 Pulse Waveform

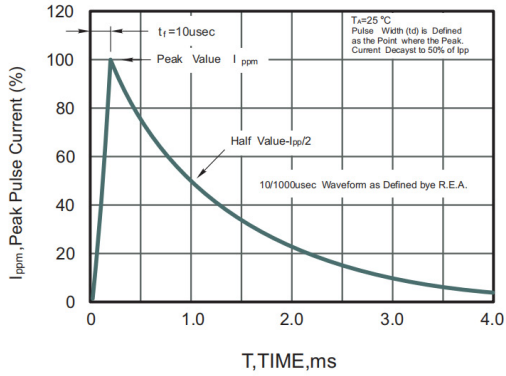
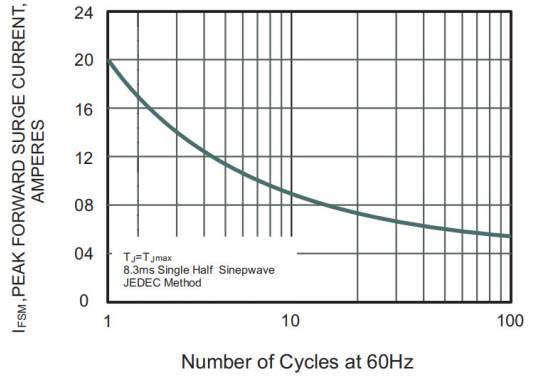
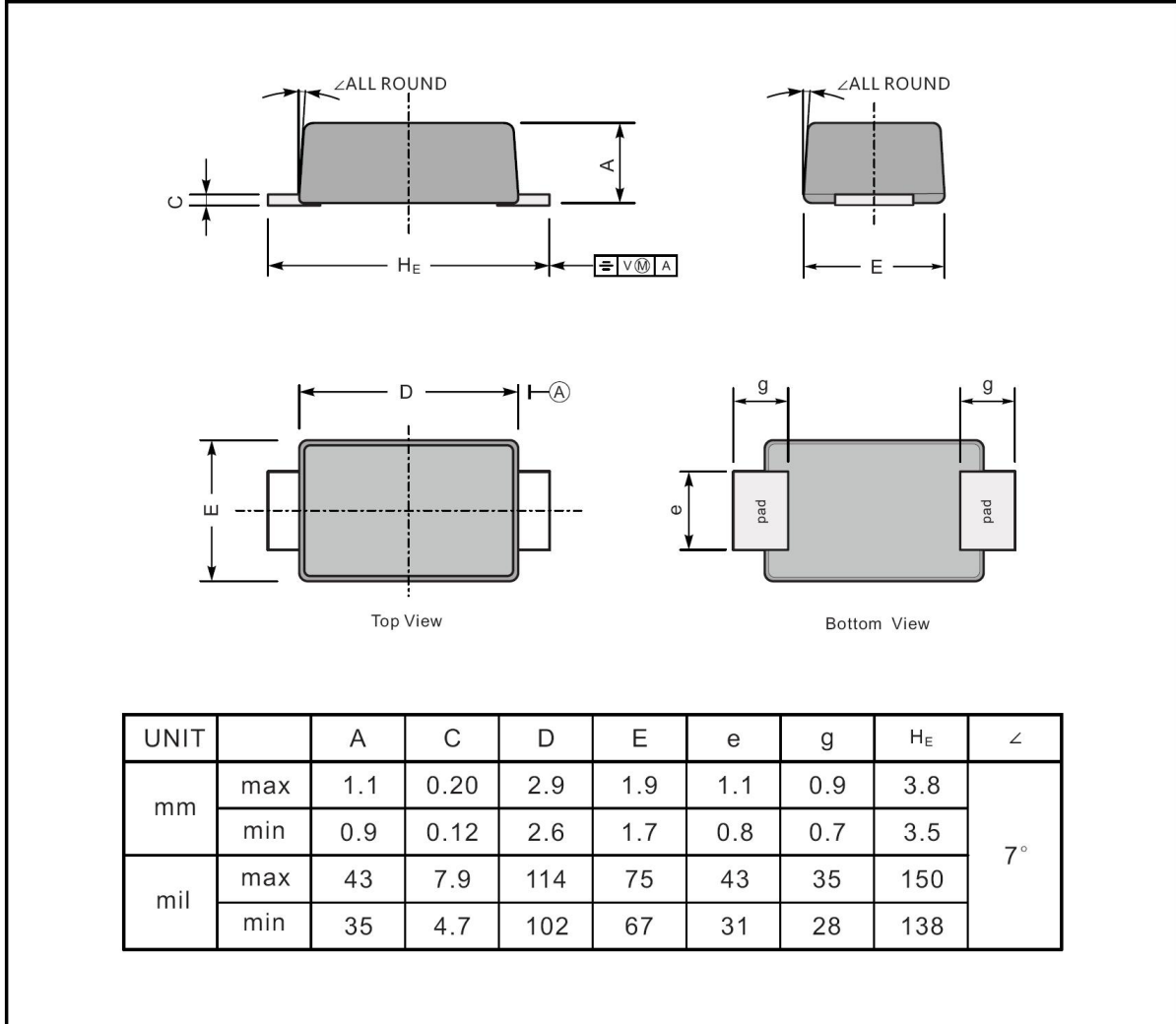


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current



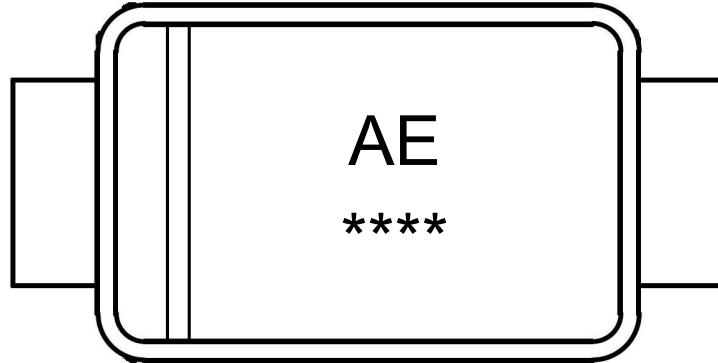
外形尺寸图 / Package Dimensions

SOD-123FL



印章说明 / Marking Instructions

单极性印章图



说明：

AE： 为型号代码

****： 为生产批号代码，随生产批号变化

Note:

AE： Product Type Code

****： 为生产批号代码，随生产批号变化

双极性印章图



说明：

CAE： 为型号代码

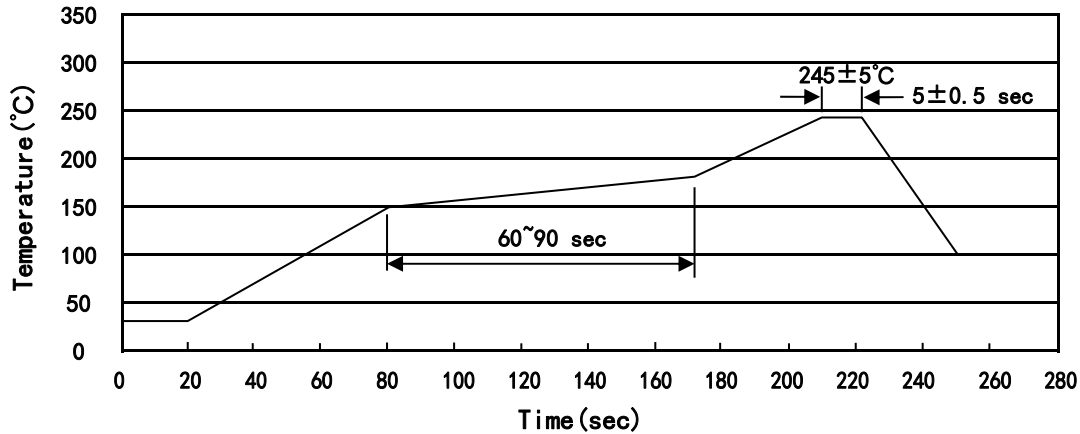
****： 为生产批号代码，随生产批号变化

Note:

CAE： Product Type Code

****： 为生产批号代码，随生产批号变化

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
SOD-123FL	3,000	8	24,000	6	144,000	7" ×8	185×180×105	390×385×205

使用说明 / Notices