

特性/机械性能:
FEATURES/MECHANICAL DATA

- ◆ 300W 峰值脉冲功率 300W peak pulse power capability
- ◆ 优良的箝制能力 Excellent clamping capability
- ◆ 较小的箝位因子 Smaller clamping factor
- ◆ 快速响应时间: 从: 0 v到 VBR, 单向型小于1.0ps, 双向型小于5.0ns
Fast response time: typically less than 1.0ps from 0v to VBR for unidirectional and 5.0ns for bidirectional types.



SMA/DO-214AC

- ◆ 耐焊接热: 250℃/10S, 引出端1.5mm处 Resistance to soldering heat: 250 °C /10S, terminal 1.5mm.
- ◆ 封装: 模塑封装 Case: Molded plastic
- ◆ 塑封材料: 用UL94V-0认可的阻燃环氧料 Epoxy: UL94V-0 rate flame retardant
- ◆ 端子: 镀锡, 无铅 Terminals: Pure tin plated, lead free
- ◆ 极性: 色带表示阴极, Polarity: Color band denotes cathode except Bipolar
- ◆ 安装位置: 任意 Mounting position: Any

最大额定值及电气特性
MAXIMUM RATINGS AND CHARACTERISTICS

测量环境温度为25℃, 除非另有规定。

Rating at 25℃ ambient temperature unless otherwise specified.

参数名称 Papt Number	符号 Symbol	额定值 Value	单位 Unit
最大峰值脉冲功率 Peak power dissipation	Pppm	最小 (Min) 300	W
最大峰值反向脉冲电流 (注释1) Peak pulse reverse current (Note1)	Ippm	见表 (See Table)	A
稳态功率 (注释2) Steady state power dissipation (Note2)	Pm(AV)	1.0	W
最大峰值正向浪涌电流 (注释3) 仅对单向型 Maximum Peak Forward surge Current (Note 3) For unidirectional only	IFSM	40.0	A
最大瞬态正向电压 @ 25A 仅对单向型 (注释4) Maximum instantaneous forward voltage @ 25A, For unidirectional only (Note2)	VF	3.5	V
工作及储存温度 Operating and Storage Temperature Range	TJ, TSTG	-55~+150	℃

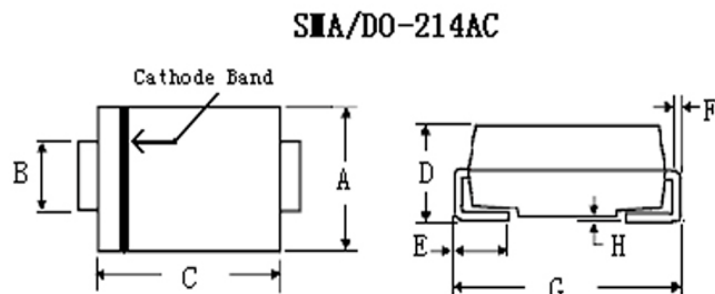
注 释: NOTES:

1. 脉冲电流时间 10 / 1000μs。
2. 在引线末端安装面积为 5.0mm², 厚 0.013mm 的散热铜片, Ta=75℃。
3. 使用单相正弦半波, 时间 10ms; 或使用等效的方波, 4周波/分。

1. 10 / 1000μs waveform non-repetitive current pulse
2. Mounted on copper pad area of (5×5×0.013mm), Ta=75℃.
3. Measured on 10ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

产品外形尺寸:

Product appearance size



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.096	0.108	2.45	2.75
B	0.049	0.061	1.25	1.55
C	0.171	0.183	4.35	4.65
D	0.075	0.091	1.90	2.30
E	0.031	0.055	0.80	1.40
F	0.005	0.011	0.13	0.27
G	0.191	0.203	4.85	5.15
H		0.008		0.203

电特性:

ELECTRICAL CHARACTERISTICS

型 号 Device Type	标识代码 Marking		击穿电压 Breakdown Voltage(Note1)		测试电流 Test Current	变位电压 Stand-off Volage	最大反向漏电流 @ V _{WM} Maximum Reverse leakage @V _{WM}	最大峰值脉冲 浪涌电流 Maximum Peak Pulse Reverse Current	最大箝位电压 @I _{ppm} Maximum Clamping Voltage @I _{ppm}
	UNI-	BI-	V (BR)(V) MIN	V (BR)(V) MAX	IT(mA)	V _{WM} (V)	I _D (μA) (Note2)	I _{ppm} (A)	V _C (V)
SMAJ5.0			6.40	7.30	10.0	5.0	800	32.0	9.60
SMAJ5.0A	HE	TE	6.40	7.00	10.0	5.0	800	34.0	9.20
SMAJ6.0			6.67	8.15	10.0	6.0	800	27.6	11.4
SMAJ6.0A	HG	TG	6.67	7.37	10.0	6.0	800	30.5	10.3
SMAJ6.5			7.22	8.82	10.0	6.5	500	25.6	12.3
SMAJ6.5A	HK	TK	7.22	7.98	10.0	6.5	500	28.0	11.2
SMAJ7.0			7.78	9.51	10.0	7.0	200	23.6	13.3
SMAJ7.0A	HM	TM	7.78	8.60	10.0	7.0	200	26.0	12.0
SMAJ7.5			8.33	10.3	1.0	7.5	100	22.0	14.3
SMAJ7.5A	HP	TP	8.33	9.21	1.0	7.5	100	24.4	12.9
SMAJ8.0			8.89	10.9	1.0	8.0	50	21.0	15.0
SMAJ8.0A	HR	TR	8.89	9.83	1.0	8.0	50	23.0	13.6
SMAJ8.5			9.44	11.5	1.0	8.5	10	19.8	15.9
SMAJ8.5A	HT	TT	9.44	10.4	1.0	8.5	10	21.8	14.4
SMAJ9.0			10.0	12.2	1.0	9.0	5	18.6	16.9
SMAJ9.0A	HV	TV	10.0	11.1	1.0	9.0	5	20.4	15.4
SMAJ10			11.1	13.6	1.0	10.0	5	16.7	18.8
SMAJ10A	HX	TX	11.1	12.3	1.0	10.0	5	18.5	17.0
SMAJ11			12.2	14.9	1.0	11.0	5	15.6	20.1
SMAJ11A	HZ	TZ	12.2	13.5	1.0	11.0	5	17.3	18.2
SMAJ12			13.3	16.3	1.0	12.0	5	14.3	22.0
SMAJ12A	IE	UE	13.3	14.7	1.0	12.0	5	15.8	19.9
SMAJ13			14.4	17.6	1.0	13.0	5	13.0	23.8
SMAJ13A	IG	UG	14.4	15.9	1.0	13.0	5	14.6	21.5
SMAJ14			15.6	19.1	1.0	14.0	5	12.2	25.8
SMAJ14A	IK	UK	15.6	17.2	1.0	14.0	5	13.5	23.2
SMAJ15			16.7	20.4	1.0	15.0	5	11.7	26.9
SMAJ15A	IM	UM	16.7	18.5	1.0	15.0	5	12.9	24.4

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	UNI-	BI-	V (BR)(V) MIN	V (BR)(V) MAX	IT(mA)	V _{WM} (V)	ID(μA) (Note2)	I _{ppm} (A)	V _C (V)
SMAJ16			17.8	21.8	1.0	16.0	5	10.9	28.8
SMAJ16A	IP	UP	17.8	19.7	1.0	16.0	5	12.0	26.0
SMAJ17			18.9	23.1	1.0	17.0	5	10.3	30.5
SMAJ17A	IR	UR	18.9	20.9	1.0	17.0	5	11.4	27.6
SMAJ18			20.0	24.4	1.0	18.0	5	9.7	32.2
SMAJ18A	IT	UT	20.0	22.1	1.0	18.0	5	10.7	29.2
SMAJ20			22.2	27.1	1.0	20.0	5	8.7	35.8
SMAJ20A	IV	UV	22.2	24.5	1.0	20.0	5	9.7	32.4
SMAJ22			24.4	29.8	1.0	22.0	5	8.0	39.4
SMAJ22A	IX	UX	24.4	26.9	1.0	22.0	5	8.8	35.5
SMAJ24			26.7	32.6	1.0	24.0	5	7.3	43.0
SMAJ24A	IZ	UZ	26.7	29.5	1.0	24.0	5	8.0	38.9
SMAJ26			28.9	35.3	1.0	26.0	5	6.7	46.6
SMAJ26A	JE	VE	28.9	31.9	1.0	26.0	5	7.4	42.1
SMAJ28			31.1	38.0	1.0	28.0	5	6.3	50.0
SMAJ28A	JG	VG	31.1	34.4	1.0	28.0	5	6.9	45.4
SMAJ30			33.3	40.7	1.0	30.0	5	5.8	53.5
SMAJ30A	JK	VK	33.3	36.8	1.0	30.0	5	6.5	48.4
SMAJ33			36.7	44.9	1.0	33.0	5	5.3	59.0
SMAJ33A	JM	VM	36.7	40.6	1.0	33.0	5	5.9	53.3
SMAJ36			40.0	48.9	1.0	36.0	5	4.8	64.3
SMAJ36A	JP	VP	40.0	44.2	1.0	36.0	5	5.4	58.1
SMAJ40			44.4	54.3	1.0	40.0	5	4.4	71.4
SMAJ40A	JR	VR	44.4	49.1	1.0	40.0	5	4.8	64.5
SMAJ43			47.8	58.4	1.0	43.0	5	4.0	76.7
SMAJ43A	JT	VT	47.8	52.8	1.0	43.0	5	4.5	69.4
SMAJ45			50.0	61.1	1.0	45.0	5	3.9	80.3
SMAJ45A	JV	VV	50.0	55.3	1.0	45.0	5	4.3	72.7
SMAJ48			53.3	65.1	1.0	48.0	5	3.6	85.5
SMAJ48A	JX	VX	53.3	58.9	1.0	48.0	5	4.0	77.4
SMAJ51			56.7	69.3	1.0	51.0	5	3.4	91.1
SMAJ51A	JZ	VZ	56.7	62.7	1.0	51.0	5	3.8	82.4
SMAJ54			60.0	73.3	1.0	54.0	5	3.2	96.3
SMAJ54A	RE	WE	60.0	66.3	1.0	54.0	5	3.6	87.1
SMAJ58			64.4	78.7	1.0	58.0	5	3.0	103
SMAJ58A	RG	WG	64.4	71.2	1.0	58.0	5	3.3	93.6
SMAJ60			66.7	81.5	1.0	60.0	5	2.9	107
SMAJ60A	RK	WK	66.7	73.7	1.0	60.0	5	3.2	96.8
SMAJ64			71.1	86.9	1.0	64.0	5	2.7	114

[SMAJ Series]
Transient Voltage Suppressor 瞬变电压抑制二极管 TVS
电特性:
ELECTRICAL CHARACTERISTICS

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	UNI-	BI-	V (BR)(V) MIN	V (BR)(V) MAX	IT(mA)	V _{WM} (V)	ID(μA) (Note2)	I ppm (A)	Vc(V)
SMAJ64A	RM	WM	71.1	78.6	1.0	64.0	5	3.0	103
SMAJ70			77.8	95.1	1.0	70.0	5	2.5	125
SMAJ70A	RP	WP	77.8	86.0	1.0	70.0	5	2.7	113
SMAJ75			83.3	102	1.0	75.0	5	2.3	134
SMAJ75A	RR	WR	83.3	92.1	1.0	75.0	5	2.6	121
SMAJ78			86.7	106	1.0	78.0	5	2.2	139
SMAJ78A	RT	WT	86.7	95.8	1.0	78.0	5	2.5	126
SMAJ85			94.4	115	1.0	85.0	5	2.0	151
SMAJ85A	RV	WV	94.4	104	1.0	85.0	5	2.2	137
SMAJ90			100	122	1.0	90.0	5	1.9	160
SMAJ90A	RX	WX	100	111	1.0	90.0	5	2.1	146
SMAJ100			111	136	1.0	100	5	1.7	179
SMAJ100A	RZ	WZ	111	123	1.0	100	5	1.9	162
SMAJ110			122	149	1.0	110	5	1.6	196
SMAJ110A	SE	XE	122	135	1.0	110	5	1.7	177
SMAJ120			133	163	1.0	120	5	1.4	214
SMAJ120A	SG	XG	133	147	1.0	120	5	1.6	193
SMAJ130			144	176	1.0	130	5	1.3	231
SMAJ130A	SK	XK	144	159	1.0	130	5	1.5	209
SMAJ150			167	204	1.0	150	5	1.1	268
SMAJ150A	SM	XM	167	185	1.0	150	5	1.3	243
SMAJ160			178	218	1.0	160	5	1.0	287
SMAJ160A	SP	XP	178	197	1.0	160	5	1.2	259
SMAJ170			189	231	1.0	170	5	1.0	304
SMAJ170A	SR	XR	189	209	1.0	170	5	1.1	275

注 释：

1. V (BR) 值在施加IT 300μs后测量, IT 为方波或等效的脉冲波形。
2. 对于双向型, V_{RWM}在10V及10V以下, ID值加倍。

NOTES :

1. V (BR) measured after IT applide for 300μs, IT = suquare pulse or equivalent.
2. For bidirectional types having V_{RWM} of 10 volts and less, the ID limit is doubled.

特性曲线图:

RATINGS AND CHARACTERISTIC CURVES

Fig 1: Peak power dissipation versus initial junction temperature.

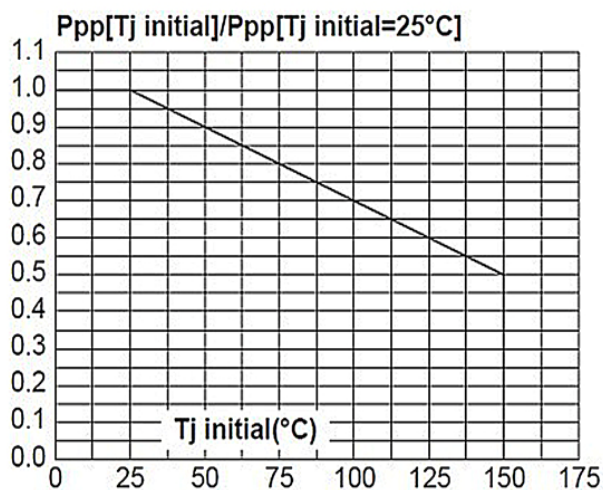


Fig 2: Peak pulse power versus exponential pulse duration ($T_j \text{ initial}=25^\circ\text{C}$).

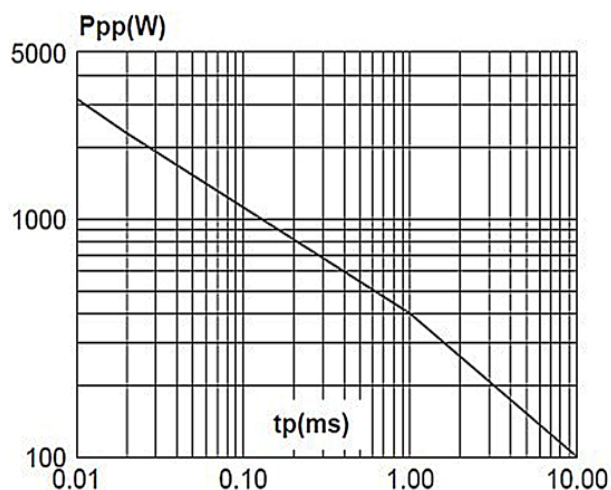


Fig 3: Clamping voltage versus peak pulse current ($T_j \text{ initial}=25^\circ\text{C}$)
Exponential waveform $t_p=20\mu\text{s}$ & $t_p=1\text{ms}$.

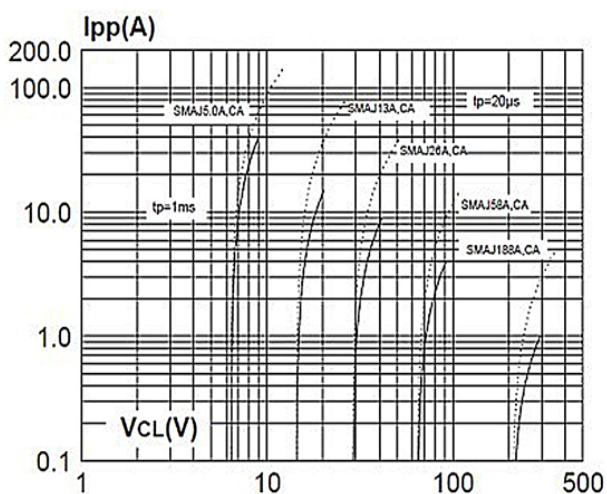
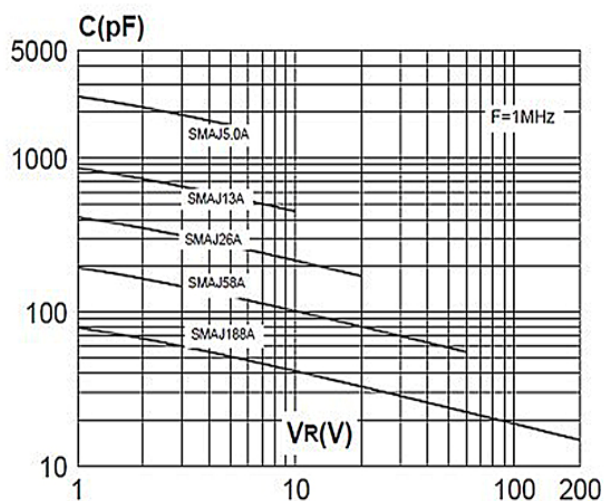


Fig 4-1: Capacitance versus reverse applied voltage (typical values) (SMAJxxA).



特性曲线图:

RATINGS AND CHARACTERISTIC CURVES

Fig 4-2: Capacitance versus reverse applied voltage (typical values) (SMAJxxCA).

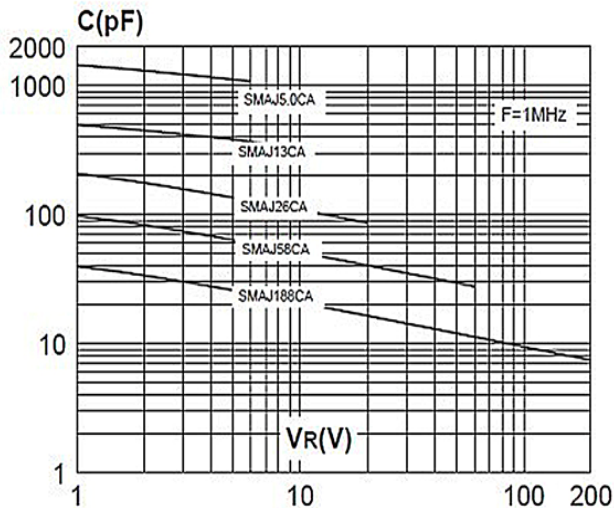


Fig 5: Peak forward voltage drop versus peak forward current (typical values).

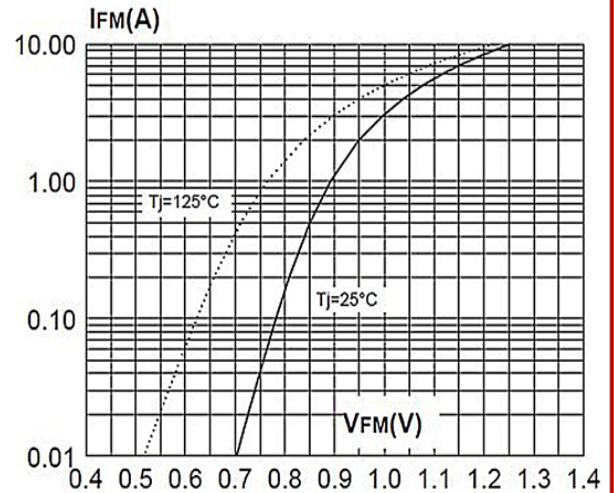


Fig 6: Relative variation of thermal impedance junction to ambient versus pulse duration.

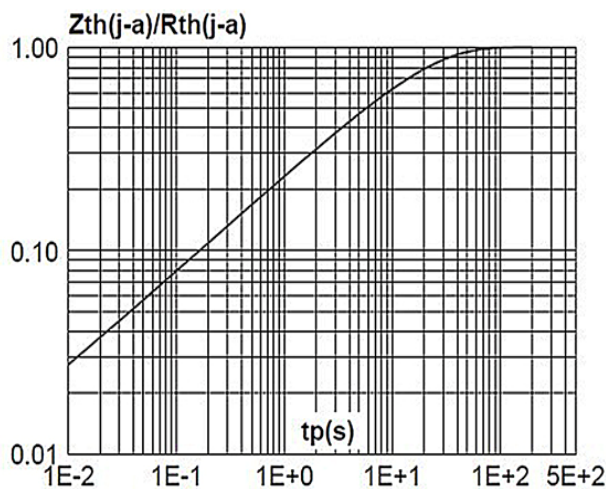


Fig 7: Thermal resistance junction to ambient versus copper surface under each lead (printed circuit board FR4 e(Cu)=35μm).

