

## SMBG Plastic-Encapsulate Diodes

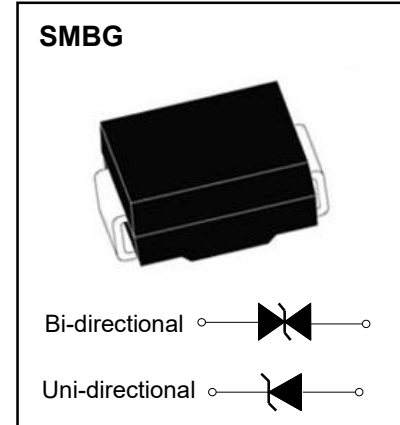
### CJSMBJ SERIES Transient Voltage Suppressor Diodes

#### Features

- $P_{PP}$  600W
- $V_{RWM}$  10V- 100V
- Glass passivated chip

#### Applications

- Clamping Voltage



#### Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Peak pulse power dissipation	$P_{PPM}$	W	with a 10/1000us waveform	600
Peak pulse current(note 1)	$I_{PPM}$	A	with a 10/1000us waveform	See Next Table
Power dissipation	$P_D$	W	On infinite heat sink at $T_L=50^\circ\text{C}$	5.0
Peak forward surge current	$I_{FSM}$	A	8.3 ms single half sine-wave uni-directional only (note 2)	100
Operating junction and storage temperature range	$T_J, T_{STG}$	$^\circ\text{C}$		-55 to +150

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

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage	$V_F$	V	at 50A for uni-directional only	3.5
Thermal resistance	$R_{\theta JL}$	$^\circ\text{C}/\text{W}$	junction to lead $T_L=50^\circ\text{C}$	20
	$R_{\theta JA}$	$^\circ\text{C}/\text{W}$	junction to ambient $T_A=25^\circ\text{C}$	100

#### Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above  $T_A=25^\circ\text{C}$  per Fig.2
- (2) 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minutes maximum

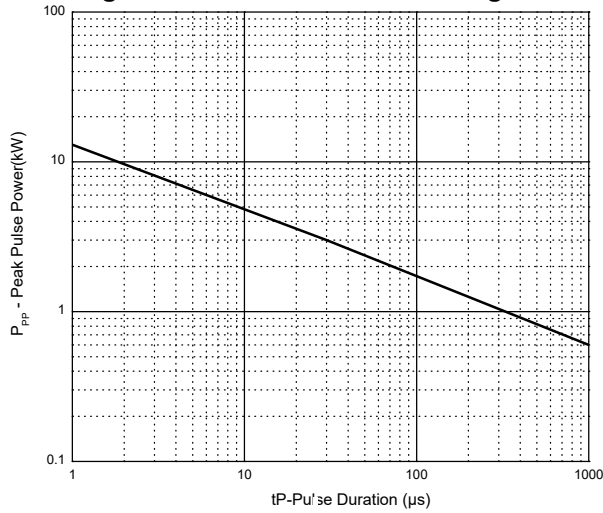
## Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Part Number		Device Marking Code		Breakdown Voltage VBR@IT		Test Current	Max Reverse Leakage @VRWM IR( $\mu\text{A}$ )		Reverse Standoff Voltage	Max Peak Pulse Current <sup>(1)</sup>	Max Clamping Voltage @Ipp
UNI	BI	UNI	BI	Min.(V)	Max.(V)	IT(mA)	UNI	BI	V <sub>RWM</sub> (V)	IPP(A)	V <sub>c</sub> (V)
CJSMBJ10A	CJSMBJ10CA	B10A XX <sup>(2)</sup>	B10CA XX	11.14	12.29	1	5	5	10	35.3	16.8
CJSMBJ11A	CJSMBJ11CA	B11A XX	B11CA XX	12.25	13.49	1	5	5	11	33	18
CJSMBJ12A	CJSMBJ12CA	B12A XX	B12CA XX	13.35	14.69	1	5	5	12	30.2	19.7
CJSMBJ13A	CJSMBJ13CA	B13A XX	B13CA XX	14.46	15.89	1	5	5	13	28	21.3
CJSMBJ14A	CJSMBJ14CA	B14A XX	B14CA XX	15.66	17.19	1	5	5	14	25.9	23
CJSMBJ15A	CJSMBJ15CA	B15A XX	B15CA XX	16.77	18.49	1	5	5	15	24.6	24.2
CJSMBJ16A	CJSMBJ16CA	B16A XX	B16CA XX	17.87	19.69	1	5	5	16	23.1	25.7
CJSMBJ17A	CJSMBJ17CA	B17A XX	B17CA XX	18.98	20.89	1	5	5	17	21.8	27.3
CJSMBJ18A	CJSMBJ18CA	B18A XX	B18CA XX	20.08	22.08	1	5	5	18	20.6	28.9
CJSMBJ20A	CJSMBJ20CA	B20A XX	B20CA XX	22.29	24.48	1	5	5	20	18.6	32.1
CJSMBJ22A	CJSMBJ22CA	B22A XX	B22CA XX	24.5	26.88	1	5	5	22	16.9	35.1
CJSMBJ24A	CJSMBJ24CA	B24A XX	B24CA XX	26.81	29.48	1	5	5	24	15.5	38.5
CJSMBJ26A	CJSMBJ26CA	B26A XX	B26CA XX	29.02	31.88	1	5	5	26	14.3	41.7
CJSMBJ28A	CJSMBJ28CA	B28A XX	B28CA XX	31.22	34.38	1	5	5	28	13.3	44.9
CJSMBJ30A	CJSMBJ30CA	B30A XX	B30CA XX	33.43	36.77	1	5	5	30	12.4	47.9
CJSMBJ33A	CJSMBJ33CA	B33A XX	B33CA XX	36.85	40.57	1	5	5	33	11.3	52.8
CJSMBJ36A	CJSMBJ36CA	B36A XX	B36CA XX	40.16	44.17	1	5	5	36	10.4	57.5
CJSMBJ40A	CJSMBJ40CA	B40A XX	B40CA XX	44.58	49.07	1	5	5	40	9.3	63.9
CJSMBJ43A	CJSMBJ43CA	B43A XX	B43CA XX	47.99	52.76	1	5	5	43	8.7	68.7
CJSMBJ45A	CJSMBJ45CA	B45A XX	B45CA XX	50.2	55.26	1	5	5	45	8.3	72
CJSMBJ48A	CJSMBJ48CA	B48A XX	B48CA XX	53.51	58.86	1	5	5	48	7.8	76.6
CJSMBJ51A	CJSMBJ51CA	B51A XX	B51CA XX	56.93	62.66	1	5	5	51	7.3	81.6
CJSMBJ54A	CJSMBJ54CA	B54A XX	B54CA XX	60.24	66.25	1	5	5	54	6.9	86.2
CJSMBJ58A	CJSMBJ58CA	B58A XX	B58CA XX	64.66	71.15	1	5	5	58	6.5	92.7
CJSMBJ60A	CJSMBJ60CA	B60A XX	B60CA XX	66.97	73.65	1	5	5	60	6.2	95.8
CJSMBJ64A	CJSMBJ64CA	B64A XX	B64CA XX	71.39	78.54	1	5	5	64	5.9	102
CJSMBJ70A	CJSMBJ70CA	B70A XX	B70CA XX	78.11	85.94	1	5	5	70	5.3	111.9
CJSMBJ75A	CJSMBJ75CA	B75A XX	B75CA XX	83.63	92.04	1	5	5	75	5	119.8
CJSMBJ78A	CJSMBJ78CA	B78A XX	B78CA XX	87.05	95.73	1	5	5	78	4.8	124.7
CJSMBJ85A	CJSMBJ85CA	B85A XX	B85CA XX	94.78	103.93	1	5	5	85	4.4	135.6
CJSMBJ90A	CJSMBJ90CA	B90A XX	B90CA XX	100.4	110.92	1	5	5	90	4.1	144.5
CJSMBJ100A	CJSMBJ100CA	B100A XX	B100CA XX	111.45	122.91	1	5	5	100	3.7	160.4

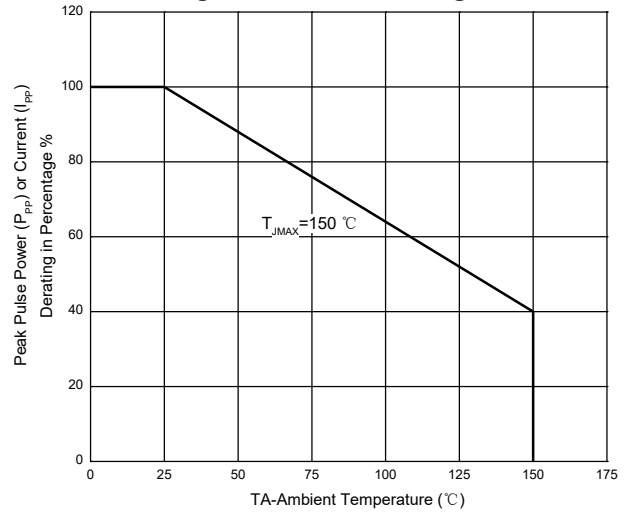
### Notes:

- (1) Waveform of CJSMBJ10A -CJSMBJ100CA are defined as per fig.3
- (2) XX=Code

**Figure 1. Peak Pulse Power Rating Curve**



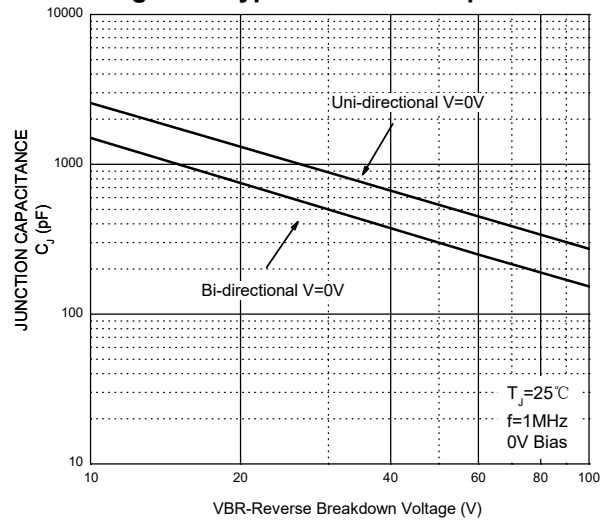
**Figure 2. Pulse Derating Curve**



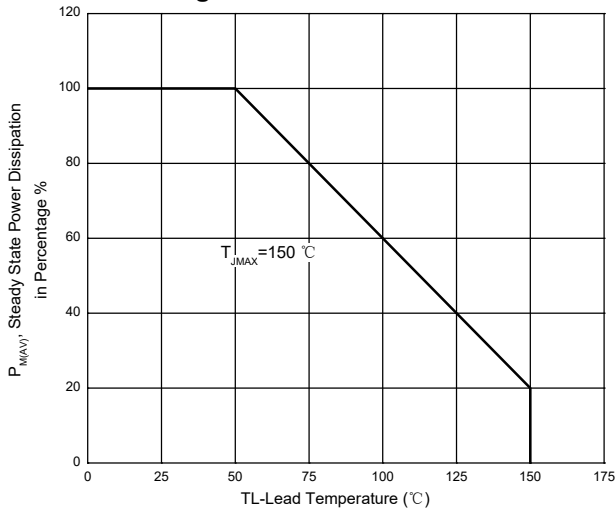
**Figure 3. Pulse Waveform**



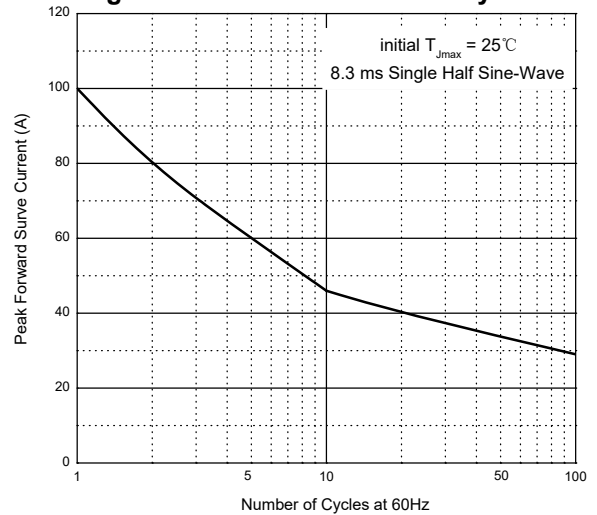
**Figure 4. Typical Junction Capacitance**



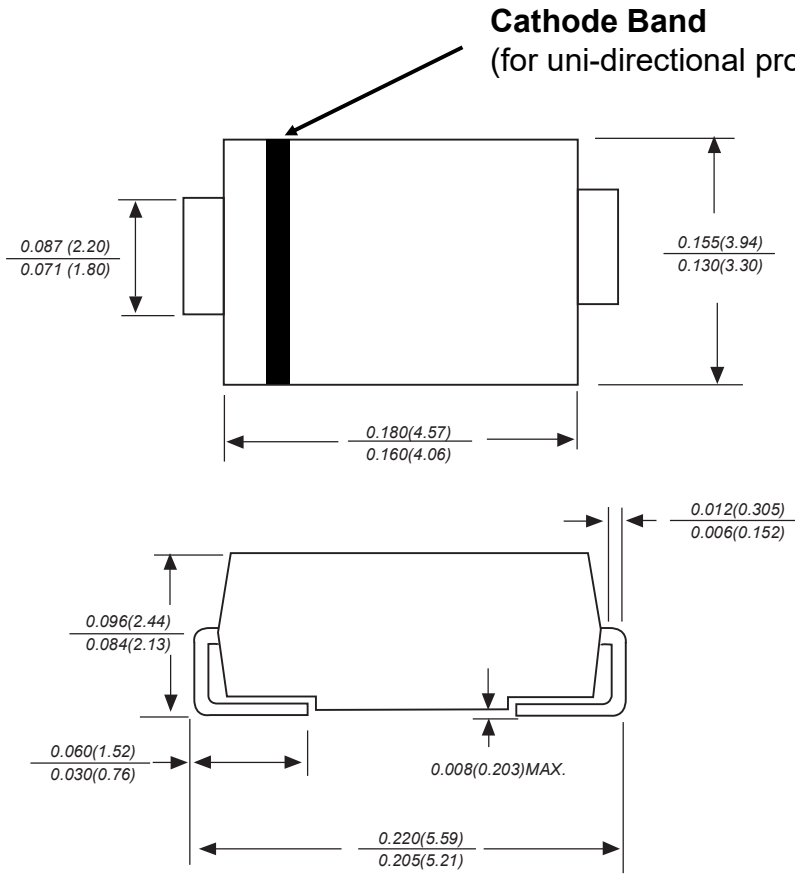
**Figure 5. Steady State Power Dissipation Derating Curve**



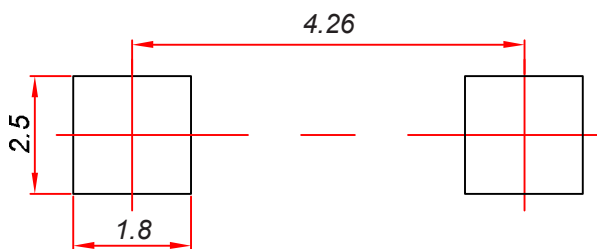
**Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only**



## SMBG Package Outline Dimensions



## SMBG Suggested Pad Layout



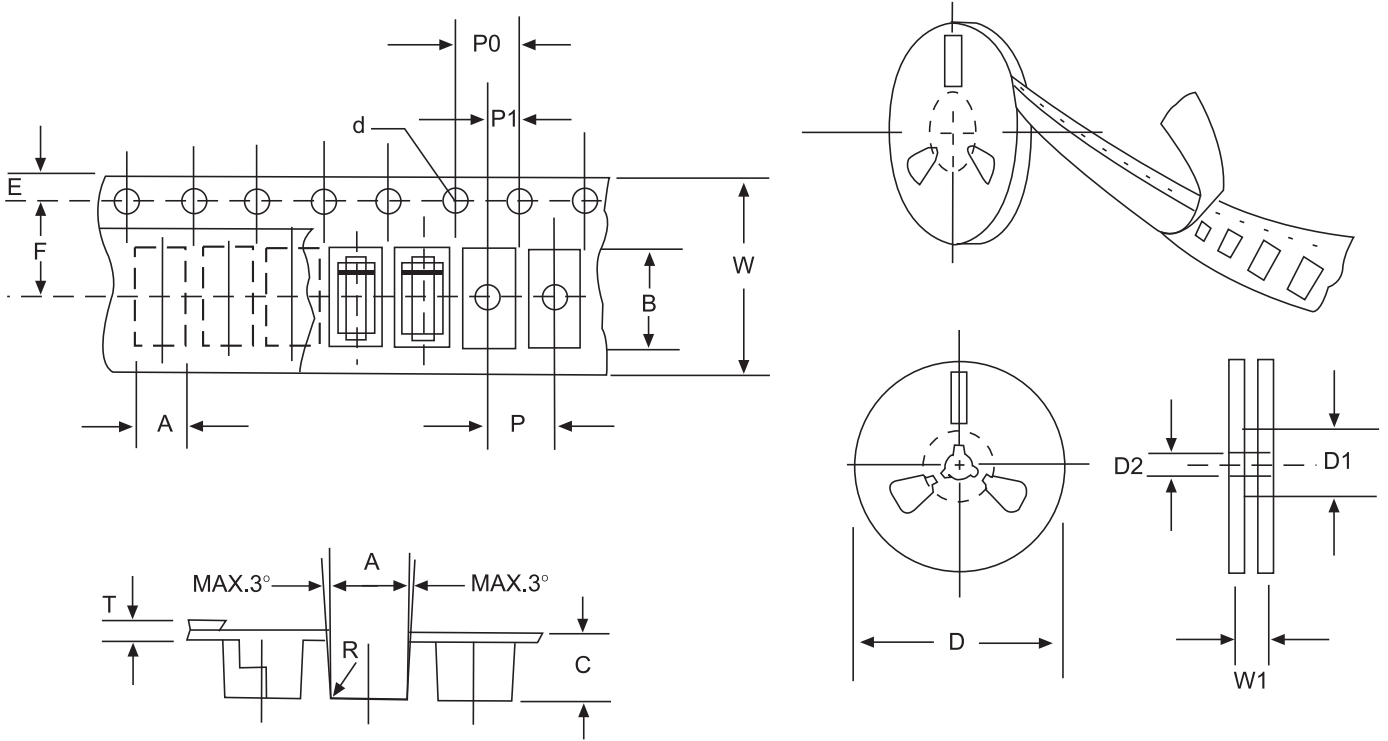
**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$ mm.
3. The pad layout is for reference purposes only.

**NOTICE**

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## Reel Taping Specifications For Surface Mount Devices- SMBG



**FIG: CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING**

ITEM	SYMBOL	SMBG mm(inch)
Carrier width	A	4.09±0.1(0.161±0.004)
Carrier length	B	5.82±0.1(0.229±0.004)
Carrier depth	C	2.50±0.1(0.100±0.004)
Sprocket hole	d	1.55±0.05(0.061±0.002)
Reel outside diameter	D	330±2.0(13±0.079)
Reel inner diameter	D1	75±1.0(2.95±0.039)
Feed hole diameter	D2	13±0.5(0.512±0.020)
Sprocket hole position	E	1.75±0.1(0.069±0.004)
Punch hole position	F	5.65±0.05(0.222±0.002)
Punch hole pitch	P	8.0±0.1(0.315±0.004)
Sprocket hole pitch	P0	4.0±0.1(0.157±0.004)
Embossment center	P1	2.0±0.1(0.079±0.004)
Total tape thickness	T	0.32±0.1(0.013±0.004)
Tape width	W	12.0±0.2(0.472±0.008)
Reel width	W1	16.8±2.0(0.661±0.079)

NOTE: Devices are packed in accordance with EIA standard RS-481-A and specification given above.

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