

描述 / Descriptions

400W 表面贴装瞬态电压抑制器，适用于 8.5V-170V 电压宽范围，薄型 SMAF 封装。
Surface mount transient voltage suppressor power 400W, Stand-Off Voltage:8.5V~170V,SMAF thin package.

特征 / Features

玻璃钝化功能，低电感。无卤产品。
Glass passivated junction,Low inductance.Halogen free product.。

用途 / Applications

一般用途。
General purpose.

内部等效电路 / Equivalent Circuit

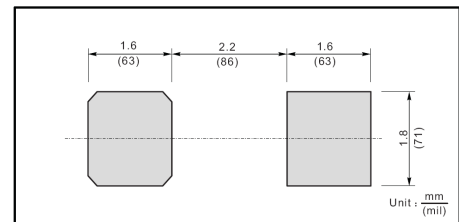


引脚排列 / Pinning



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 _A =25°C (Note1,2,4,Fig1)	P _{PPM}	400	W
Peak Forward Surge Current (Note 3, Fig5)	I _{FSM}	40	A
Peak Pulse Current on 10/1000 us waveform (Note1, Fig2)	I _{PPM}	see Table 1	A
Typical Junction capacitance at V _R =4V, f=1MHz	C _j	390	pF
ESD Voltage per IEC6100-4-2 Contact Air	V _{ESD1}	±8	kV
	V _{ESD2}	±15	
Typical Thermal Resistance(Note2)	R _{θJA}	150	°C/W
Operating Junction Temperature and Storage Temperature Range	T _J , T _{stg}	-55~150	°C

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above T_A= 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.

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

Type	Marking	Reverse Stand-off Voltage	Breakdown Voltage		Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
		V _{RMW}	V _{BR@I_T}		I _T	I _{R@V_{RWM}}	V _{C@I_{PP}}	I _{PP}
			Min	Max				
		V	V	V	mA	µA	V	A
P4SMAFJ8.5A	HT	8.5	9.44	10.82	1.0	10	14.4	27.7
P4SMAFJ9.0A	HV	9.0	10.0	11.5	1.0	5	15.4	26.0
P4SMAFJ10A	HX	10	11.1	12.8	1.0	5	17.0	23.5
P4SMAFJ11A	HZ	11	12.2	14.0	1.0	1.0	18.2	22.0
P4SMAFJ12A	IE	12	13.3	15.6	1.0	1.0	19.9	20.1
P4SMAFJ13A	IG	13	14.4	16.5	1.0	1.0	21.5	18.6
P4SMAFJ14A	IK	14	15.6	17.9	1.0	1.0	23.2	17.2
P4SMAFJ15A	IM	15	16.7	19.2	1.0	1.0	24.4	16.4

P4SMAFJ8.5A~P4SMAFJ170A

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

Type	Marking	Reverse Stand-off Voltage	Breakdown Voltage		Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
		V _{RWM}	V _{BR@I_T}		I _T	I _{R@V_{RWM}}	V _{C@I_{PP}}	I _{PP}
			Min	Max				
P4SMAFJ16A	IP	16	17.8	20.5	1.0	1.0	26.0	15.3
P4SMAFJ17A	IR	17	18.9	21.7	1.0	1.0	27.6	14.5
P4SMAFJ18A	IT	18	20.0	23.3	1.0	1.0	29.2	13.7
P4SMAFJ20A	IV	20	22.2	25.5	1.0	1.0	32.4	12.3
P4SMAFJ22A	IX	22	24.4	28.0	1.0	1.0	35.5	11.2
P4SMAFJ24A	IZ	24	26.7	30.7	1.0	1.0	38.9	10.3
P4SMAFJ26A	JE	26	28.9	33.2	1.0	1.0	42.1	9.5
P4SMAFJ28A	JG	28	31.1	35.8	1.0	1.0	45.4	8.8
P4SMAFJ30A	JK	30	33.3	38.3	1.0	1.0	48.4	8.3
P4SMAFJ33A	JM	33	36.7	42.2	1.0	1.0	53.3	7.5
P4SMAFJ36A	JP	36	40.0	46.0	1.0	1.0	58.1	6.9
P4SMAFJ40A	JR	40	44.4	51.1	1.0	1.0	64.5	6.2
P4SMAFJ43A	JT	43	47.8	54.9	1.0	1.0	69.4	5.7
P4SMAFJ45A	JV	45	50.0	57.5	1.0	1.0	72.7	5.5
P4SMAFJ48A	JX	48	53.3	61.3	1.0	1.0	77.4	5.2
P4SMAFJ51A	JZ	51	56.7	65.2	1.0	1.0	82.4	4.9
P4SMAFJ54A	RE	54	60.0	69.0	1.0	1.0	87.1	4.6
P4SMAFJ58A	RG	58	64.4	74.1	1.0	1.0	93.6	4.3
P4SMAFJ60A	RK	60	66.7	76.7	1.0	1.0	96.8	4.1
P4SMAFJ64A	RM	64	71.1	81.8	1.0	1.0	103	3.9
P4SMAFJ70A	RP	70	77.8	89.5	1.0	1.0	113	3.5
P4SMAFJ75A	RR	75	83.3	95.8	1.0	1.0	121	3.3
P4SMAFJ78A	RT	78	86.7	99.7	1.0	1.0	126	2.2

P4SMAFJ8.5A~P4SMAFJ170A

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

Type	Marking	Reverse Stand-off Voltage	Breakdown Voltage		Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
		V _{RWM}	V _{BR@I_T}		I _T	I _{R@V_{RWM}}	V _{C@I_{PP}}	I _{PP}
			Min	Max				
P4SMAFJ85A	RV	85	94.4	108	1.0	1.0	137	2.9
P4SMAFJ90A	RX	90	100	116	1.0	1.0	146	2.7
P4SMAFJ100A	RZ	100	111	128	1.0	1.0	162	2.5
P4SMAFJ110A	SE	110	122	141	1.0	1.0	177	2.3
P4SMAFJ120A	SG	120	133	153	1.0	1.0	193	2.0
P4SMAFJ130A	SK	130	144	166	1.0	1.0	209	1.9
P4SMAFJ150A	SM	150	167	193	1.0	1.0	243	1.6
P4SMAFJ160A	SP	160	178	205	1.0	1.0	259	1.5
P4SMAFJ170A	SR	170	189	218	1.0	1.0	275	1.4

电参数曲线图 / Electrical Characteristic Curve

Fig.1 Peak Pulse Power Rating Curve

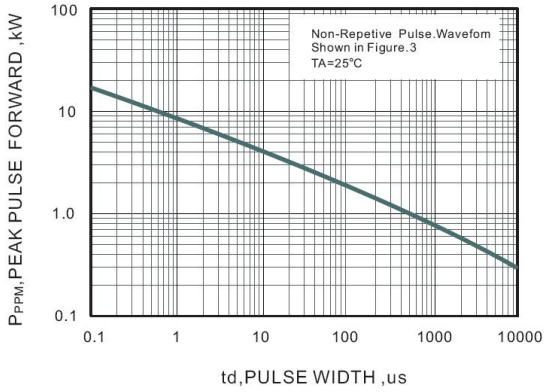


Fig.2 Forward Current Derating Curve

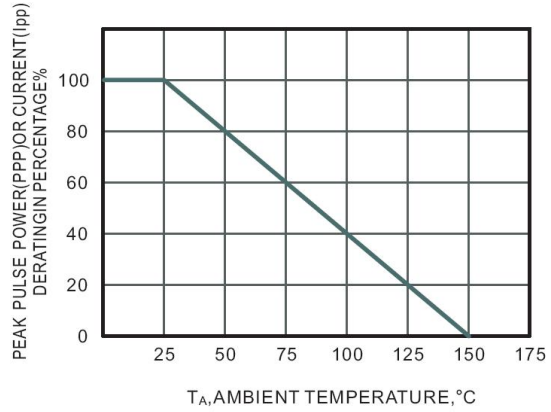


Fig.3 Pulse Waveform

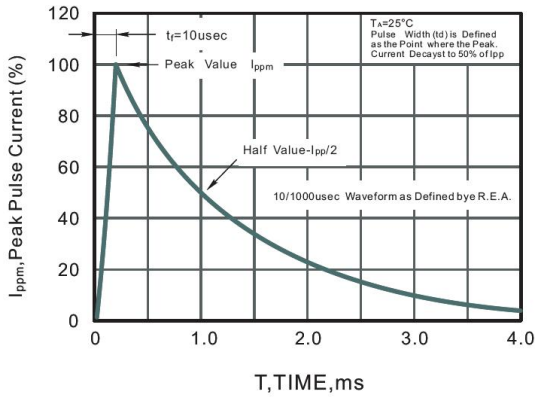
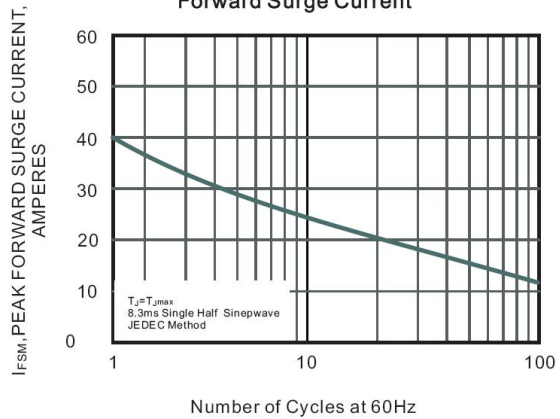
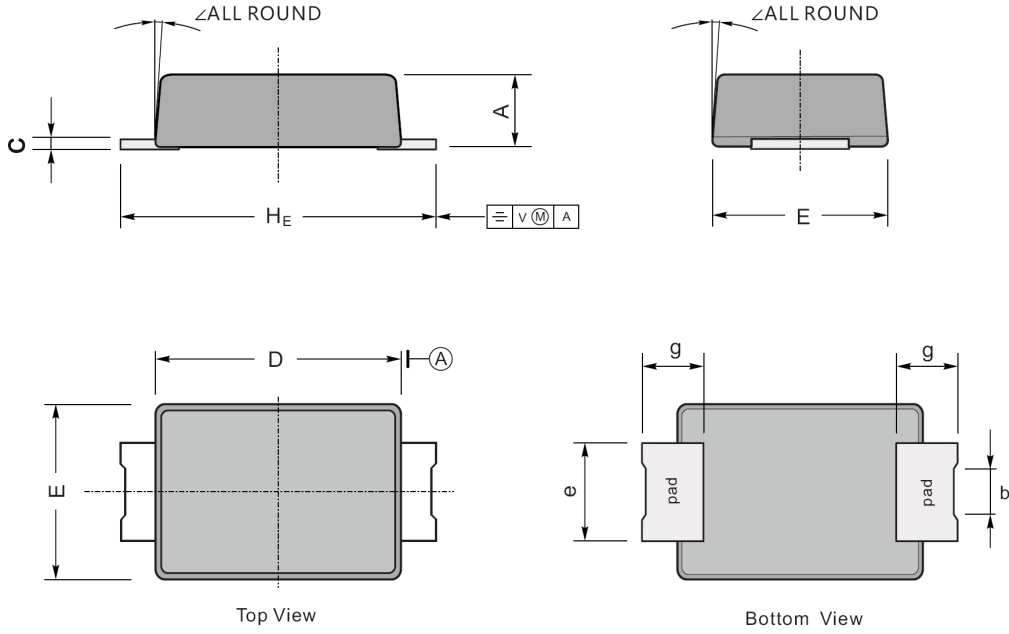


Fig.5 Maximum Non-Repetitive Peak Forward Surge Current



外形尺寸图 / Package Dimensions

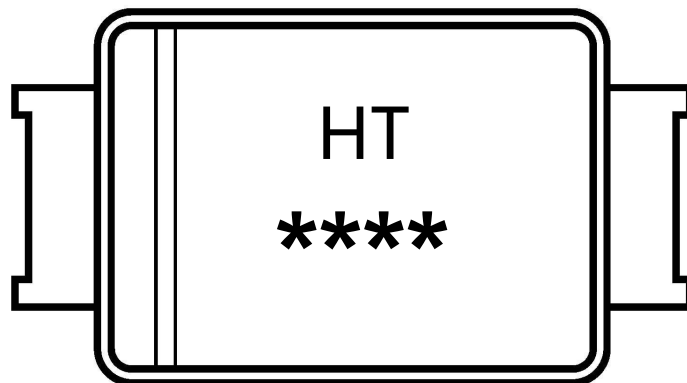


UNIT		A	C	D	E	e	g	H _E	b	∠
mm	max	1.2	0.20	3.7	2.7	1.6	1.2	4.9	1.05	7°
	min	0.9	0.12	3.3	2.4	1.3	0.8	4.4	0.65	
mil	max	47	7.9	146	106	63	47	193	41	
	min	35	4.7	130	94	51	31	173	26	

印章说明 / Marking Instructions

Type number	Marking
P4SMAFJ8.5A	HT
P4SMAFJ9.0A	HV
P4SMAFJ10A	HX
P4SMAFJ11A	HZ
P4SMAFJ12A	IE
P4SMAFJ13A	IG
P4SMAFJ14A	IK
P4SMAFJ15A	IM
P4SMAFJ16A	IP
P4SMAFJ17A	IR
P4SMAFJ18A	IT
P4SMAFJ20A	IV
P4SMAFJ22A	IX
P4SMAFJ24A	IZ
P4SMAFJ26A	JE
P4SMAFJ28A	JG
P4SMAFJ30A	JK
P4SMAFJ33A	JM
P4SMAFJ36A	JP
P4SMAFJ40A	JR
P4SMAFJ43A	JT
P4SMAFJ45A	JV
P4SMAFJ48A	JX
P4SMAFJ51A	JZ
P4SMAFJ54A	RE
P4SMAFJ58A	RG
P4SMAFJ60A	RK
P4SMAFJ64A	RM
P4SMAFJ70A	RP
P4SMAFJ75A	RR
P4SMAFJ78A	RT
P4SMAFJ85A	RV
P4SMAFJ90A	RX
P4SMAFJ100A	RZ
P4SMAFJ110A	SE
P4SMAFJ120A	SG
P4SMAFJ130A	SK
P4SMAFJ150A	SM
P4SMAFJ160A	SP
P4SMAFJ170A	SR

印章说明 / Marking Instructions



说明：

HT： 为型号代码

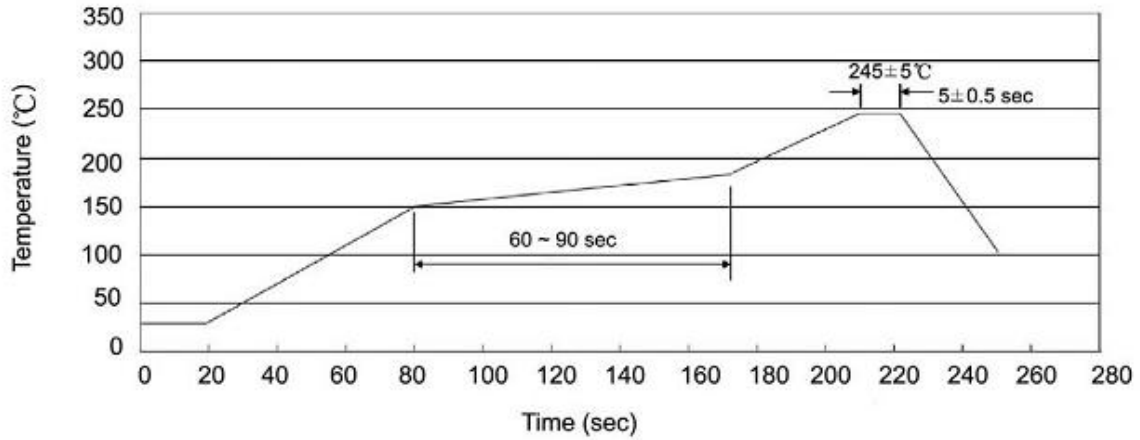
****： 为生产批号追溯码，第1个*为年月代码，后面3个*为当月小批号代码

Note:

HT： 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