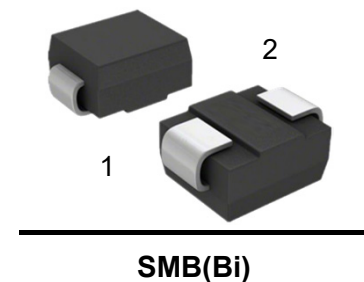
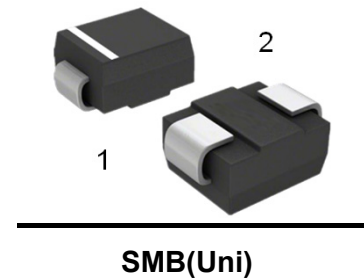


Description

The 3.0SMBJxxA Series are designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

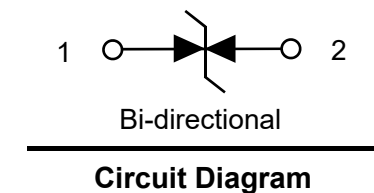
Feature

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- 3000W peak pulse power capability with a 10/1000us waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- Component in accordance to RoHS
- Solder dip 265°C max. 10s, per JESD 22-B106



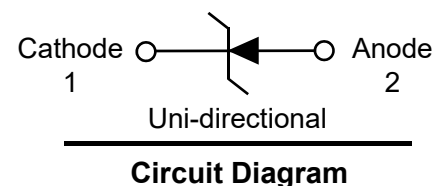
Mechanical Characteristics

- Case: DO-214AA(SMB)
- Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, Halogen-free
- Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
- Polarity: Cathode line denotes the cathode end



Applications

- Power lines
- I/O Interface.
- Automotive and Telecommunication Industrial Electronics



Absolute maximum rating@25°C

Rating		Symbol	Value	Units
Peak Pulse Power Dissipation with 10/1000 μ s Waveform ¹⁾²⁾		P_{PPM}	3000	W
Power Dissipation on Infinite Heatsink @ $T_L=75^{\circ}\text{C}^{2)}$		P_D	5.0	W
Peak Pulse Current with 10/1000 μ s Waveform ¹⁾		I_{PPM}	See next table	A
Peak Forward Surge Current , 8.3 ms single half sine-wave ³⁾		I_{FSM}	100(Uni)	A
Maximum Instantaneous Forward Voltage @25A ⁴⁾		V_F	3.5/5.0(Uni)	V
Electrostatic Discharge	IEC61000-4-2 Air Discharge	ESD	± 30	kV
	IEC61000-4-2 Contact Discharge		± 30	
Thermal Resistance Junction-to-Lead		$R_{\theta JL}$	20	$^{\circ}\text{C/W}$
Thermal Resistance Junction-to-Ambient		$R_{\theta JA}$	60	$^{\circ}\text{C/W}$
Operating Junction Temperature and Storage Temperature Range		T_J, T_{STG}	-55~+150	$^{\circ}\text{C}$

Transient Voltage Suppressor

3.0SMBJxxA Series

Electrical characteristics per line@25°C(unless otherwise specified)

Part Number		Marking		V_{RMW}	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	I_{PP}	$I_R@V_{RWM}$
Uni	Bi	Uni	Bi	V	min(V)	max(V)	mA	V	A	μA
3.0SMBJ11AA	3.0SMBJ11CAA	3.0PGDZ	3.0PBDZ	11	12.2	13.5	1	18.2	164.83	200
3.0SMBJ12AA	3.0SMBJ12CAA	3.0PGEE	3.0PBEE	12	13.3	14.7	1	19.9	150.75	200
3.0SMBJ13AA	3.0SMBJ13CAA	3.0PGEG	3.0PBEG	13	14.4	15.9	1	21.5	139.53	100
3.0SMBJ14AA	3.0SMBJ14CAA	3.0PGEK	3.0PBK	14	15.6	17.2	1	23.2	129.31	50
3.0SMBJ15AA	3.0SMBJ15CAA	3.0PGEM	3.0PBEM	15	16.7	18.5	1	24.4	122.95	20
3.0SMBJ16AA	3.0SMBJ16CAA	3.0PGEP	3.0PBEP	16	17.8	19.7	1	26	115.38	10
3.0SMBJ17AA	3.0SMBJ17CAA	3.0PGER	3.0PBER	17	18.9	20.9	1	27.6	108.69	1
3.0SMBJ18AA	3.0SMBJ18CAA	3.0PGET	3.0PBET	18	20	22.1	1	29.2	102.73	1
3.0SMBJ20AA	3.0SMBJ20CAA	3.0PGEV	3.0PBEV	20	22.2	24.5	1	32.4	92.59	1
3.0SMBJ22AA	3.0SMBJ22CAA	3.0PGEX	3.0PBEX	22	24.4	26.9	1	35.5	84.5	1
3.0SMBJ24AA	3.0SMBJ24CAA	3.0PGEZ	3.0PBEZ	24	26.7	29.5	1	38.9	77.12	1
3.0SMBJ26AA	3.0SMBJ26CAA	3.0PGFE	3.0PBF	26	28.9	31.9	1	42.1	71.25	1
3.0SMBJ28AA	3.0SMBJ28CAA	3.0PGFG	3.0PBF	28	31.1	34.4	1	45.4	66.07	1
3.0SMBJ30AA	3.0SMBJ30CAA	3.0PGFK	3.0PBF	30	33.3	36.8	1	48.4	61.98	1
3.0SMBJ33AA	3.0SMBJ33CAA	3.0PGFM	3.0PBF	33	36.7	40.6	1	53.3	56.28	1
3.0SMBJ36AA	3.0SMBJ36CAA	3.0PGFP	3.0PBF	36	40	44.2	1	58.1	51.63	1
3.0SMBJ40AA	3.0SMBJ40CAA	3.0PGFR	3.0PBF	40	44.4	49.1	1	64.5	46.51	1
3.0SMBJ43AA	3.0SMBJ43CAA	3.0PGFT	3.0PBF	43	47.8	52.8	1	69.4	43.22	1
3.0SMBJ45AA	3.0SMBJ45CAA	3.0PGFV	3.0PBF	45	50	55.3	1	72.7	41.26	1
3.0SMBJ48AA	3.0SMBJ48CAA	3.0PGFX	3.0PBF	48	53.3	58.9	1	77.4	38.75	1
3.0SMBJ51AA	3.0SMBJ51CAA	3.0PGFZ	3.0PBF	51	56.7	62.7	1	82.4	36.4	1
3.0SMBJ54AA	3.0SMBJ54CAA	3.0PGGE	3.0PBGE	54	60	66.3	1	87.1	34.44	1
3.0SMBJ58AA	3.0SMBJ58CAA	3.0PGGG	3.0PBGG	58	64.4	71.2	1	93.6	32.05	1
3.0SMBJ60AA	3.0SMBJ60CAA	3.0PGGK	3.0PBGK	60	66.7	73.7	1	96.8	30.99	1
3.0SMBJ64AA	3.0SMBJ64CAA	3.0PGGM	3.0PBGM	64	71.1	78.6	1	103	29.12	1
3.0SMBJ70AA	3.0SMBJ70CAA	3.0PGGP	3.0PBG	70	77.8	86	1	113	26.54	1
3.0SMBJ75AA	3.0SMBJ75CAA	3.0PGGR	3.0PBGR	75	83.3	92.1	1	121	24.79	1
3.0SMBJ78AA	3.0SMBJ78CAA	3.0PGGT	3.0PBG	78	86.7	95.8	1	126	23.8	1
3.0SMBJ85AA	3.0SMBJ85CAA	3.0PGGV	3.0PBG	85	94.4	104	1	137	21.89	1
3.0SMBJ90AA	3.0SMBJ90CAA	3.0PGGX	3.0PBG	90	100	111	1	146	20.54	1
3.0SMBJ100AA	3.0SMBJ100CAA	3.0PGGZ	3.0PBG	100	111	123	1	162	18.51	1
3.0SMBJ110AA	3.0SMBJ110CAA	3.0PGHE	3.0PBHE	110	122	135	1	177	16.94	1
3.0SMBJ120AA	3.0SMBJ120CAA	3.0PGHG	3.0PBHG	120	133	147	1	193	15.54	1
3.0SMBJ130AA	3.0SMBJ130CAA	3.0PGHK	3.0PBHK	130	144	159	1	209	14.35	1
3.0SMBJ150AA	3.0SMBJ150CAA	3.0PGHM	3.0PBHM	150	167	185	1	243	12.34	1
3.0SMBJ160AA	3.0SMBJ160CAA	3.0PGHP	3.0PBHP	160	178	197	1	259	11.58	1
3.0SMBJ170AA	3.0SMBJ170CAA	3.0PGHR	3.0PBHR	170	189	209	1	275	10.9	1

Transient Voltage Suppressor

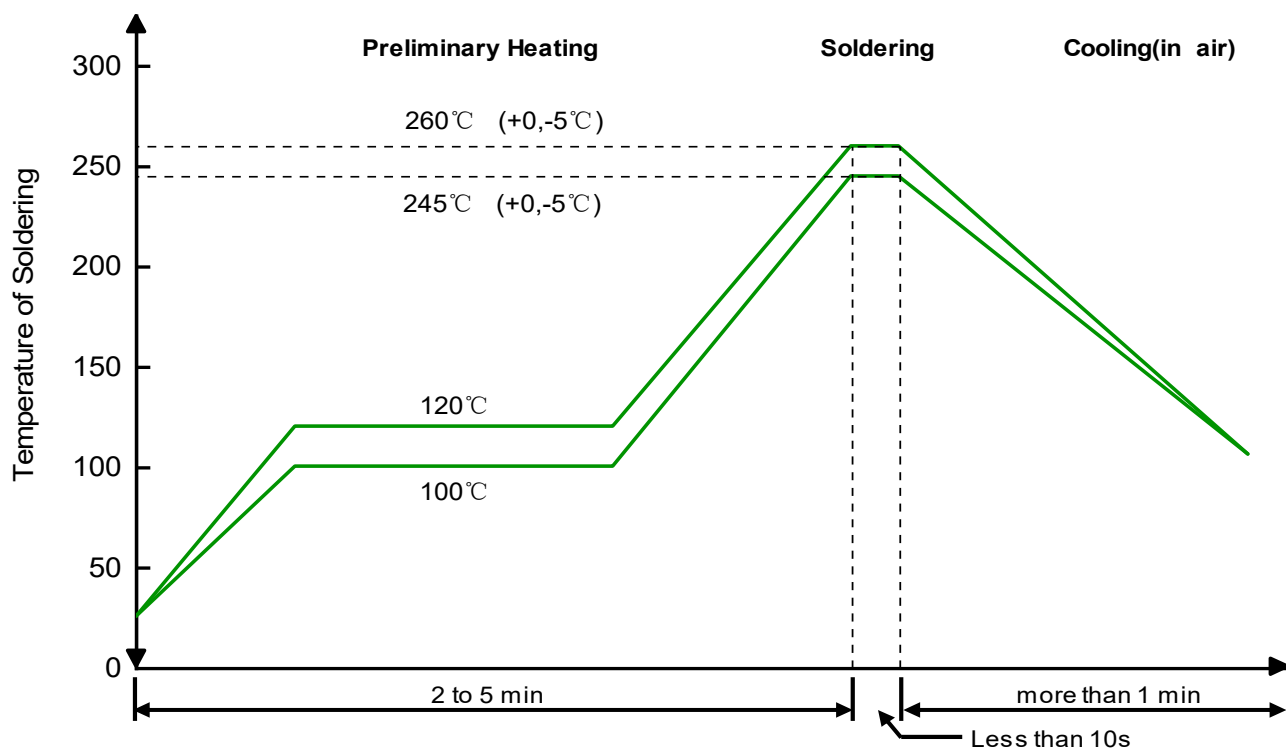
3.0SMBJxxA Series

Part Number		Marking		V_{RMW}	$V_{BR}@I_T$		I_T	$V_C@I_{PP}$	I_{PP}	$I_R@V_{RWM}$
Uni	Bi	Uni	Bi	V	min(V)	max(V)	mA	V	A	μA
3.0SMBJ180AA	3.0SMBJ180CAA	3.0PGHT	3.0PBHT	180	201	222	1	292	10.27	1
3.0SMBJ200AA	3.0SMBJ200CAA	3.0PGHV	3.0PBHV	200	224	247	1	324	9.25	1
3.0SMBJ220AA	3.0SMBJ220CAA	3.0PGHX	3.0PBHX	220	246	272	1	356	8.42	1

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^{\circ}C$ per Fig.2.
2. Mounted on $0.3 \times 0.3"$ (8.0×8.0 mm) copper pads to each terminal
3. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum
4. $V_F=3.5V$ Max for devices of $V_{BR} \leq 200V$, and $V_F=5.0V$ Max for devices of $V_{BR} > 200V$
5. Pulse Test: $t_p \leq 50ms$
6. Surge current waveform per Fig. 3 and derated per Fig.2

Solder Reflow Recommendation



Remark: Pb free for 260°C; Pb for 245°C.

Typical Characteristics

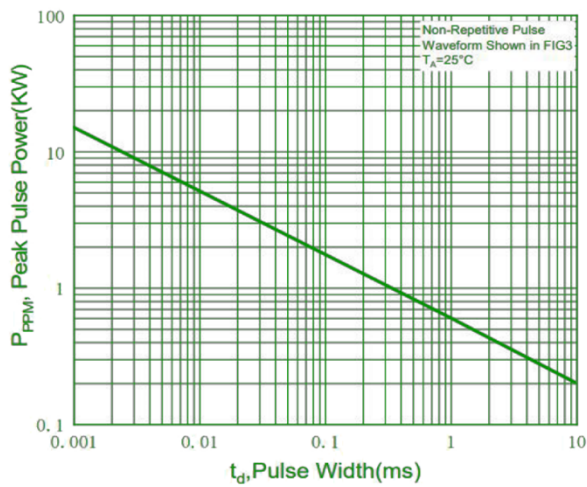


Fig. 1 - Power Derating Curve

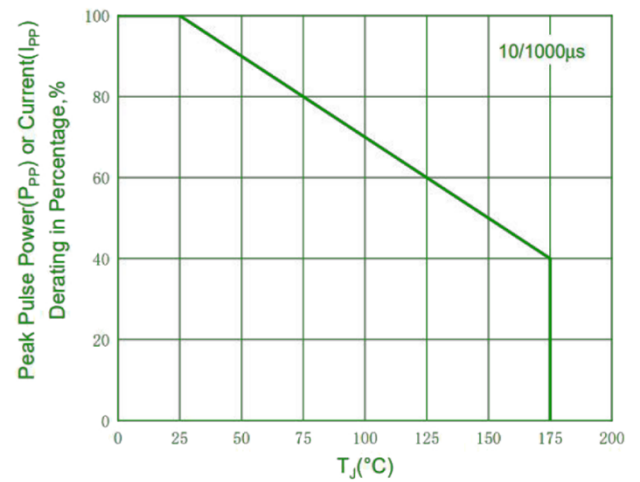


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

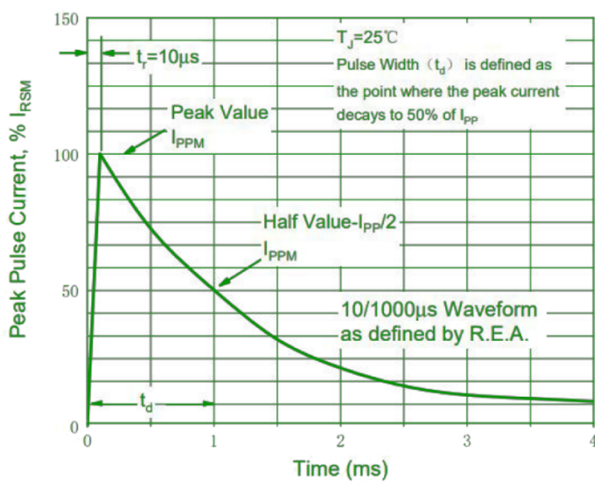


Fig. 3 - Pulse Waveform

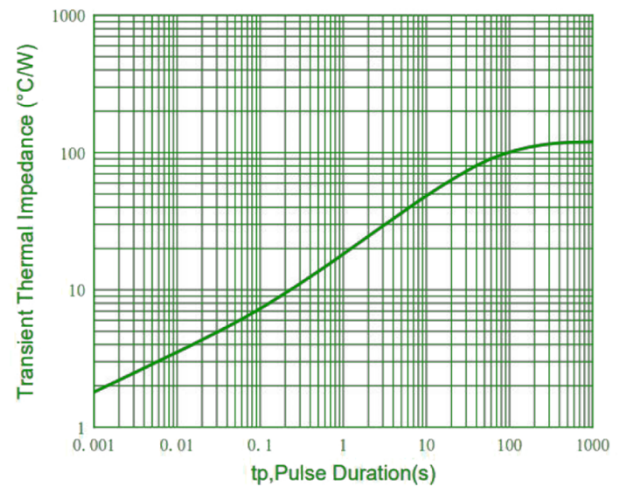


Fig. 4 - Typical Transient Thermal Impedance

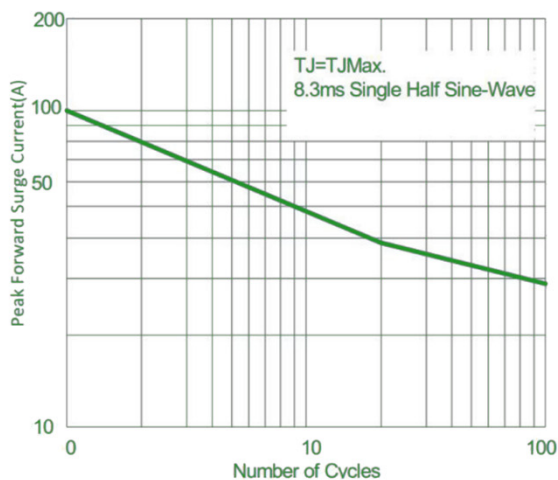


Fig. 5 - Maximum Non-Repetitive Surge Current

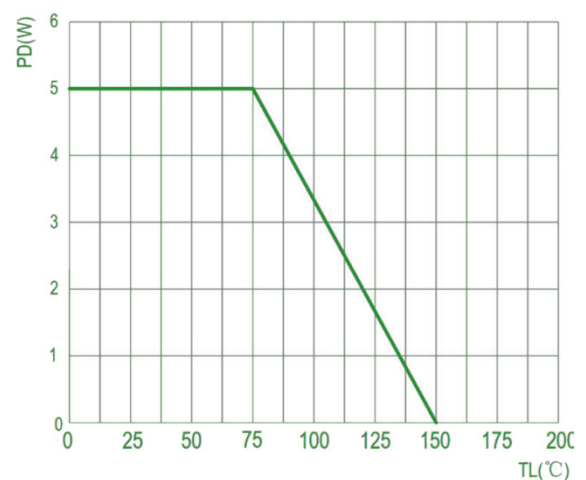


Fig. 6 - Steady State Power Dissipation

3.0SMBJxxA Series

Technical drawing of a mechanical part, showing a top view and a side view. The top view is a rectangle with a width of 12.00 ± 0.30 and a length of 8.00 ± 0.10 . It features six circular holes with a diameter of $\varnothing 1.50 \pm 0.10$. The holes are positioned along the top edge, with a center-to-center distance of 4.00 ± 0.10 between the first two and 2.00 ± 0.05 between the last two. The side view shows a profile with a total height of 5.50 ± 0.05 and a top edge radius of 1.75 ± 0.10 . A pin is indicated at the top left corner. The drawing includes a 'USER DIRECTION OF FEED' arrow pointing right.

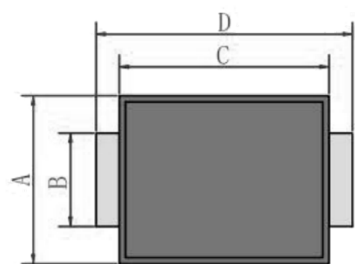
Ordering information

Package	Reel	Shipping
SMB	13"	3000 / Tape & Reel

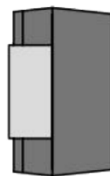


Note: Detailed Marking See table above

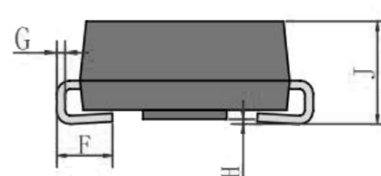
Product Dimension (SMB)



Top View

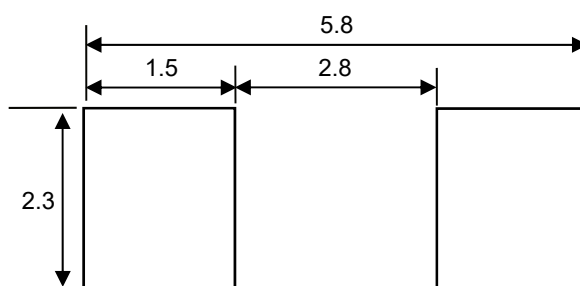


Side View



Side View

Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	3.30	3.90	0.130	0.154
B	1.85	2.15	0.073	0.085
C	4.10	4.75	0.161	0.187
D	5.10	5.60	0.201	0.220
F	0.76	1.41	0.030	0.056
G	0.15	0.31	0.006	0.012
H	0.05	0.20	0.002	0.008
J	2.10	2.30	0.083	0.091



Unit: mm

Suggested PCB Layout

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