



**TAYCHIPST**

SURFACE MOUNT TRANSIENT VOLTAGE RECTIFIERS

SMBJ5.0 THRU SMBJ170CA  
600W

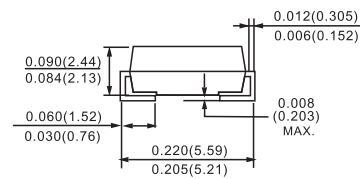
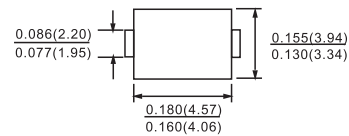
### Features

- ✧ For surface mounted application
- ✧ Low profile package
- ✧ Built-in strain relief
- ✧ Glass passivated junction
- ✧ Excellent clamping capability
- ✧ Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- ✧ Typical  $I_R$  less than 1  $\mu$ A above 10V
- ✧ High temperature soldering guaranteed: 260°C / 10 seconds at terminals
- ✧ Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- ✧ 600 watts peak pulse power capability with a 10 x 1000 us waveform by 0.01% duty cycle

### Mechanical Data

- ✧ Case: Molded plastic
- ✧ Terminals: Pure tin plated lead free,
- ✧ Polarity: Indicated by cathode band except bipolar
- ✧ Standard packaging: 12mm tape (EIA STD RS-481)
- ✧ Weight: 0.093gram

DO-214AA(SMB)



Dimensions in inches and (millimeters)

### MAXIMUM RATINGS

Rating at Ta = 25 °C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 $\mu$ s (1) waveform (Notes 1, 2, Fig. 3)	PPPM	Minimum 600	Watts
Peak Pulse Current on 10/1000 $\mu$ s waveform (Note 1, Fig. 5)	IPPM	See Table	Amps
Peak forward Surge Current 8.3 ms single half sine-wave superimposed on rated load ( JEDEC Method )(Notes 2, 3)			
Maximum Instantaneous Forward Voltage at 50A (Note 3,4 )	V <sub>FM</sub>	See Note 3, 4	Volts
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	- 65 to + 150	°C

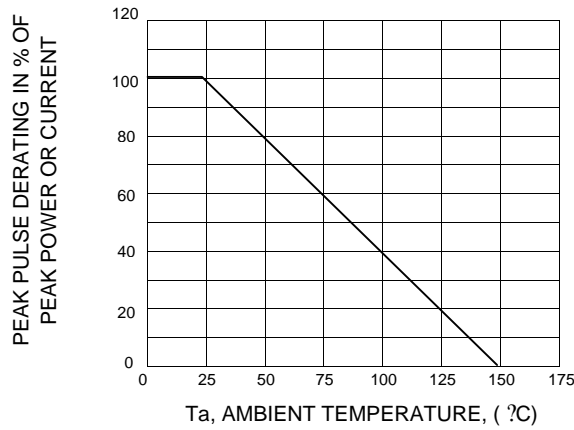
#### Note :

- (1) Non-repetitive Current pulse, per Fig. 5 and derated above Ta = 25 °C per Fig. 1
- (2) Mounted on 5.0mm<sup>2</sup> (0.013mm thick) land areas.
- (3) Measured on 8.3ms. Single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minutes maximum.
- (4) V<sub>F</sub>=3.5V for SMBJ5.0 thru SMBJ90 devices and V<sub>F</sub>=5V for SMBJ100 thru SMBJ170 devices.

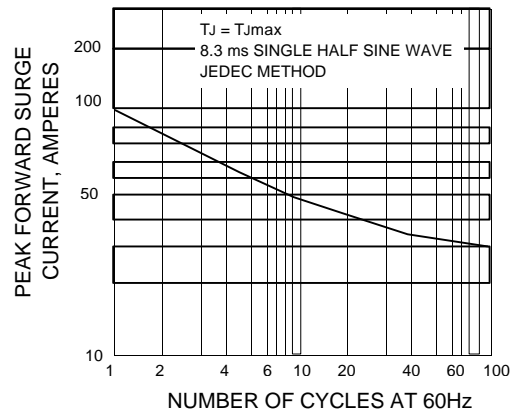
UPDATE : MAY 25, 2000

Device Type 设备类型	Device marking code 设备标示代码		Breakdown voltage $V_{BR}@I_T$ 击穿电压 $V_{BR}@I_T$		Test current 当前测试 电流	Stand-off voltage 关断电压	Maximum reverse leakage@ $V_{WM}$ 最大反向 电流@ $V_{WM}$	Maximum peak pulse surge current 最大峰值浪涌电流	Maximum clamping voltage@ $I_{PPM}$ 最大箝位电压@ $I_{PPM}$
	UNI	BI	V		$I_T$	$V_{WM}$	$I_D$	$I_{PPM}$	$V_C$
			MIN	MAX	mA	V	$\mu A$	A	V
(+)SMBJ5.0A(CA)	KE	KE	6.40	7.07	10	5.0	800	65.2	9.2
(+)SMBJ6.0A(CA)	KG	KG	6.67	7.37	10	6.0	800	58.3	10.3
(+)SMBJ6.5A(CA)	KK	AK	7.22	7.98	10	6.5	500	53.6	11.2
(+)SMBJ7.0A(CA)	KM	KM	7.78	8.60	10	7.0	200	50.0	12.0
(+)SMBJ7.5A(CA)	KP	AP	8.33	9.21	1.0	7.5	100	46.5	12.9
(+)SMBJ8.0A(CA)	KR	AR	8.89	9.83	1.0	8.0	50	44.1	13.6
(+)SMBJ8.5A(CA)	KT	AT	9.44	10.4	1.0	8.5	20	41.7	14.4
(+)SMBJ9.0A(CA)	KV	AV	10.0	11.1	1.0	9.0	10	39.0	15.4
(+)SMBJ10A(CA)	KX	AX	11.1	12.3	1.0	10	5.0	35.3	17.0
(+)SMBJ11A(CA)	KZ	KZ	12.2	13.5	1.0	11	5.0	33.0	18.2
(+)SMBJ12A(CA)	LE	BE	13.3	14.7	1.0	12	5.0	30.2	19.0
(+)SMBJ13A(CA)	LG	LG	14.4	15.9	1.0	13	1.0	27.9	21.5
(+)SMBJ14A(CA)	LK	BK	15.6	17.2	1.0	14	1.0	25.9	23.2
(+)SMBJ15A(CA)	LM	BM	16.7	18.5	1.0	15	1.0	24.6	24.4
(+)SMBJ16A(CA)	LP	LM	17.8	19.7	1.0	16	1.0	23.1	26.0
(+)SMBJ17A(CA)	LR	LR	18.9	20.9	1.0	17	1.0	21.7	27.6
(+)SMBJ18A(CA)	LT	BT	20.0	22.1	1.0	18	1.0	20.5	29.2
(+)SMBJ20A(CA)	LV	LV	22.2	24.5	1.0	20	1.0	18.5	32.4
(+)SMBJ22A(CA)	LX	BX	24.4	26.9	1.0	22	1.0	16.9	35.5
(+)SMBJ24A(CA)	LZ	BZ	26.7	29.5	1.0	24	1.0	15.4	38.9
(+)SMBJ26A(CA)	ME	CE	28.9	31.9	1.0	26	1.0	14.3	42.1
(+)SMBJ28A(CA)	MG	MG	31.1	34.4	1.0	28	1.0	13.2	45.4
(+)SMBJ30A(CA)	MK	CK	33.3	36.8	1.0	30	1.0	12.4	48.4
(+)SMBJ33A(CA)	MM	CM	36.7	40.6	1.0	33	1.0	11.3	53.3
(+)SMBJ36A(CA)	MP	CP	40.0	44.2	1.0	36	1.0	10.3	58.1
(+)SMBJ40A(CA)	MR	CR	44.4	49.1	1.0	40	1.0	9.3	64.5
(+)SMBJ43A(CA)	MT	CT	47.8	52.8	1.0	43	1.0	8.6	69.4
(+)SMBJ45A(CA)	MV	MV	50.0	55.3	1.0	45	1.0	8.3	72.7
(+)SMBJ48A(CA)	MX	MX	53.3	58.9	1.0	48	1.0	7.8	77.4
(+)SMBJ51A(CA)	MZ	MZ	56.7	62.7	1.0	51	1.0	7.3	82.4
(+)SMBJ54A(CA)	NE	NE	60.0	66.3	1.0	54	1.0	6.9	87.1
(+)SMBJ58A(CA)	NG	NG	64.4	71.2	1.0	58	1.0	6.4	93.6
(+)SMBJ60A(CA)	NK	NK	66.7	73.7	1.0	60	1.0	6.2	96.8
(+)SMBJ64A(CA)	NM	NM	71.1	78.6	1.0	64	1.0	5.8	103
(+)SMBJ70A(CA)	NP	NP	77.8	86.0	1.0	70	1.0	5.3	113
(+)SMBJ75A(CA)	NR	NR	83.3	92.1	1.0	75	1.0	5.0	121
(+)SMBJ78A(CA)	NT	NT	86.7	95.8	1.0	78	1.0	4.8	126
(+)SMBJ85A(CA)	NV	NV	94.4	104	1.0	85	1.0	4.4	137
(+)SMBJ90A(CA)	NX	NX	100	111	1.0	90	1.0	4.1	146
(+)SMBJ100A(CA)	NZ	NZ	111	123	1.0	100	1.0	3.7	162
(+)SMBJ110A(CA)	PE	PE	122	135	1.0	110	1.0	3.4	177
(+)SMBJ120A(CA)	PG	PG	133	147	1.0	120	1.0	3.1	193
(+)SMBJ130A(CA)	PK	PK	144	159	1.0	130	1.0	2.9	209
(+)SMBJ150A(CA)	PM	PM	167	185	1.0	150	1.0	2.5	243
(+)SMBJ160A(CA)	PP	PP	178	197	1.0	160	1.0	2.3	259
(+)SMBJ170A(CA)	PR	PR	189	209	1.0	170	1.0	2.2	275
SMBJ188A(CA)	PS	PS	209	231	1.0	188	1.0	2.0	382

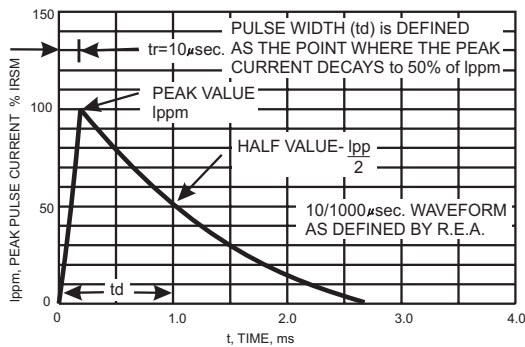
**FIG.1 - PULSE DERATING CURVE**



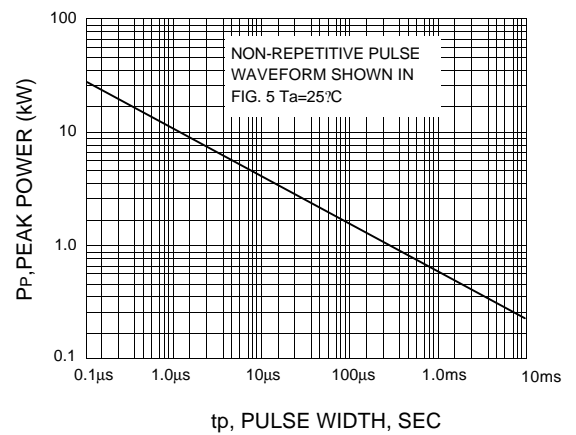
**FIG.2 - MAXIMUM NON-REPETITIVE PERK FORWARD SURGE CURRENT**



**FIG.3- CLAMPING POWER PULSE WAVEFORM**



**FIG.4 - PEAK PULSE POWER RATING CURVE**



**FIG.5- TYPICAL JUNCTION CAPACITANCE**

