

瞬态电压抑制二极管：TP5.0SMDJ 系列

5000 W 表面贴装型



■ 特性

1. 符合RoHS
2. 峰值脉冲功率5000W，波形为10/1000 μ s
3. 漏电流低
4. 响应时间快速
5. 优秀的限压抑制电压能力
6. 符合AEC-Q101
7. 满足IEC 61000-4-2(ESD) 30kV(空气)，30kV(接触)



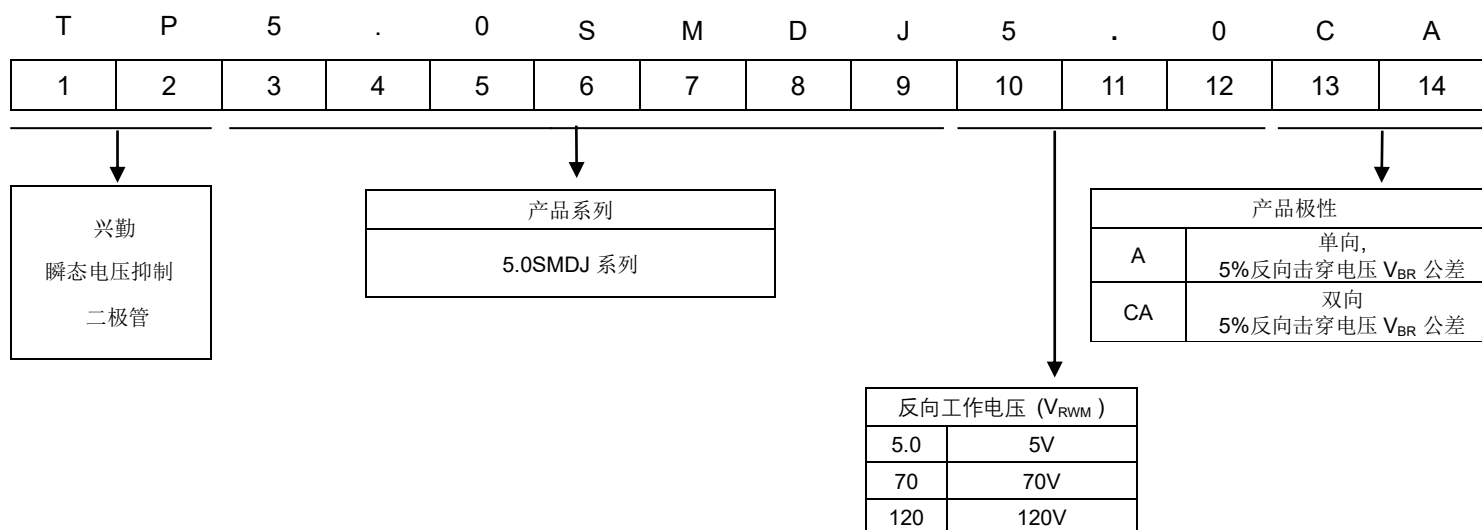
■ 用途

1. 通讯
2. 计算机
3. 通信设备
4. 工业设备
5. 汽车

■ 机械数据

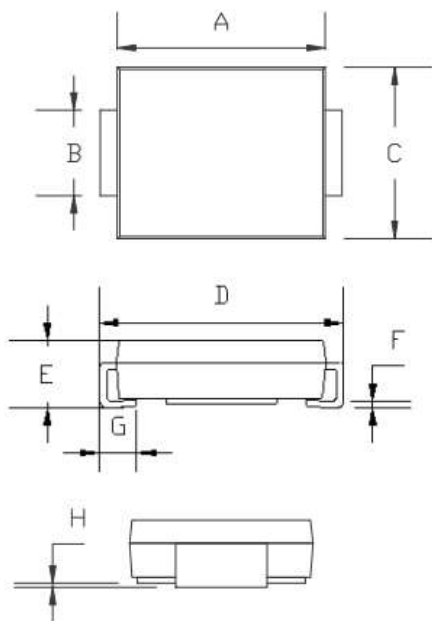
1. 封装形式：DO-214AB (SMC)
2. 封装塑料符合防火等级UL94-V0
3. 引线：根据MIL-STD-750, Method 2026进行焊接
4. 极性：色带表示阴极端

■ 编码规则

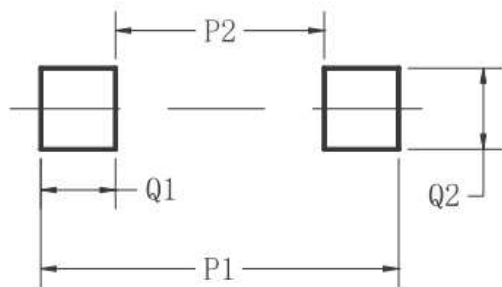


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■ 结构与尺寸



SMC / DO-214AB		
Dimensions	Millimeters	
	Min	Max
A	6.60	7.15
B	2.75	3.27
C	5.55	6.22
D	7.75	8.13
E	1.98	2.80
F	0.15	0.31
G	0.75	1.52
H	0.00	0.30



SMC / DO-214AB	
Dimensions	Millimeters
P1	9.90
P2	3.84
Q1	3.03
Q2	3.82

■ 最大标称资料 (TA=25°C)

参数	代号	数值	单位
10/1000μs 波型峰值脉冲功耗(Note1、2)	P _{PPM}	5000	W
峰值正向浪涌电流(Note 3)	I _{FSM}	300	A
稳态功耗	P _D	6.5	W
正向电压 (仅用于单向)	V _F	3.5	V
热阻 (结到环境)	R _{θJA}	75	°C/W
热阻 (结到引线)	R _{θJL}	15	°C/W
工作结温和存储温度范围	T _J , T _{STG}	-65~+150	°C

注: 1.非重复电流脉冲, 如图3所示, 在TA=25°C以上降额, 如图2所示

2. 8.3ms 单半正弦波, 占空比最大为每分钟4个脉冲

3. 安装在0.31"x 0.31" (8.0 x 8.0mm) 的铜板上

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■ 电气特性 (TA=25°C)

型号 (单向)	型号 (双向)	反向工作 电压	击穿电压 V _{BR} @ I _T		测试 电流 I _T (mA)	最大限 制电压 V _C @ I _{PP}	最大脉冲峰 值电流 I _{PP} (A)	最大反向 漏电流 I _R @V _{RWM}	印字	
			V _{RWM} (V)	Min(V)					Max(V)	Uni
TP5.0SMDJ11A	TP5.0SMDJ11CA	11	12.2	13.5	1	18.2	274.73	800	5PDX	5BDX
TP5.0SMDJ12A	TP5.0SMDJ12CA	12	13.3	14.7	1	19.9	251.26	800	5PDZ	5BDZ
TP5.0SMDJ13A	TP5.0SMDJ13CA	13	14.4	15.9	1	21.5	232.56	500	5PEE	5BEE
TP5.0SMDJ14A	TP5.0SMDJ14CA	14	15.6	17.2	1	23.2	215.52	200	5PEG	5BEG
TP5.0SMDJ15A	TP5.0SMDJ15CA	15	16.7	18.5	1	24.4	204.92	100	5PEK	5BEK
TP5.0SMDJ16A	TP5.0SMDJ16CA	16	17.8	19.7	1	26	192.31	50	5PEM	5BEM
TP5.0SMDJ17A	TP5.0SMDJ17CA	17	18.9	20.9	1	27.6	181.16	20	5PEP	5BEP
TP5.0SMDJ18A	TP5.0SMDJ18CA	18	20	22.1	1	29.2	171.23	10	5PER	5BER
TP5.0SMDJ19A	TP5.0SMDJ19CA	19	21.1	23.3	1	30.8	162.34	10	5PET	5BET
TP5.0SMDJ20A	TP5.0SMDJ20CA	20	22.2	24.5	1	32.4	154.32	5	5PEV	5BEV
TP5.0SMDJ22A	TP5.0SMDJ22CA	22	24.4	26.9	1	35.5	140.85	5	5PEX	5BEX
TP5.0SMDJ24A	TP5.0SMDJ24CA	24	26.7	29.5	1	38.9	128.53	2	5PEZ	5BEZ
TP5.0SMDJ26A	TP5.0SMDJ26CA	26	28.9	31.9	1	42.1	118.76	2	5PFE	5BFE
TP5.0SMDJ28A	TP5.0SMDJ28CA	28	31.1	34.4	1	45.4	110.13	2	5PFG	5BFG
TP5.0SMDJ30A	TP5.0SMDJ30CA	30	33.3	36.8	1	48.4	103.31	2	5PFK	5BFK
TP5.0SMDJ33A	TP5.0SMDJ33CA	33	36.7	40.6	1	53.3	93.81	2	5PFM	5BFM
TP5.0SMDJ36A	TP5.0SMDJ36CA	36	40	44.2	1	58.1	86.06	2	5PFP	5BFP
TP5.0SMDJ40A	TP5.0SMDJ40CA	40	44.4	49.1	1	64.5	77.52	2	5PFR	5BFR
TP5.0SMDJ43A	TP5.0SMDJ43CA	43	47.8	52.8	1	69.4	72.05	2	5PFT	5BFT
TP5.0SMDJ45A	TP5.0SMDJ45CA	45	50	55.3	1	72.7	68.78	2	5PFV	5BFV
TP5.0SMDJ48A	TP5.0SMDJ48CA	48	53.3	58.9	1	77.4	64.60	2	5PFX	5BFX
TP5.0SMDJ51A	TP5.0SMDJ51CA	51	56.7	62.7	1	82.4	60.68	2	5PFZ	5BFZ
TP5.0SMDJ54A	TP5.0SMDJ54CA	54	60	66.3	1	87.1	57.41	2	5PGE	5BGE
TP5.0SMDJ58A	TP5.0SMDJ58CA	58	64.4	71.2	1	93.6	53.42	2	5PGG	5BGG

■ 特性曲线图 (TA=25°C)

Fig.1 - Peak Pulse Power Rating Curve

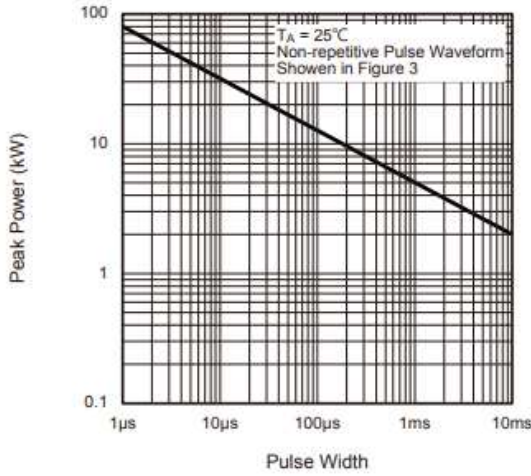


Fig.2 - Pulse Derating Curve

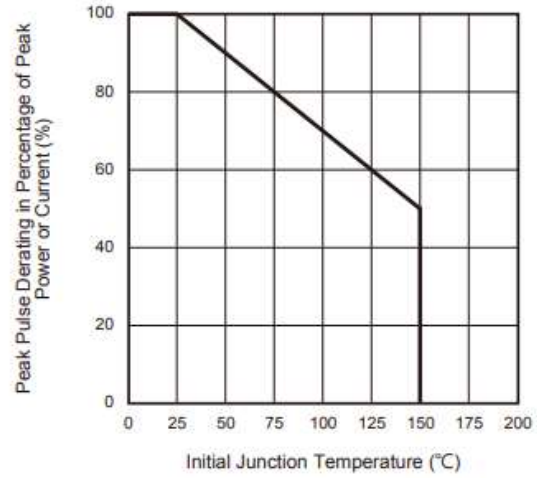


Fig.3 - Pulse Waveform

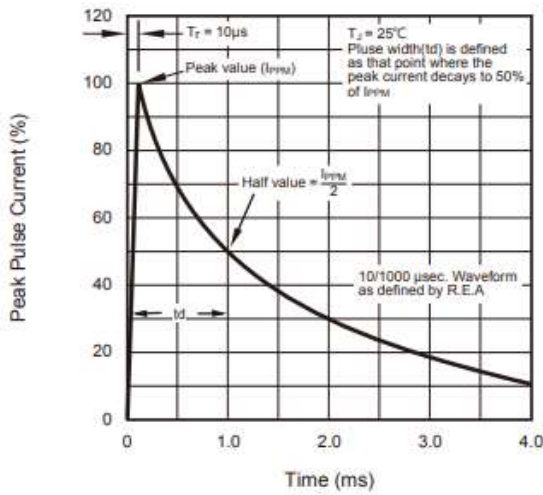


Fig.4 - Typical Junction Capacitance

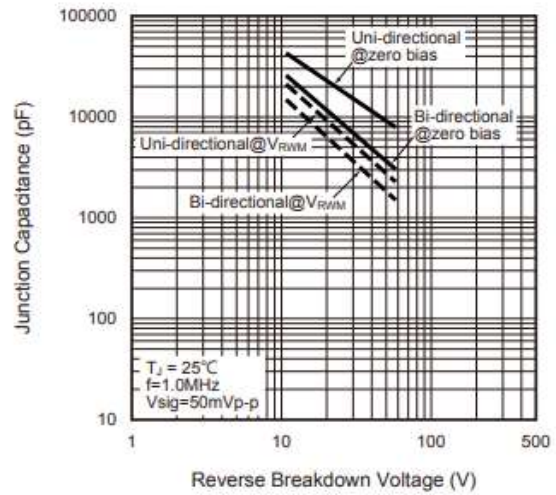


Fig.5 - Steady State Power Derating Curve

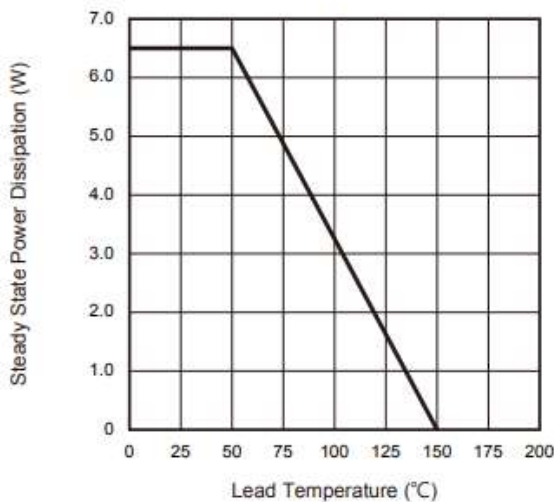
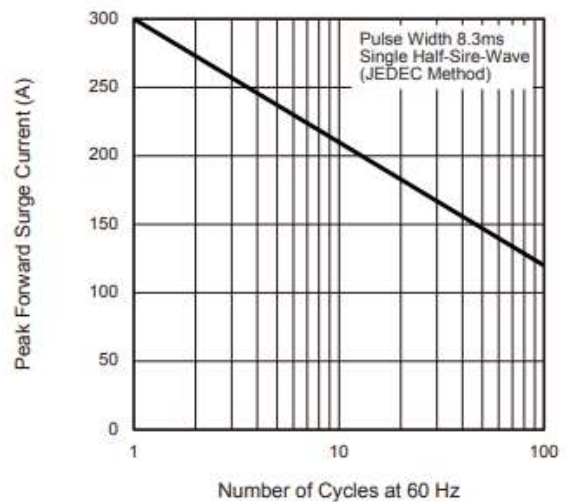
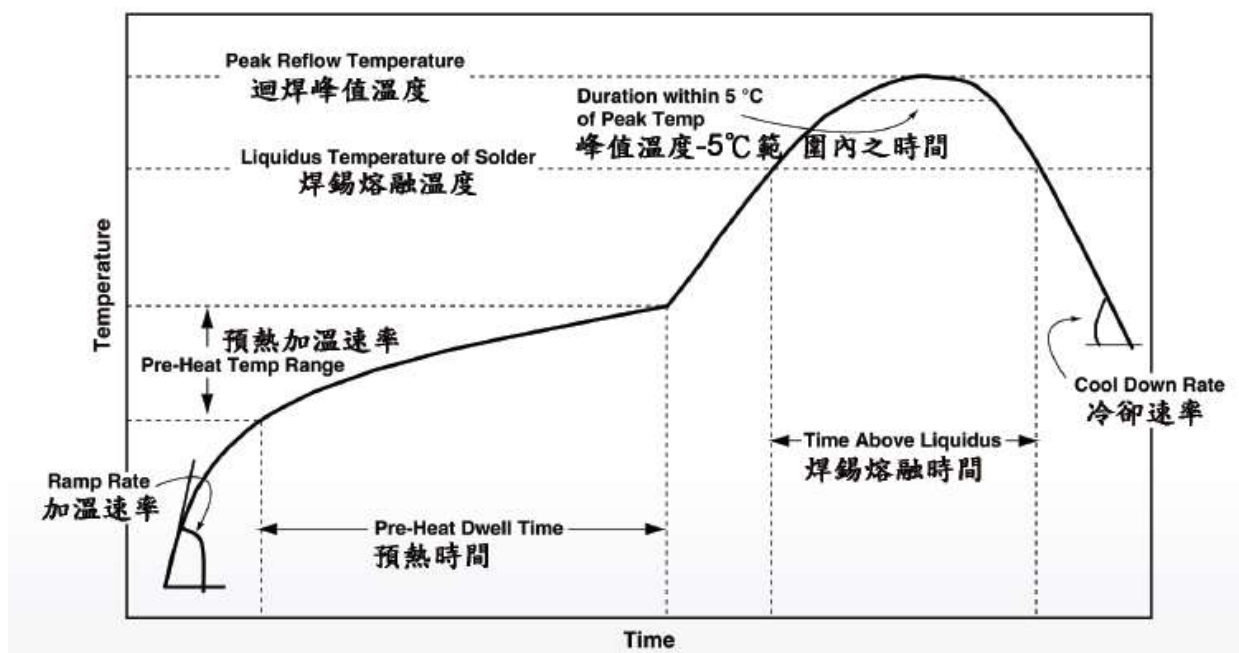


Fig.6 - Maximum Non-Repetitive Surge Current



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■ 推荐焊接条件



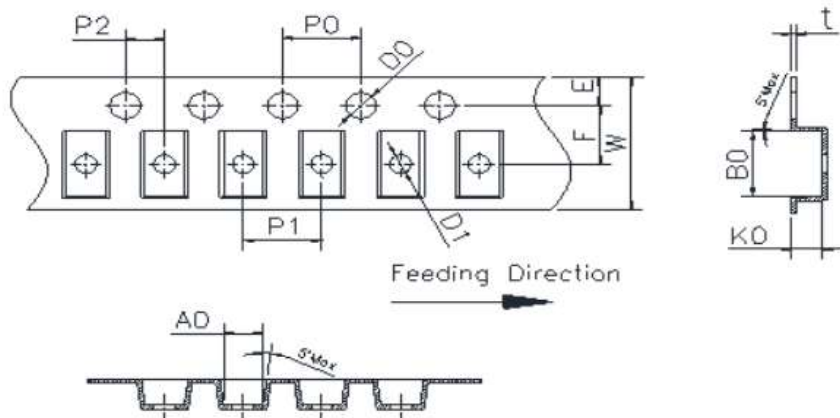
LEAD(Pb)-FREE SOLDER(SnAgCu) REFLOW PROFILE ATTRIBUTES	
PROFILE ATTRIBUTE	PROFILE ATTRIBUTE
Peak Reflow Temperature	260(+8/-8)°C
Time within 5°C of Peak Temperature	30s max
Liquidus Temperature of Solder	217°C
Cool Down Rate	6 °C/s max
Time above Liquidus	60s to 150s
Pre-heat Temperature Range	150°C to 200°C
Pre-heat Dwell Time	60s to 120s
Maximum Ramp Rate	3 °C/s max

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■ 包装



Item	Symbol	DO-214AB (SMC)
		單位:mm
Carrier width	A0	6.05±0.1
Carrier length	B0	8.31±0.1
Carrier depth	K0	2.54±0.1
Sprocket hole	D0/D1	1.55±0.05
Sprocket hole position	E	1.75±0.1
Punch hole position	F	7.5±0.1
Sprocket hole pinth	P0	4±0.1
Carrier pinth	P1	8±0.1
Embossment center	P2	2±0.1
Tape thickness	t	0.3±0.02
Tape width	W	16±0.3

■ 数量

系列	卷盘尺寸 (英寸)	数量/卷
TP5.0SMDJ	13	3,000

■ 仓库存储条件

- 存储条件:
 1. 储存温度: $\leq 25^{\circ}\text{C}$
 2. 相对湿度: 50%~80%RH
 3. 不要将本产品存放在有腐蚀性气体或是阳光直接照射的环境中保管
- 存储期限: 1 年