



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

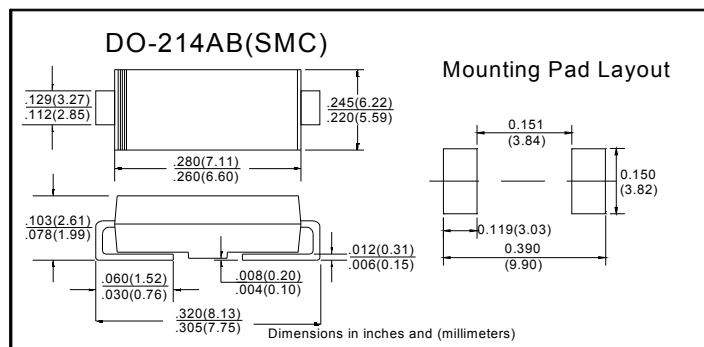
## ■特征 Features

- $P_{PP}$  5000W
- $V_{BR}$  5.0V-440V

## ■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) Peak power dissipation	$P_{PPM}$	W	在10/1000us 波形下测试 with a 10/1000us waveform	5000
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
功率损耗 Power dissipation	$P_D$	W	无限散热片@ $T_A=50^\circ\text{C}$ on infinite heat sink at $T_A=50^\circ\text{C}$	6.0
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	300
工作结温和存储温度范围 Operating junction and storage temperature range	$T_J, T_{STG}$	$^\circ\text{C}$		-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100A下测试, 仅单向型 at 100A for unidirectional only	3.5
典型热阻 Thermal resistance	$R_{\theta JA}$	$^\circ\text{C}/\text{W}$	结到环境 junction to ambient	75
	$R_{\theta JL}$	$^\circ\text{C}/\text{W}$	结到引线 junction to lead	15

## 备注: Notes:

(1) 不重复脉冲电流, 如图3, 在 $T_A=25^\circ\text{C}$ 下功率降额曲线见如图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 0.31 x 0.31" (8.0 x 8.0 mm)铜焊盘上

Mounted on 0.31 x 0.31" (8.0 x 8.0 mm) copper pads to each terminal

■ 电性参数 ( $T_A=25^{\circ}\text{C}$  除非另有规定)

Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  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 $I_R^{(3)}$ ( $\mu\text{A}$ )	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 <sup>(2)</sup> (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)				
5.0SMDJ11	5.0SMDJ11C	12.20	14.90	1.0	800	11.0	251.2	20.1
5.0SMDJ11A	5.0SMDJ11CA	12.20	13.50	1.0	800	11.0	277.4	18.2
5.0SMDJ12	5.0SMDJ12C	13.30	16.30	1.0	800	12.0	229.5	22.0
5.0SMDJ12A	5.0SMDJ12CA	13.30	14.70	1.0	800	12.0	253.7	19.9
5.0SMDJ13	5.0SMDJ13C	14.40	17.60	1.0	500	13.0	212.2	23.8
5.0SMDJ13A	5.0SMDJ13CA	14.40	15.90	1.0	500	13.0	234.9	21.5
5.0SMDJ14	5.0SMDJ14C	15.60	19.10	1.0	200	14.0	195.7	25.8
5.0SMDJ14A	5.0SMDJ14CA	15.60	17.20	1.0	200	14.0	217.6	23.2
5.0SMDJ15	5.0SMDJ15C	16.70	20.40	1.0	100	15.0	187.7	26.9
5.0SMDJ15A	5.0SMDJ15CA	16.70	18.50	1.0	100	15.0	206.9	24.4
5.0SMDJ16	5.0SMDJ16C	17.80	21.80	1.0	50	16.0	175.3	28.8
5.0SMDJ16A	5.0SMDJ16CA	17.80	19.70	1.0	50	16.0	194.2	26.0
5.0SMDJ17	5.0SMDJ17C	18.90	23.10	1.0	20	17.0	165.5	30.5
5.0SMDJ17A	5.0SMDJ17CA	18.90	20.90	1.0	20	17.0	182.9	27.6
5.0SMDJ18	5.0SMDJ18C	20.00	24.40	1.0	10	18.0	156.8	32.2
5.0SMDJ18A	5.0SMDJ18CA	20.00	22.10	1.0	10	18.0	172.9	29.2
5.0SMDJ19	5.0SMDJ19C	21.10	25.70	1.0	10	19.0	148.5	34.0
5.0SMDJ19A	5.0SMDJ19CA	21.10	23.30	1.0	10	19.0	164.0	30.8
5.0SMDJ20	5.0SMDJ20C	22.20	27.10	1.0	5	20.0	141.0	35.8
5.0SMDJ20A	5.0SMDJ20CA	22.20	24.50	1.0	5	20.0	155.8	32.4
5.0SMDJ22	5.0SMDJ22C	24.40	29.80	1.0	5	22.0	128.2	39.4
5.0SMDJ22A	5.0SMDJ22CA	24.40	26.90	1.0	5	22.0	142.2	35.5
5.0SMDJ24	5.0SMDJ24C	26.70	32.60	1.0	5	24.0	117.4	43.0
5.0SMDJ24A	5.0SMDJ24CA	26.70	29.50	1.0	5	24.0	129.8	38.9
5.0SMDJ26	5.0SMDJ26C	28.90	35.30	1.0	5	26.0	108.3	46.6
5.0SMDJ26A	5.0SMDJ26CA	28.90	31.90	1.0	5	26.0	120.0	42.1
5.0SMDJ28	5.0SMDJ28C	31.10	38.00	1.0	5	28.0	101.0	50.0
5.0SMDJ28A	5.0SMDJ28CA	31.10	34.40	1.0	5	28.0	111.2	45.4
5.0SMDJ30	5.0SMDJ30C	33.30	40.70	1.0	5	30.0	94.4	53.5
5.0SMDJ30A	5.0SMDJ30CA	33.30	36.80	1.0	5	30.0	104.3	48.4
5.0SMDJ33	5.0SMDJ33C	36.70	44.90	1.0	5	33.0	85.6	59.0
5.0SMDJ33A	5.0SMDJ33CA	36.70	40.60	1.0	5	33.0	94.7	53.3
5.0SMDJ36	5.0SMDJ36C	40.00	48.90	1.0	5	36.0	78.5	64.3
5.0SMDJ36A	5.0SMDJ36CA	40.00	44.20	1.0	5	36.0	86.9	58.1
5.0SMDJ40	5.0SMDJ40C	44.40	54.30	1.0	5	40.0	70.7	71.4
5.0SMDJ40A	5.0SMDJ40CA	44.40	49.10	1.0	5	40.0	78.3	64.5
5.0SMDJ43	5.0SMDJ43C	47.80	58.40	1.0	5	43.0	65.8	76.7
5.0SMDJ43A	5.0SMDJ43CA	47.80	52.80	1.0	5	43.0	72.7	69.4



# 5.0SMDJ SERIES

■ 电性参数 ( $T_A=25^\circ\text{C}$  除非另有规定)

Electrical Characteristics ( $T_A=25^\circ\text{C}$  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 $I_R^{(3)}$ ( $\mu\text{A}$ )	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 <sup>(2)</sup> (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)				
5.0SMDJ45	5.0SMDJ45C	50.00	61.10	1.0	5	45.0	62.9	80.3
5.0SMDJ45A	5.0SMDJ45CA	50.00	55.30	1.0	5	45.0	69.4	72.7
5.0SMDJ48	5.0SMDJ48C	53.30	65.10	1.0	5	48.0	59.1	85.5
5.0SMDJ48A	5.0SMDJ48CA	53.30	58.90	1.0	5	48.0	65.2	77.4
5.0SMDJ51	5.0SMDJ51C	56.70	69.30	1.0	5	51.0	55.4	91.1
5.0SMDJ51A	5.0SMDJ51CA	56.70	62.70	1.0	5	51.0	61.3	82.4
5.0SMDJ54	5.0SMDJ54C	60.00	73.30	1.0	5	54.0	52.4	96.3
5.0SMDJ54A	5.0SMDJ54CA	60.00	66.30	1.0	5	54.0	58.0	87.1
5.0SMDJ58	5.0SMDJ58C	64.40	78.70	1.0	5	58.0	49.0	103.0
5.0SMDJ58A	5.0SMDJ58CA	64.40	71.20	1.0	5	58.0	53.9	93.6
5.0SMDJ60	5.0SMDJ60C	66.70	81.50	1.0	5	60.0	47.2	107.0
5.0SMDJ60A	5.0SMDJ60CA	66.70	73.70	1.0	5	60.0	52.1	96.8
5.0SMDJ64	5.0SMDJ64C	71.10	86.90	1.0	5	64.0	44.3	114.0
5.0SMDJ64A	5.0SMDJ64CA	71.10	78.60	1.0	5	64.0	49.0	103.0
5.0SMDJ70	5.0SMDJ70C	77.80	95.10	1.0	5	70.0	40.4	125.0
5.0SMDJ70A	5.0SMDJ70CA	77.80	86.00	1.0	5	70.0	44.7	113.0
5.0SMDJ75	5.0SMDJ75C	83.30	102.00	1.0	5	75.0	37.7	134.0
5.0SMDJ75A	5.0SMDJ75CA	83.30	92.10	1.0	5	75.0	41.7	121.0
5.0SMDJ78	5.0SMDJ78C	86.70	106.00	1.0	5	78.0	36.3	139.0
5.0SMDJ78A	5.0SMDJ78CA	86.70	95.80	1.0	5	78.0	40.1	126.0
5.0SMDJ80	5.0SMDJ80C	88.96	108.80	1.0	5	80.0	35.3	143.2
5.0SMDJ80A	5.0SMDJ80CA	88.80	97.60	1.0	5	80.0	39.0	129.6
5.0SMDJ85	5.0SMDJ85C	94.40	115.00	1.0	5	85.0	33.4	151.0
5.0SMDJ85A	5.0SMDJ85CA	94.40	104.00	1.0	5	85.0	36.8	137.0
5.0SMDJ90	5.0SMDJ90C	100.00	122.00	1.0	5	90.0	31.5	160.0
5.0SMDJ90A	5.0SMDJ90CA	100.00	111.00	1.0	5	90.0	34.5	146.0
5.0SMDJ100	5.0SMDJ100C	111.00	136.00	1.0	5	100.0	28.2	179.0
5.0SMDJ100A	5.0SMDJ100CA	111.00	123.00	1.0	5	100.0	31.1	162.0
5.0SMDJ110	5.0SMDJ110C	122.00	149.00	1.0	5	110.0	25.7	196.0
5.0SMDJ110A	5.0SMDJ110CA	122.00	135.00	1.0	5	110.0	28.5	177.0
5.0SMDJ120	5.0SMDJ120C	133.00	163.00	1.0	5	120.0	23.6	214.0
5.0SMDJ120A	5.0SMDJ120CA	133.00	147.00	1.0	5	120.0	26.1	193.0
5.0SMDJ130	5.0SMDJ130C	144.00	176.00	1.0	5	130.0	21.8	231.0
5.0SMDJ130A	5.0SMDJ130CA	144.00	159.00	1.0	5	130.0	24.1	209.0
5.0SMDJ140	5.0SMDJ140C	155.70	190.40	1.0	5	140.0	20.1	250.6
5.0SMDJ140A	5.0SMDJ140CA	155.00	171.00	1.0	5	140.0	22.2	226.8

■ 电性参数 ( $T_A=25^\circ\text{C}$  除非另有规定)

Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)

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		最小 Min(V)	最大 Max (V)	测试电 流 $I_T^{(1)}$ (mA)				
5.0SMDJ150	5.0SMDJ150C	167.00	204.00	1.0	5	150.0	18.8	268.0
5.0SMDJ150A	5.0SMDJ150CA	167.00	185.00	1.0	5	150.0	20.7	243.0
5.0SMDJ160	5.0SMDJ160C	178.00	218.00	1.0	5	160.0	17.6	287.0
5.0SMDJ160A	5.0SMDJ160CA	178.00	197.00	1.0	5	160.0	19.5	259.0
5.0SMDJ170	5.0SMDJ170C	189.00	231.00	1.0	5	170.0	16.6	304.0
5.0SMDJ170A	5.0SMDJ170CA	189.00	209.00	1.0	5	170.0	18.3	275.0
5.0SMDJ180	5.0SMDJ180C	200.20	244.80	1.0	5	180.0	15.6	322.2
5.0SMDJ180A	5.0SMDJ180CA	200.00	220.00	1.0	5	180.0	17.3	291.6
5.0SMDJ190	5.0SMDJ190C	211.30	258.40	1.0	5	190.0	14.8	340.1
5.0SMDJ190A	5.0SMDJ190CA	211.00	232.00	1.0	5	190.0	16.4	307.8
5.0SMDJ200A	5.0SMDJ200CA	224.00	247.00	1.0	5	200.0	9.2	324.0
5.0SMDJ220A	5.0SMDJ220CA	246.00	272.00	1.0	5	220.0	8.4	356.0
5.0SMDJ250A	5.0SMDJ250CA	279.00	309.00	1.0	5	250.0	7.4	405.0
5.0SMDJ300A	5.0SMDJ300CA	335.00	371.00	1.0	5	300.0	6.1	486.0
5.0SMDJ350A	5.0SMDJ350CA	391.00	432.00	1.0	5	350.0	5.3	567.0
5.0SMDJ400A	5.0SMDJ400CA	447.00	494.00	1.0	5	400.0	4.6	648.0
5.0SMDJ440A	5.0SMDJ440CA	492.00	543.00	1.0	5	440.0	4.2	713.0

备注: Notes:

(1) 脉冲测试:  $t_p \leq 50\text{ms}$  Pulse test:  $t_p \leq 50\text{ms}$

(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  $V_{WM}$  of 10 V and less, the  $I_R$  limit is doubled

(4) 对于双向SMCJ5.0CA,  $V_{BR}$ 最大值为7.25V

For the bi-directional SMCJ5.0CA, the maximum  $V_{BR}$  is 7.25 V



## ■特性曲线 (典型) Characteristics(Typical)

图1: 最大脉冲功率曲线  
FIG1: Peak Pulse Power Rating Curve

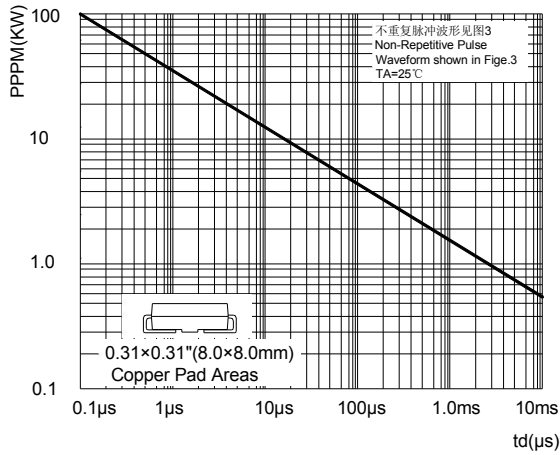


图3: 脉冲波形  
FIG3: Pulse Waveform

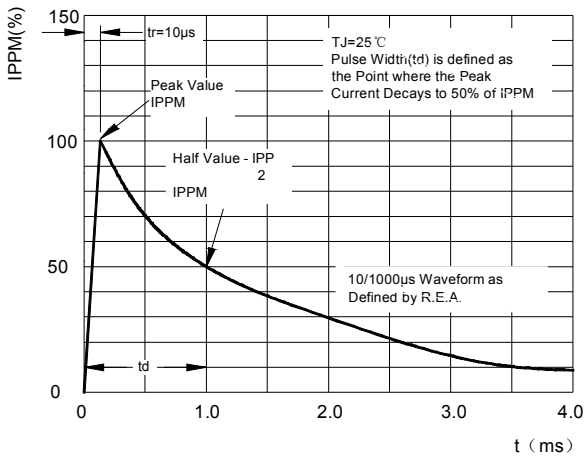


图5: 最大不重复浪涌电流  
FIG5: Maximum Non-Repetitive Surge Current

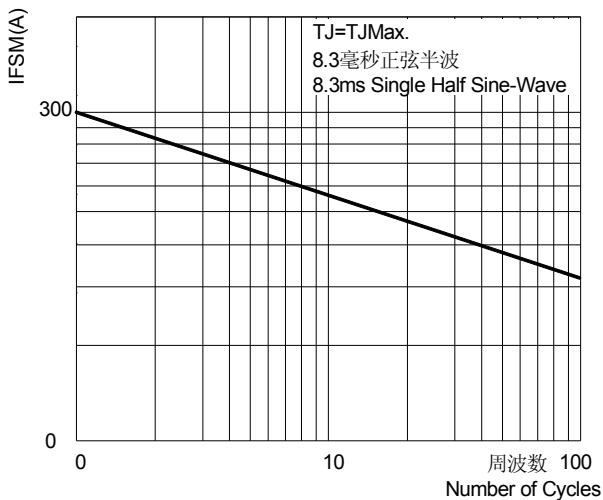


图2: 脉冲功率或电流与结温关系  
FIG2: Pulse Power or Current vs. Initial Junction Temperature

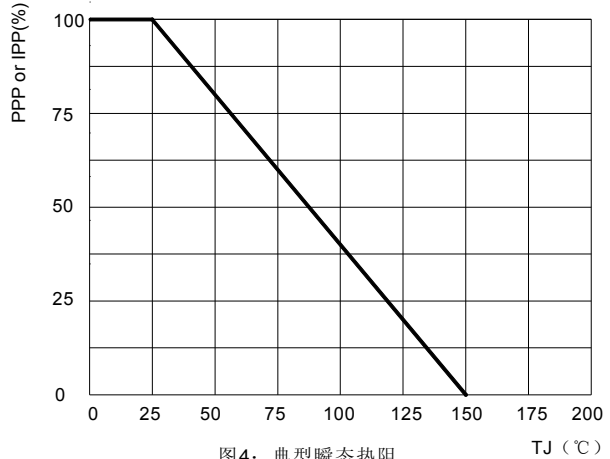


图4: 典型瞬态热阻  
FIG4: Typical Transient Thermal Impedance

