



瞬变电压抑制二极管 Transient Voltage Suppressor Diodes

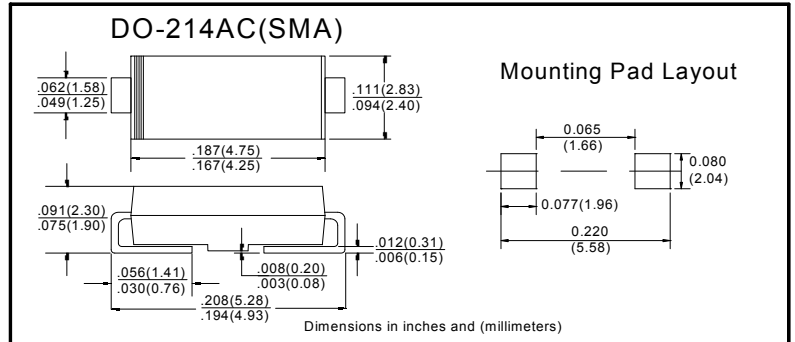
■特征 Features

- P_{PP} 400W
- V_{BR} 6.8V-600V

■用途 Applications

- 箝位电压用 Clamping Voltage

■外形尺寸和印记 Outline Dimensions and Mark



■极限值（绝对最大额定值）

Limiting Values (Absolute Maximum Rating)

参数名称 Item	符号 Symbol	单位 Unit	条件 Conditions	最大值 Max
最大损耗功率(1)(2)(Fig.1) Peak power dissipation	P_{PPM}	W	在10/1000us 波形下测试 with a 10/1000us waveform	400
最大脉冲电流(1) Peak pulse current	I_{PPM}	A	在10/1000us 波形下测试 with a 10/1000us waveform	见下面表格 See Next Table
最大正向浪涌电流(2) Peak forward surge current	I_{FSM}	A	8.3ms正弦半波, 仅单向型 8.3 ms single half sine-wave unidirectional only	40
工作结温和存储温度范围 Operating junction and storage temperature range	T_J, T_{STG}	°C		-55 to +150

■电特性（ $T_a=25^\circ\text{C}$ 除非另有规定）

Electrical Characteristics ($T_a=25^\circ\text{C}$ Unless otherwise specified)

参数名称 Item	符号 Symbol	单位 Unit	条件 Conditions	最大值 Max
最大瞬间正向电压 Maximum instantaneous forward Voltage	V_F	V	在25A下测试, 仅单向型 at 25A for unidirectional only	3.5
典型热阻 Thermal resistance	$R_{\theta JL}$	°C/W	结到引线 junction to lead	30
	$R_{\theta JA}$	°C/W	结到环境, 均引线10mm处 junction to ambient, $L_{Lead} = 10\text{ mm}$	120

备注: Notes:

(1) 不重复脉冲电流, 如图3, 在 $T_A = 25^\circ\text{C}$ 下功率降额曲线如图2。

Non-repetitive current pulse, per Fig. 3 and derated above $T_A = 25^\circ\text{C}$ per Fig.2.

(2) 每个端子安装在 0.2 x 0.2" (5.0 x 5.0 mm)铜焊盘上

Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal



■ 电性参数 (T_A=25℃ 除非另有规定)

Electrical Characteristics (T_A=25℃ unless otherwise noted)

产品型号 (单向) Part Number (Uni)	产品型号 (双向) Part Number (Bi)	击穿电压 V _{BR} @I _T Breakdown Voltage V _{BR} @I _T			最大反向漏电流 I _R @V _{WM} Maximum Reverse Leakage I _R ⁽³⁾ (μA)	最大工作电压 V _{RWM} Working Peak Reverse Voltage V _{RWM} (V)	最大反向浪涌 电流 IPP Maximum Reverse Surge Current IPP ⁽²⁾ (A)	最大箝位电压 Maximum Clamping Voltage V _c @ I _{PP} (V)
		最小 Min(V)	最大 Max (V)	测试电流 I _T ⁽¹⁾ (mA)				
P4SMA6.8A	P4SMA6.8CA	6.46	7.14	10	1000	5.8	38.1	10.5
P4SMA7.5A	P4SMA7.5CA	7.13	7.88	10	500	6.4	35.4	11.3
P4SMA8.2A	P4SMA8.2CA	7.79	8.61	10	200	7.0	33.0	12.1
P4SMA9.1A	P4SMA9.1CA	8.65	9.56	1	50	7.8	29.8	13.4
P4SMA10A	P4SMA10CA	9.50	10.50	1	10	8.6	27.6	14.5
P4SMA11A	P4SMA11CA	10.45	11.55	1	5	9.4	25.6	15.6
P4SMA12A	P4SMA12CA	11.40	12.60	1	5	10.2	23.9	16.7
P4SMA13A	P4SMA13CA	12.35	13.65	1	5	11.1	22.0	18.2
P4SMA15A	P4SMA15CA	14.25	15.75	1	5	12.8	18.8	21.2
P4SMA16A	P4SMA16CA	15.20	16.80	1	5	13.6	17.7	22.5
P4SMA18A	P4SMA18CA	17.10	18.90	1	5	15.3	15.8	25.2
P4SMA20A	P4SMA20CA	19.00	21.00	1	5	17.1	14.4	27.7
P4SMA22A	P4SMA22CA	20.90	23.10	1	5	18.8	13.0	30.6
P4SMA24A	P4SMA24CA	22.80	25.20	1	5	20.5	12.0	33.2
P4SMA27A	P4SMA27CA	25.65	28.35	1	5	23.1	10.6	37.5
P4SMA30A	P4SMA30CA	28.50	31.50	1	5	25.6	9.6	41.4
P4SMA33A	P4SMA33CA	31.35	34.65	1	5	28.2	8.7	45.7
P4SMA36A	P4SMA36CA	34.20	37.80	1	5	30.8	8.0	49.9
P4SMA39A	P4SMA39CA	37.05	40.95	1	5	33.3	7.4	53.9
P4SMA43A	P4SMA43CA	40.85	45.15	1	5	36.8	6.7	59.3
P4SMA47A	P4SMA47CA	44.65	49.35	1	5	40.2	6.1	64.8
P4SMA51A	P4SMA51CA	48.45	53.55	1	5	43.6	5.7	70.1
P4SMA56A	P4SMA56CA	53.20	58.80	1	5	47.8	5.2	77.0
P4SMA62A	P4SMA62CA	58.90	65.10	1	5	53.0	4.7	85.0
P4SMA68A	P4SMA68CA	64.60	71.40	1	5	58.1	4.3	92.0
P4SMA75A	P4SMA75CA	71.25	78.75	1	5	64.1	3.9	103.0
P4SMA82A	P4SMA82CA	77.90	86.10	1	5	70.1	3.5	113.0
P4SMA91A	P4SMA91CA	86.45	95.55	1	5	77.8	3.2	125.0
P4SMA100A	P4SMA100CA	95.00	105.00	1	5	85.5	2.9	137.0
P4SMA110A	P4SMA110CA	104.50	115.50	1	5	94.0	2.6	152.0
P4SMA120A	P4SMA120CA	114.00	126.00	1	5	102.0	2.4	165.0
P4SMA130A	P4SMA130CA	123.50	136.50	1	5	111.0	2.2	179.0
P4SMA150A	P4SMA150CA	142.50	157.50	1	5	128.0	1.9	207.0
P4SMA160A	P4SMA160CA	152.00	168.00	1	5	136.0	1.8	219.0
P4SMA170A	P4SMA170CA	161.50	178.50	1	5	145.0	1.7	234.0
P4SMA180A	P4SMA180CA	171.00	189.00	1	5	154.0	1.6	246.0



■ 电性参数 (T_A =25℃ 除非另有规定)

Electrical Characteristics (T_A =25℃ unless otherwise noted)

产品型号 (单向) Part Number (Uni)	产品型号 (双向) Part Number (Bi)	击穿电压 V _{BR} @I _T Breakdown Voltage V _{BR} @I _T			最大反向漏电流 I _R @V _{WM} Maximum Reverse Leakage I _R ⁽³⁾ (μA)	最大工作电压 V _{RWM} Working Peak Reverse Voltage V _{RWM} (V)	最大反向浪涌电流 IPP Maximum Reverse Surge Current IPP ⁽²⁾ (A)	最大箝位电压 Maximum Clamping Voltage V _c @ I _{PP} (V)
		最小 Min(V)	最大 Max (V)	测试电流 I _T ⁽¹⁾ (mA)				
P4SMA200A	P4SMA200CA	190.00	210.00	1	5	171.0	1.4	274.0
P4SMA220A	P4SMA220CA	209.00	231.00	1	5	185.0	1.2	328.0
P4SMA250A	P4SMA250CA	237.50	262.50	1	5	214.0	1.1	344.0
P4SMA300A	P4SMA300CA	285.00	315.00	1	5	256.0	0.9	414.0
P4SMA350A	P4SMA350CA	332.50	367.50	1	5	299.3	0.8	482.0
P4SMA380A	P4SMA380CA	361.00	399.00	1	5	324.9	0.7	524.4
P4SMA400A	P4SMA400CA	380.00	420.00	1	5	342.0	0.7	552.0
P4SMA440A	P4SMA440CA	418.00	462.00	1	5	376.2	0.6	607.2
P4SMA500A	P4SMA500CA	475.00	525.00	1	5	427.5	0.6	690.0
P4SMA520A	P4SMA520CA	494.00	546.00	1	5	444.6	0.5	717.6
P4SMA550A	P4SMA550CA	522.50	577.50	1	5	470.3	0.5	759.0
P4SMA600A	P4SMA600CA	570.00	630.00	1	5	513.0	0.5	828.0

备注: Notes:

(1) 脉冲测试: t_p≤50ms Pulse test: t_p≤50ms

(2) 浪涌电流波形, 如图3, 功率降额曲线如图2。

Surge current waveform per Fig. 3 and derated per Fig.2.

(3) 对于双向型, V_{WM}在10V及10V以下, I_R值加倍

For bi-directional types having VWM of 10 V and less, the I_R limit is doubled

■特性曲线（典型） Characteristics(Typical)

图1：最大脉冲功率曲线

FIG1: Peak Pulse Power Rating Curve

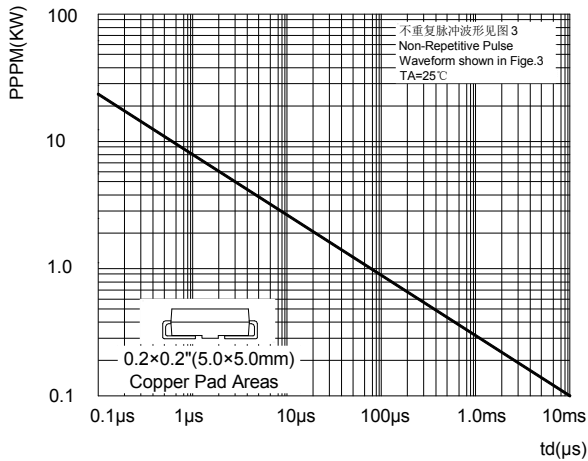


图2：脉冲功率或电流与结温关系

FIG2: Pulse Power or Current vs. Initial Junction Temperature

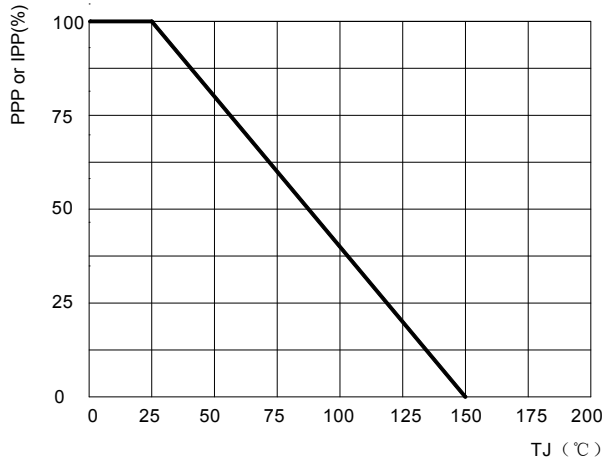


图3：脉冲波形

FIG3: Pulse Waveform

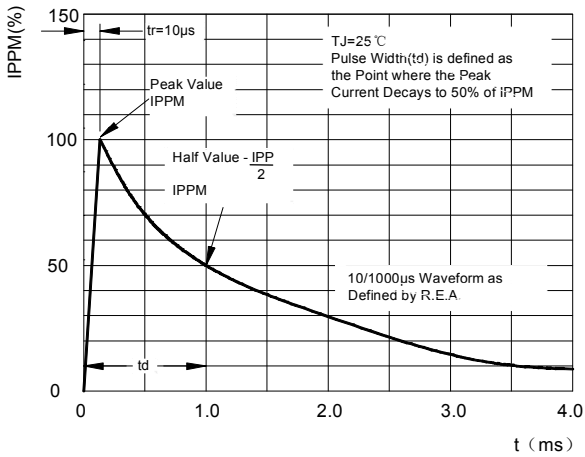


图4：典型瞬态热阻

FIG4: Typical Transient Thermal Impedance

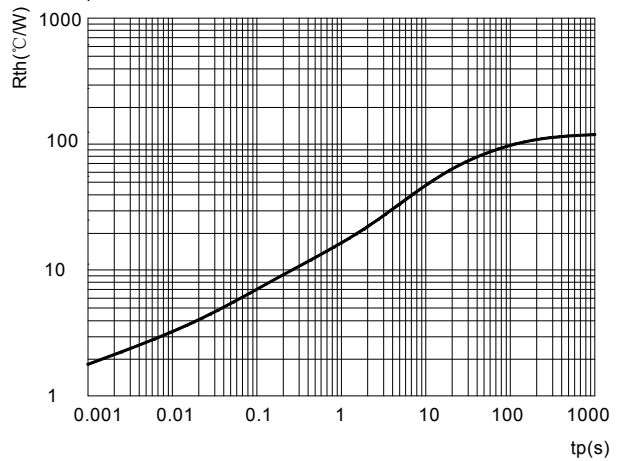


图5：最大不重复浪涌电流

FIG5: Maximum Non-Repetitive Surge Current

