飞仕龙达
FEISHILONGDA

TVS 瞬变电压抑制二极管 Transient Voltage Suppressor [SMCJ Series]

特性/机械性能： FEATURES/MECHANICAL DATE


SMC/DO-214AB

- ◆ 1500W 峰值脉冲功率 1500W 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.
- ◆ 耐焊接热：250℃/10S，引出端1.5mm处Resistance to soldering heat:250 ℃ /10S,terminal1.5mm.
- ◆ 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）1500	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)	6.5	W
最大峰值正向浪涌电流(注释3) 仅对单向型 Maximum Peak Forward surge Current (Note3)For unidirectional only	IFSM	200.0	A
最大瞬态正向电压 @ 50A 仅对单向型 (注释4) Maximum instantaneous forward voltage @50A ,For unidirectional only(Note4)	VF	3.5/5.0	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。10 / 1000μs waveform non-repetitive current pulse
2. 在引线末端安装面积为5.0mm2, 厚0.013mm的散热铜片,Ta=75℃.
   Mounted on copper pad area of (5×5×0.013㎜) ,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。
   Measured on 10ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.
4. SMBJ5.0V~SMBJ90V的产品VF≤3.5v，SMBJ90V~SMBJ170V的产品VF≤5.0v
   VF=3.5V max. for devices of 5.0V≤V(BR) ≤90V，and VF≤ 5.0V max. for devices of V(BR)＞90V

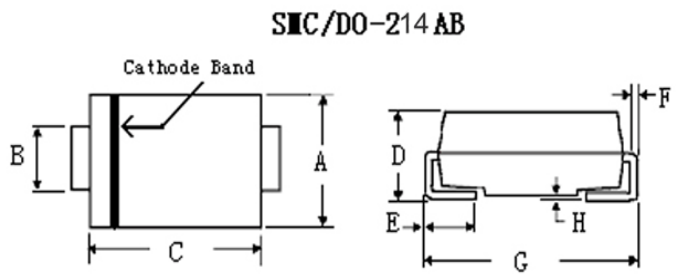
双向型器件应用说明:DEVICES FOR BIDIRECTIONAL APPLICATIONS :

1.在型号名称后注有C 或CA，表示双向型。For bidirectional use C or CA suffix for types

2.电气特性适用于两个方向。 Electrical characteristics apply in both directions.

[SMCJ Series] Transient Voltage Suppressor 瞬变电压抑制二极管 TVS

产品外形尺寸： PRODUCT APPEARANCE SIZE



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.220	0.236	5.6	6.0
B	0.112	0.124	2.85	3.15
C	0.258	0.27	6.55	6.85
D	0.083	0.098	2.1	2.5
E	0.031	0.055	0.8	1.4
F	0.006	0.013	0.18	0.32
G	0.309	0.321	7.85	8.15
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} MaximumReverse leadage @V_{WM}	最大峰值脉冲浪涌电流 Maximum Peak Pulse Reverse Current	最大箝位电压 @Ippm Maximum Clamping Voltage @I ppm
	UNI-	BI-	$V_{(BR)}$(V) MIN	$V_{(BR)}$(V) MAX	I_T(mA)	V_{WM}(V)	I_D(μA) (Note2)	I ppm (A)	V_C(V)
SMCJ5.0			6.40	7.30	10.0	5.0	1000	164.0	9.60
SMCJ5.0A	GDE	BDE	6.40	7.00	10.0	5.0	1000	171.0	9.20
SMCJ6.0			6.67	8.15	10.0	6.0	1000	138.0	11.4
SMCJ6.0A	GDG	BDG	6.67	7.37	10.0	6.0	1000	152.0	10.3
SMCJ6.5			7.22	8.82	10.0	6.5	500	128.0	12.3
SMCJ6.5A	GDK	BDK	7.22	7.98	10.0	6.5	500	140.0	11.2
SMCJ7.0			7.78	9.51	10.0	7.0	200	118.0	13.3
SMCJ7.0A	GDM	BDM	7.78	8.60	10.0	7.0	200	131.0	12.0
SMCJ7.5			8.33	10.3	1.0	7.5	100	110.0	14.3
SMCJ7.5A	GDP	BDP	8.33	9.21	1.0	7.5	100	122.0	12.9
SMCJ8.0			8.89	10.9	1.0	8.0	50	105.0	15.0
SMCJ8.0A	GDR	BDR	8.89	9.83	1.0	8.0	50	115.0	13.6
SMCJ8.5			9.44	11.5	1.0	8.5	20	99.0	15.9
SMCJ8.5A	GDT	BDT	9.44	10.4	1.0	8.5	20	109.0	14.4
SMCJ9.0			10.0	12.2	1.0	9.0	10	93.0	16.9
SMCJ9.0A	GDV	BDV	10.0	11.1	1.0	9.0	10	102.0	15.4
SMCJ10			11.1	13.6	1.0	10.0	5	83.0	18.8
SMCJ10A	GDX	BDX	11.1	12.3	1.0	10.0	5	92.0	17.0
SMCJ11			12.2	14.9	1.0	11.0	5	78.0	20.1
SMCJ11A	GDZ	BDZ	12.2	13.5	1.0	11.0	5	86.0	18.2
SMCJ12			13.3	16.3	1.0	12.0	5	71.0	22.0
SMCJ12A	GEE	BEE	13.3	14.7	1.0	12.0	5	79.0	19.9
SMCJ13			14.4	17.6	1.0	13.0	5	66.0	23.8
SMCJ13A	GEG	BEG	14.4	15.9	1.0	13.0	5	73.0	21.5
SMCJ14			15.6	19.1	1.0	14.0	5	61.0	25.8
SMCJ14A	GEK	BEK	15.6	17.2	1.0	14.0	5	67.0	23.2
SMCJ15			16.7	20.4	1.0	15.0	5	58.0	26.9
SMCJ15A	GEM	BEM	16.7	18.5	1.0	15.0	5	64.0	24.4

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	UNI-	BI-	$V_{(BR)}$(V) MIN	$V_{(BR)}$(V) MAX	I_T(mA)	V_{WM}(V)	I_D(μA) (Note2)	I ppm (A)	V_C(V)
SMCJ16			17.8	21.8	1.0	16.0	5	54.0	28.8
SMCJ16A	GEP	BEP	17.8	19.7	1.0	16.0	5	60.0	26.0
SMCJ17			18.9	23.1	1.0	17.0	5	51.0	30.5
SMCJ17A	GER	BER	18.9	20.9	1.0	17.0	5	57.0	27.6
SMCJ18			20.0	24.4	1.0	18.0	5	48.0	32.2
SMCJ18A	GET	BET	20.0	22.1	1.0	18.0	5	53.0	29.2
SMCJ20			22.2	27.1	1.0	20.0	5	43.0	35.8
SMCJ20A	GEV	BEV	22.2	24.5	1.0	20.0	5	48.0	32.4
SMCJ22			24.4	29.8	1.0	22.0	5	39.0	39.4
SMCJ22A	GEX	BEX	24.4	26.9	1.0	22.0	5	44.0	35.5
SMCJ24			26.7	32.6	1.0	24.0	5	36.0	43.0
SMCJ24A	GEZ	BEZ	26.7	29.5	1.0	24.0	5	40.0	38.9
SMCJ26			28.9	35.3	1.0	26.0	5	33.0	46.6
SMCJ26A	GFE	BFE	28.9	31.9	1.0	26.0	5	37.0	42.1
SMCJ28			31.1	38.0	1.0	28.0	5	31.0	50.0
SMCJ28A	GFG	BFG	31.1	34.4	1.0	28.0	5	34.0	45.4
SMCJ30			33.3	40.7	1.0	30.0	5	29.0	53.5
SMCJ30A	GFK	BFK	33.3	36.8	1.0	30.0	5	32.0	48.4
SMCJ33			36.7	44.9	1.0	33.0	5	26.0	59.0
SMCJ33A	GFM	BFM	36.7	40.6	1.0	33.0	5	29.0	53.3
SMCJ36			40.0	48.9	1.0	36.0	5	24.0	64.3
SMCJ36A	GFP	BFP	40.0	44.2	1.0	36.0	5	27.0	58.1
SMCJ40			44.4	54.3	1.0	40.0	5	22.0	71.4
SMCJ40A	GFR	BFR	44.4	49.1	1.0	40.0	5	24.0	64.5
SMCJ43			47.8	58.4	1.0	43.0	5	20.0	76.7
SMCJ43A	GFT	BFT	47.8	52.8	1.0	43.0	5	22.0	69.4
SMCJ45			50.0	61.1	1.0	45.0	5	19.0	80.3
SMCJ45A	GFV	BFV	50.0	55.3	1.0	45.0	5	21.0	72.7
SMCJ48			53.3	65.1	1.0	48.0	5	18.0	85.5
SMCJ48A	GFX	BFX	53.3	58.9	1.0	48.0	5	20.0	77.4
SMCJ51			56.7	69.3	1.0	51.0	5	17.0	91.1
SMCJ51A	GFZ	BFZ	56.7	62.7	1.0	51.0	5	19.0	82.4
SMCJ54			60.0	73.3	1.0	54.0	5	16.0	96.3
SMCJ54A	GGE	BGE	60.0	66.3	1.0	54.0	5	18.0	87.1
SMCJ58			64.4	78.7	1.0	58.0	5	15.0	103
SMCJ58A	GGG	BGG	64.4	71.2	1.0	58.0	5	16.0	93.6
SMCJ60			66.7	81.5	1.0	60.0	5	14.0	107
SMCJ60A	GGK	BGK	66.7	73.7	1.0	60.0	5	16.0	96.8
SMCJ64			71.1	86.9	1.0	64.0	5	13.8	114

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	UNI-	BI-	$V_{(BR)}$(V) MIN	$V_{(BR)}$(V) MAX	I_T(mA)	V_{WM}(V)	I_D(μA) (Note2)	I ppm (A)	V_C(V)
SMCJ64A	GGM	BGM	71.1	78.6	1.0	64.0	5	15.0	103
SMCJ70			77.8	95.1	1.0	70.0	5	12.6	125
SMCJ70A	GGP	BGP	77.8	86.0	1.0	70.0	5	13.9	113
SMCJ75			83.3	102	1.0	75.0	5	11.7	134
SMCJ75A	GGR	BGR	83.3	92.1	1.0	75.0	5	13.0	121
SMCJ78			86.7	106	1.0	78.0	5	11.3	139
SMCJ78A	GGT	BGT	86.7	95.8	1.0	78.0	5	12.5	126
SMCJ85			94.4	115	1.0	85.0	5	10.4	151
SMCJ85A	GGV	BGV	94.4	104	1.0	85.0	5	11.5	137
SMCJ90			100	122	1.0	90.0	5	9.8	160
SMCJ90A	GGX	BGX	100	111	1.0	90.0	5	10.7	146
SMCJ100			111	136	1.0	100	5	8.8	179
SMCJ100A	GGZ	BGZ	111	123	1.0	100	5	9.7	162
SMCJ110			122	149	1.0	110	5	8.0	196
SMCJ110A	GHE	BHE	122	135	1.0	110	5	8.9	177
SMCJ120			133	163	1.0	120	5	7.3	214
SMCJ120A	GHG	BHG	133	147	1.0	120	5	8.1	193
SMCJ130			144	176	1.0	130	5	6.8	231
SMCJ130A	GHK	BHK	144	159	1.0	130	5	7.5	209
SMCJ150			167	204	1.0	150	5	5.8	268
SMCJ150A	GHM	BHM	167	185	1.0	150	5	6.4	243
SMCJ160			178	218	1.0	160	5	5.4	287
SMCJ160A	GHP	BHP	178	197	1.0	160	5	6.0	259
SMCJ170			189	231	1.0	170	5	5.1	304
SMCJ170A	GHR	BHR	189	209	1.0	170	5	5.7	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.

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特性曲线图： RATINGS AND CHARACTERISTIC CURVES

FIG. 1 - PEAK PULSE POWER RATING CURVE

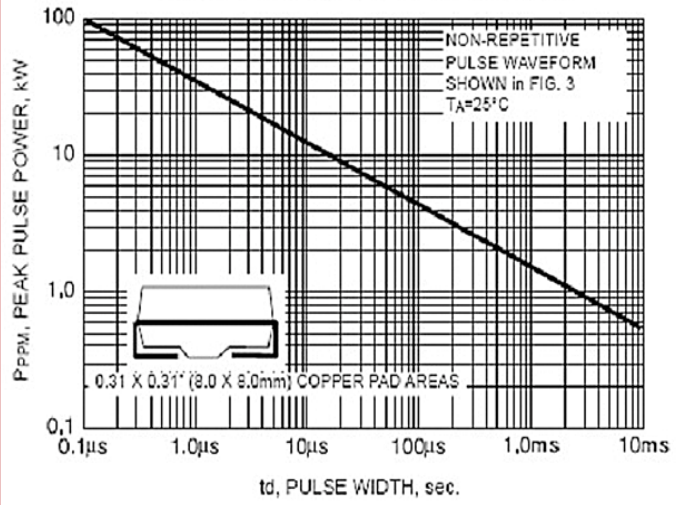


FIG. 2 - PULSE DERATING CURVE

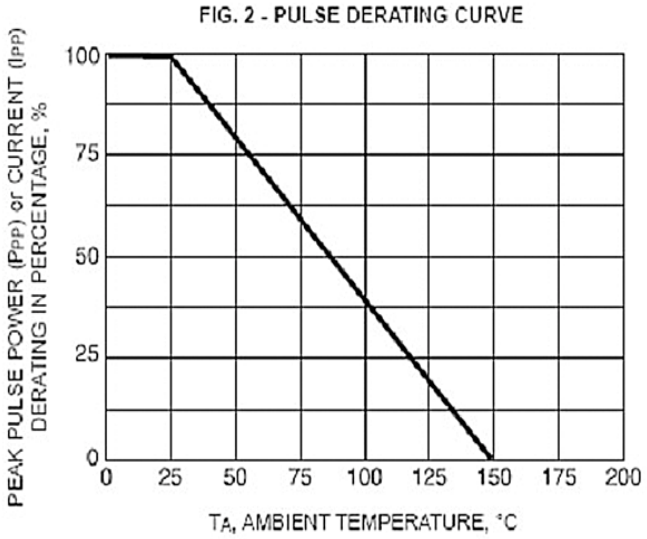


FIG. 3 - PULSE WAVEFORM

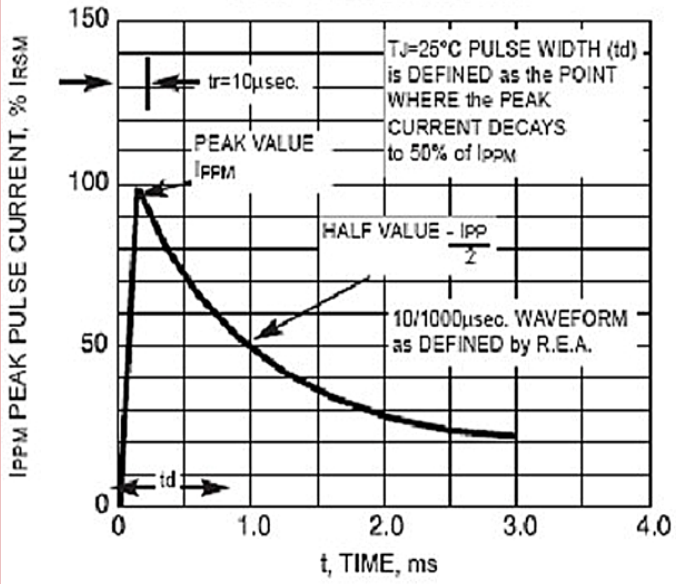
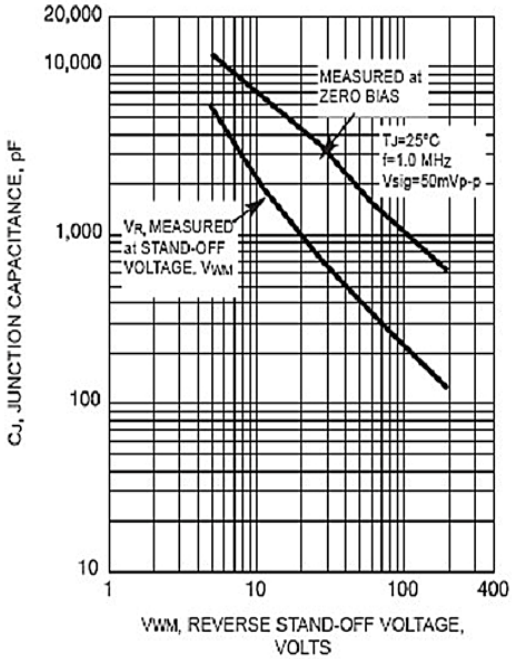


FIG. 4 - TYPICAL JUNCTION CAPACITANCE
UNI-DIRECTIONAL



特性曲线图： RATINGS AND CHARACTERISTIC CURVES

FIG. 5 - TYPICAL JUNCTION CAPACITANCE
BI-DIRECTIONAL

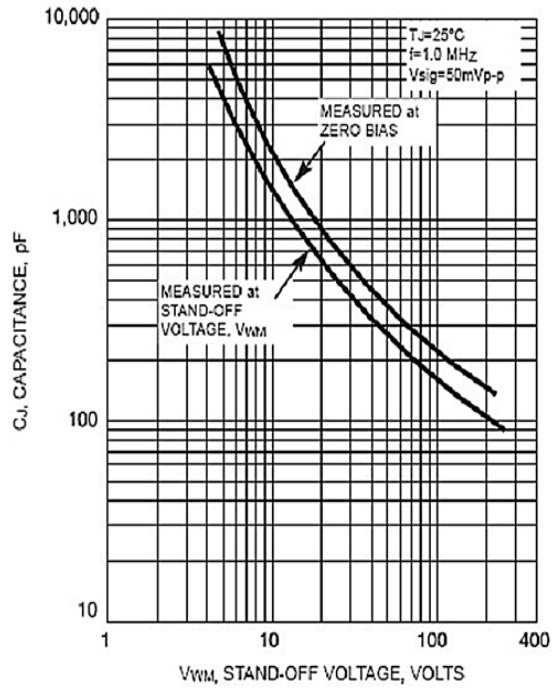


FIG. 6 - MAXIMUM NON-REPETITIVE PEAK FORWARD
SURGE CURRENT

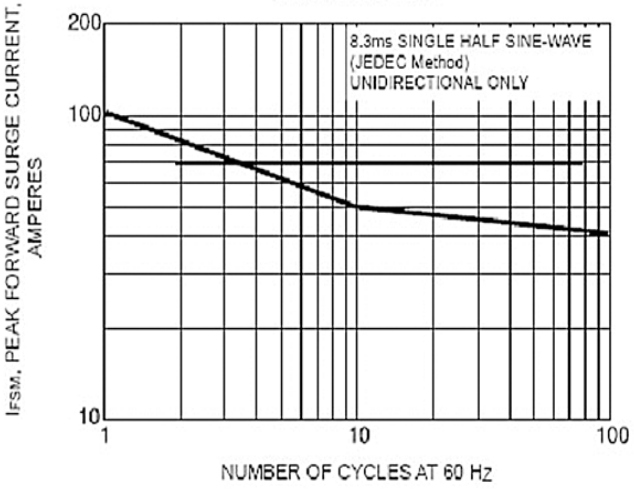


FIG. 7 - MAXIMUM CONTINUOUS POWER DISSIPATION