

瞬态电压抑制二极管：TP1.5SMC 系列

1500 W 表面贴装型



■ 特性

1. 玻璃钝化芯片
2. 峰值脉冲功率1500W，波形为10/1000 μ s
3. 优秀的限压抑制电压能力
4. 响应时间快速
5. 钳位电压低
6. 漏电流低
7. 满足MSL1，LF最大峰值为260 $^{\circ}$ C
8. 符合RoHS和无卤要求
9. 符合AEC-Q101



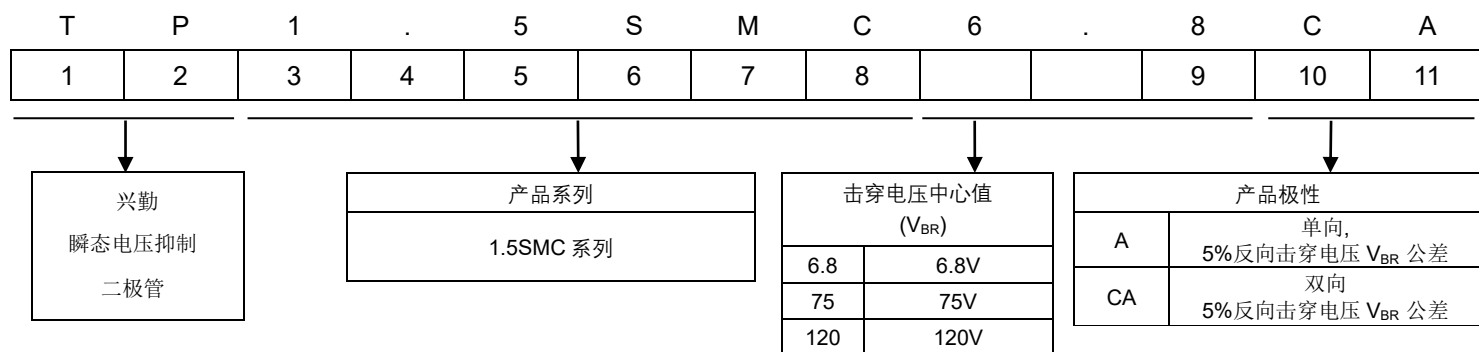
■ 用途

1. I/O接口
2. 交流/直流电源
3. 低频信号传输线

■ 机械数据

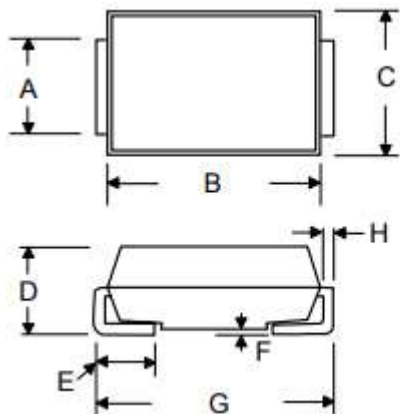
1. 封装形式：DO-214AB (SMC)，封装塑料符合防火等级UL94-V0
2. 引脚可焊性符合 MIL-STD-750, Method 2026
3. 引线：根据MIL-STD-750, Method 2026进行焊接
4. 极性：色带表示阴极端
5. 安装位置：任意

■ 编码规则

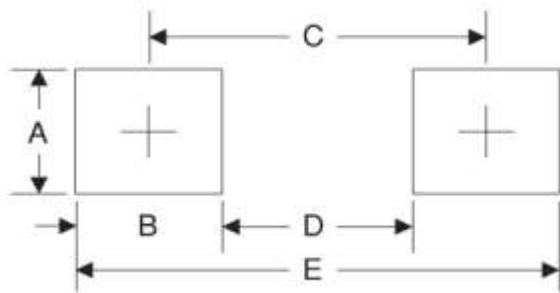


1500 W 表面贴装型

■ 结构与尺寸



Symbol	Dimensions in millimeters	
	Min	Max
A	2.90	3.20
B	6.60	7.11
C	5.59	6.22
D	2.06	2.62
E	0.76	1.52
F	-	0.20
G	7.75	8.13
H	0.15	0.31



Symbol	Unit (mm)	Unit (inch)
A	3.30	0.130
B	2.50	0.098
C	6.80	0.268
D	4.40	0.173
E	9.40	0.370

■ 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}	1500	W
10/1000μs 波型峰值脉冲电流(Note1)	I _{PPM}	See next table	A
峰值正向浪涌电流(Note 3)	I _{FSM}	200	A
稳态功耗	P _D	6.5	W
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}	-55~+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8.0 x 8.0mm的铜板上

瞬态电压抑制二极管：TP1.5SMC 系列



1500 W 表面贴装型

■ 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	最大限制 电压 V _C @ I _{pp}	最大脉冲 峰值电流	最大反向 漏电流 I _R @ V _{RWM}	印字	
			V _{RWM} (V)	Min (V)					Max (V)	I _T (mA)
TP1.5SMC6.8A	TP1.5SMC6.8CA	5.8	6.45	7.14	10	10.5	144.8	1000	6V8A	6V8C
TP1.5SMC7.5A	TP1.5SMC7.5CA	6.4	7.13	7.88	10	11.3	134.5	500	7V5A	7V5C
TP1.5SMC8.2A	TP1.5SMC8.2CA	7.02	7.79	8.61	10	12.1	125.6	200	8V2A	8V2C
TP1.5SMC9.1A	TP1.5SMC9.1CA	7.78	8.65	9.55	1	13.4	113.4	50	9V1A	9V1C
TP1.5SMC10A	TP1.5SMC10CA	8.55	9.5	10.5	1	14.5	104.8	10	10A	10C
TP1.5SMC11A	TP1.5SMC11CA	9.4	10.5	11.6	1	15.6	97.4	5	11A	11C
TP1.5SMC12A	TP1.5SMC12CA	10.2	11.4	12.6	1	16.7	91	5	12A	12C
TP1.5SMC13A	TP1.5SMC13CA	11.1	12.4	13.7	1	18.2	83.5	5	13A	13C
TP1.5SMC15A	TP1.5SMC15CA	12.8	14.3	15.8	1	21.2	71.7	1	15A	15C
TP1.5SMC16A	TP1.5SMC16CA	13.6	15.2	16.8	1	22.5	67.6	1	16A	16C
TP1.5SMC18A	TP1.5SMC18CA	15.3	17.1	18.9	1	25.2	60.3	1	18A	18C
TP1.5SMC20A	TP1.5SMC20CA	17.1	19	21	1	27.7	54.9	1	20A	20C
TP1.5SMC22A	TP1.5SMC22CA	18.8	20.9	23.1	1	30.6	49.7	1	22A	22C
TP1.5SMC24A	TP1.5SMC24CA	20.5	22.8	25.2	1	33.2	45.8	1	24A	24C
TP1.5SMC27A	TP1.5SMC27CA	23.1	25.7	28.4	1	37.5	40.5	1	27A	27C
TP1.5SMC30A	TP1.5SMC30CA	25.6	28.5	31.5	1	41.4	36.7	1	30A	30C
TP1.5SMC33A	TP1.5SMC33CA	28.2	31.4	34.7	1	45.7	33.3	1	33A	33C
TP1.5SMC36A	TP1.5SMC36CA	30.8	34.2	37.8	1	49.9	30.5	1	36A	36C
TP1.5SMC39A	TP1.5SMC39CA	33.3	37.1	41	1	53.9	28.2	1	39A	39C
TP1.5SMC43A	TP1.5SMC43CA	36.8	40.9	45.2	1	59.3	25.6	1	43A	43C
TP1.5SMC47A	TP1.5SMC47CA	40.2	44.7	49.4	1	64.8	23.5	1	47A	47C
TP1.5SMC51A	TP1.5SMC51CA	43.6	48.5	53.6	1	70.1	21.7	1	51A	51C
TP1.5SMC56A	TP1.5SMC56CA	47.8	53.2	58.8	1	77	18.7	1	56A	56C
TP1.5SMC62A	TP1.5SMC62CA	53	58.9	65.1	1	85	17.9	1	62A	62C
TP1.5SMC68A	TP1.5SMC68CA	58.1	64.6	71.4	1	92	16.5	1	68A	68C
TP1.5SMC75A	TP1.5SMC75CA	64.1	71.3	78.8	1	103	14.8	1	75A	75C
TP1.5SMC82A	TP1.5SMC82CA	70.1	77.9	86.1	1	113	13.5	1	82A	82C
TP1.5SMC91A	TP1.5SMC91CA	77.8	86.5	95.5	1	125	12.2	1	91A	91C
TP1.5SMC100A	TP1.5SMC100CA	85.5	95	105	1	137	11.1	1	100A	100C

瞬态电压抑制二极管：TP1.5SMC 系列

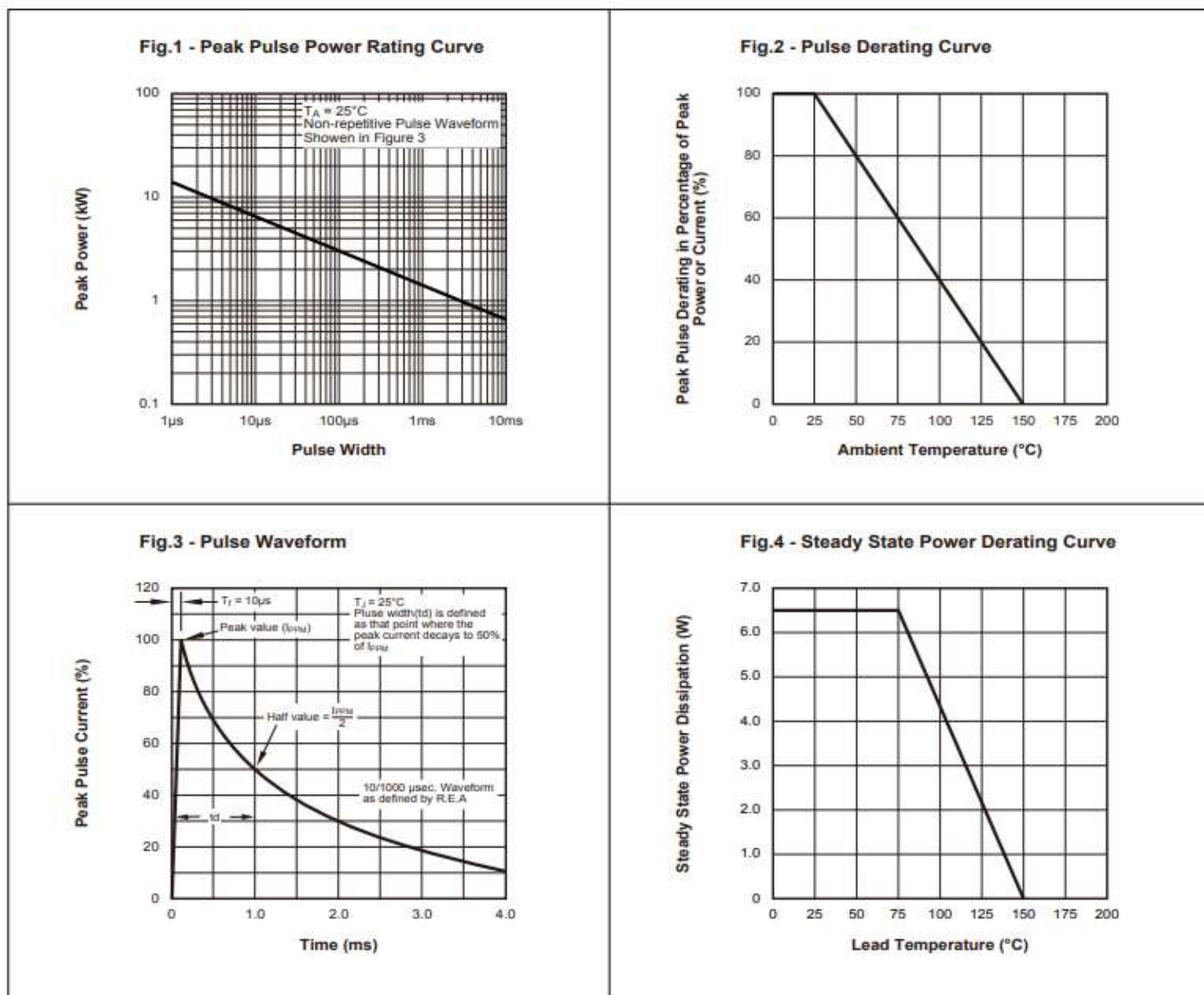
1500 W 表面贴装型



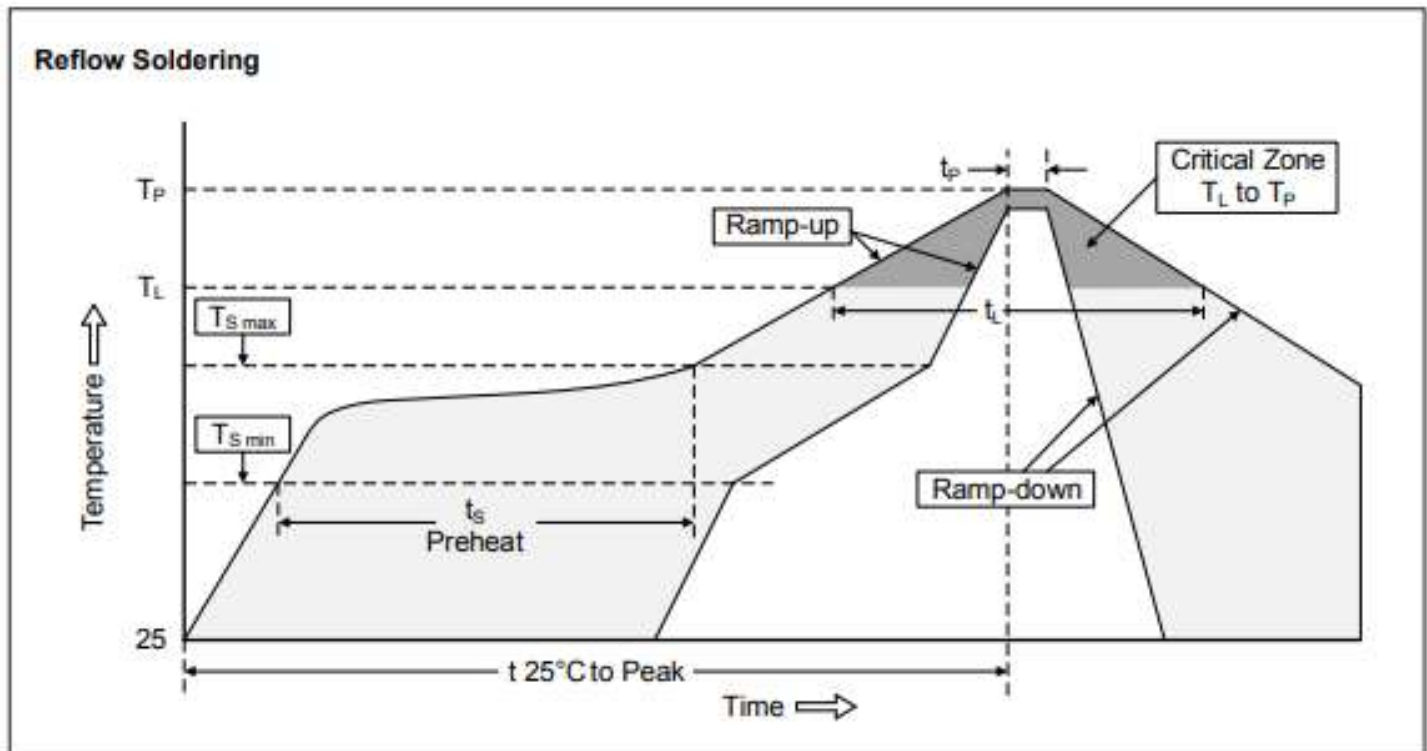
■ 电气特性 (TA=25°C)

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
TP1.5SMC110A	TP1.5SMC110CA	94	105	116	1	152	10	1	110A	110C
TP1.5SMC120A	TP1.5SMC120CA	102	114	126	1	165	9.2	1	120A	120C
TP1.5SMC130A	TP1.5SMC130CA	111	124	137	1	179	8.5	1	130A	130C
TP1.5SMC150A	TP1.5SMC150CA	128	143	158	1	207	7.3	1	150A	150C
TP1.5SMC160A	TP1.5SMC160CA	136	152	168	1	219	6.9	1	160A	160C
TP1.5SMC170A	TP1.5SMC170CA	145	162	179	1	234	6.5	1	170A	170C
TP1.5SMC180A	TP1.5SMC180CA	154	171	189	1	246	6.2	1	180A	180C
TP1.5SMC200A	TP1.5SMC200CA	171	190	210	1	274	5.5	1	200A	200C
TP1.5SMC220A	TP1.5SMC220CA	185	209	231	1	328	4.6	1	220A	220C
TP1.5SMC250A	TP1.5SMC250CA	214	237	263	1	344	4.4	1	250A	250C
TP1.5SMC300A	TP1.5SMC300CA	256	285	315	1	414	3.7	1	300A	300C
TP1.5SMC350A	TP1.5SMC350CA	300	333	368	1	482	3.2	1	350A	350C
TP1.5SMC400A	TP1.5SMC400CA	342	380	420	1	548	2.8	1	400A	400C
TP1.5SMC440A	TP1.5SMC440CA	376	418	462	1	602	2.5	1	440A	440C
TP1.5SMC480A	TP1.5SMC480CA	408	456	504	1	658	2.3	1	480A	480C
TP1.5SMC510A	TP1.5SMC510CA	434	485	535	1	698	2.1	1	510A	510C
TP1.5SMC530A	TP1.5SMC530CA	450	503	556	1	725	2.1	1	530A	530C
TP1.5SMC540A	TP1.5SMC540CA	459	513	567	1	740	2	1	540A	540C

■ 特性曲线图 (TA=25°C)



■ 推荐焊接条件

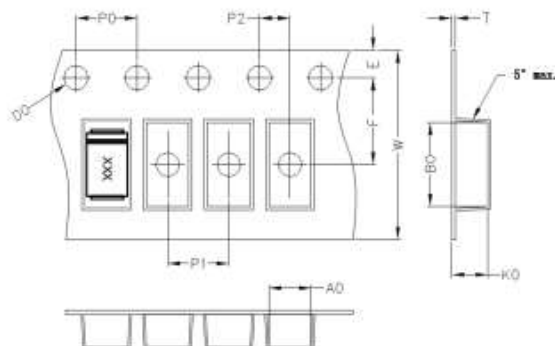


Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat	
-Temperature Min ($T_{S\ min}$)	150°C
-Temperature Max ($T_{S\ max}$)	200°C
-Time (min to max) (t_s)	60-180 seconds
$T_{S\ max}$ to T_L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T_L)	217°C
-Time (t_L)	60-150 seconds
Peak Temperature (T_P)	260°C
Time within 5°C of actual Peak Temperature (t_p)	20-40 seconds
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

1500 W 表面贴装型

■ 包装



A0	B0	K0	D0	E	F
6.05	8.31	2.54	1.55	1.75	7.50
P0	P1	P2	T	W	Tolerance
4.0	8.0	2.0	0.25	16	0.1

■ 数量

系列	包装	数量	包装规范
TP1.5SMC	Tape and reel	3000/卷	EIA STD RS-481

■ 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