

**Working Voltage: 7.0 V**

**Peak Pulse Power: 600 W**

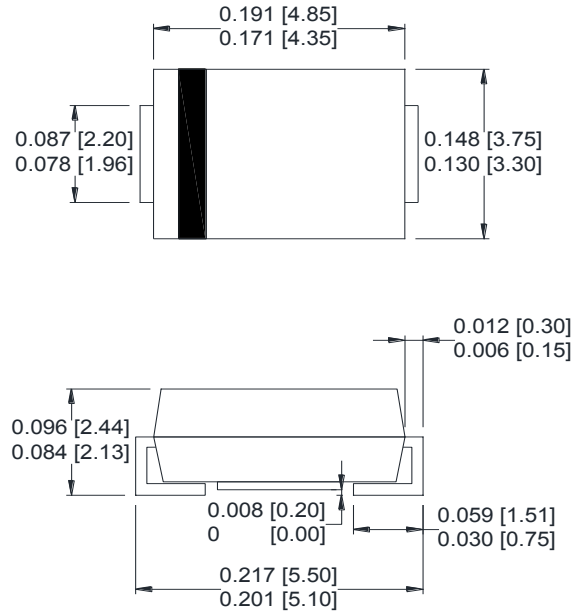
**SMB/ DO-214AA**

**Features**

- Glass passivated chip
- 600 W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle):0.01 %
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

**Mechanical Data**

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any



Dimensions: inch[mm]

**Maximum Ratings( $T_A=25^\circ\text{C}$  unless otherwise noted)**

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	$P_{PP}$	600	W
Peak pulse current with a 10/1000 $\mu$ s waveform <sup>(1)</sup>	$I_{PP}$	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75^\circ\text{C}$	$P_D$	5.0	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only <sup>(2)</sup>	$I_{FSM}$	100	A
Maximum instantaneous forward voltage at 50 A for unidirectional only <sup>(3)</sup>	$V_F$	3.5/5.0	V
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to +150	$^\circ\text{C}$

**Note:**

(1)Non-repetitive current pulse per Fig.5 and derated above  $T_A = 25^\circ\text{C}$  per Fig.1

(2)Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

(3) $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 200\text{V}$  and  $V_F < 5.0\text{V}$  for devices of  $V_{BR} > 201\text{V}$

**Ratings and Characteristics Curves ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)**

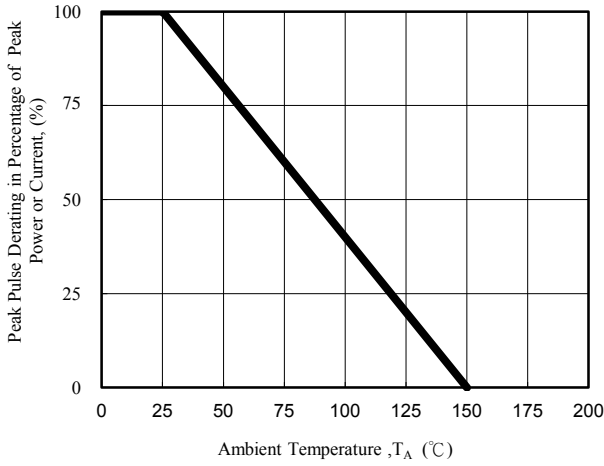


Fig. 1 - Pulse Derating Curve

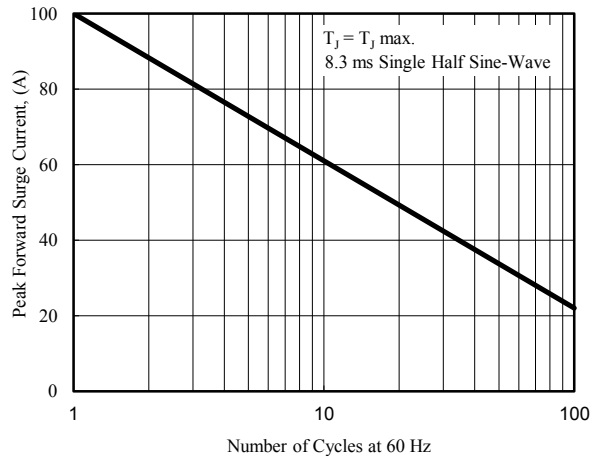


Fig. 2 - Maximum Non-Repetitive Surge Current

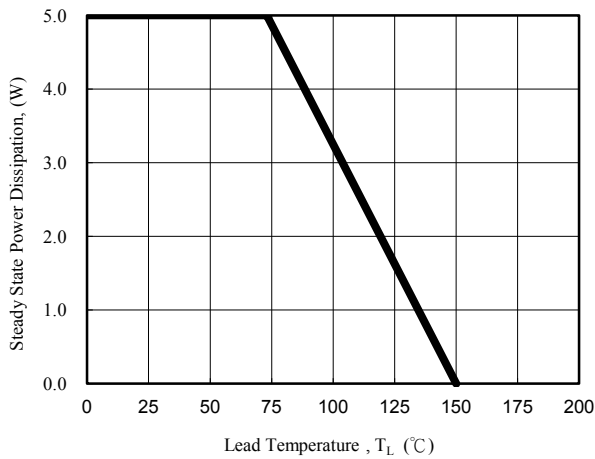


Fig. 3 - Steady State Power Derating Curve

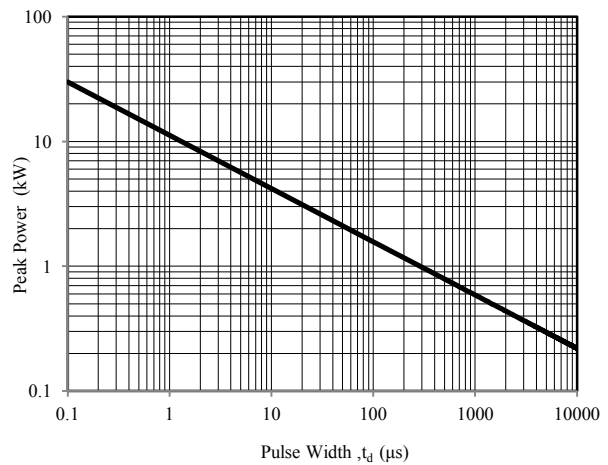


Fig. 4 - Peak Pulse Power Rating Curve

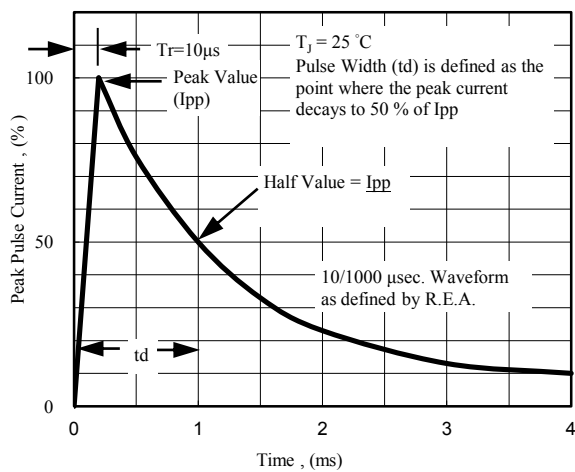


Fig. 5 - Pulse Waveform

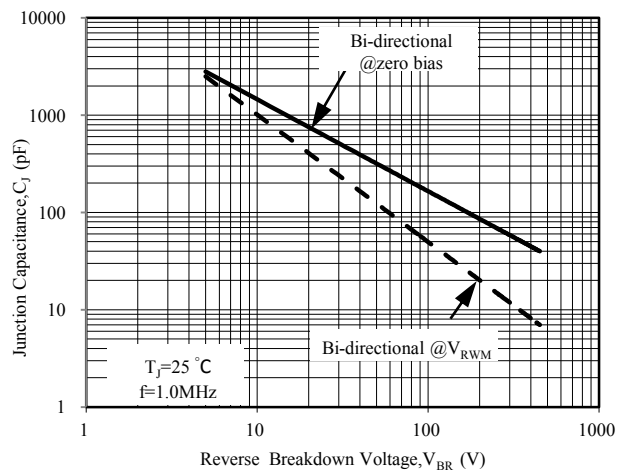


Fig. 6 - Typical Junction Capacitance

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

Part Number (Bi)	Device Marking Code	Breakdown Voltage $V_{BR}$ @ $I_T$			Maximum Reverse Leakage $I_R$ @ $V_{RWM}$ ( $\mu\text{A}$ )	Working Peak Reverse Voltage $V_{RWM}$ (V)	Maximum Reverse Surge Current $I_{PP}$ (A)	Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V)
		Min (V)	Max (V)	$I_T$ (mA)				
SMBJ5.0CA	AE	6.40	7.00	10	800	5.0	65.22	9.2
SMBJ6.0CA	AG	6.67	7.37	10	800	6.0	58.25	10.3
SMBJ6.5CA	AK	7.22	7.98	10	500	6.5	53.57	11.2
SMBJ7.0CA	AM	7.78	8.60	10	200	7.0	50.00	12.0
SMBJ7.5CA	AP	8.33	9.21	1	100	7.5	46.51	12.9
SMBJ8.0CA	AR	8.89	9.83	1	50	8.0	44.12	13.6
SMBJ8.5CA	AT	9.44	10.40	1	10	8.5	41.67	14.4
SMBJ9.0CA	AV	10.00	11.10	1	5	9.0	38.96	15.4
SMBJ10CA	AX	11.10	12.30	1	5	10.0	35.29	17.0
SMBJ11CA	AZ	12.20	13.50	1	1	11.0	32.97	18.2
SMBJ12CA	BE	13.30	14.70	1	1	12.0	30.15	19.9
SMBJ13CA	BG	14.40	15.90	1	1	13.0	27.91	21.5
SMBJ14CA	BK	15.60	17.20	1	1	14.0	25.86	23.2
SMBJ15CA	BM	16.70	18.50	1	1	15.0	24.59	24.4
SMBJ16CA	BP	17.80	19.70	1	1	16.0	23.08	26.0
SMBJ17CA	BR	18.90	20.90	1	1	17.0	21.74	27.6
SMBJ18CA	BT	20.00	22.10	1	1	18.0	20.55	29.2
SMBJ19CA	BB	21.10	23.30	1	1	19.0	19.49	30.8
SMBJ20CA	BV	22.20	24.50	1	1	20.0	18.52	32.4
SMBJ22CA	BX	24.40	26.90	1	1	22.0	16.90	35.5
SMBJ24CA	BZ	26.70	29.50	1	1	24.0	15.42	38.9
SMBJ26CA	CE	28.90	31.90	1	1	26.0	14.25	42.1
SMBJ28CA	CG	31.10	34.40	1	1	28.0	13.22	45.4
SMBJ30CA	CK	33.30	36.80	1	1	30.0	12.40	48.4
SMBJ33CA	CM	36.70	40.60	1	1	33.0	11.26	53.3
SMBJ36CA	CP	40.00	44.20	1	1	36.0	10.33	58.1

**Note:**

1. Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device
2. Add suffix 'CA' after part number to specify Bi-directional devices
3. For Bi-Directional devices having  $V_R$  of 10 volts and under, the  $I_R$  limit is double

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

Part Number (Bi)	Device Marking Code	Breakdown Voltage $V_{BR}$ @ $I_T$			Maximum Reverse Leakage $I_R$ @ $V_{RWM}$ ( $\mu\text{A}$ )	Working Peak Reverse Voltage $V_{RWM}$ (V)	Maximum Reverse Surge Current $I_{PP}$ (A)	Maximum Clamping Voltage $V_C$ @ $I_{PP}$ (V)
	Bi	Min (V)	Max (V)	$I_T$ (mA)				
SMBJ40CA	CR	44.40	49.10	1	1	40.0	9.30	64.5
SMBJ43CA	CT	47.80	52.80	1	1	43.0	8.65	69.4
SMBJ45CA	CV	50.00	55.30	1	1	45.0	8.25	72.7
SMBJ48CA	CX	53.30	58.90	1	1	48.0	7.75	77.4
SMBJ51CA	CZ	56.70	62.70	1	1	51.0	7.28	82.4
SMBJ54CA	DE	60.00	66.30	1	1	54.0	6.89	87.1
SMBJ58CA	DG	64.40	71.20	1	1	58.0	6.41	93.6
SMBJ60CA	DK	66.70	73.70	1	1	60.0	6.20	96.8
SMBJ64CA	DM	71.10	78.60	1	1	64.0	5.83	103.0
SMBJ70CA	DP	77.80	86.00	1	1	70.0	5.31	113.0
SMBJ75CA	DR	83.30	92.10	1	1	75.0	4.96	121.0
SMBJ78CA	DT	86.70	95.80	1	1	78.0	4.76	126.0
SMBJ80CA	DB	88.80	97.60	1	1	80.0	4.63	129.6
SMBJ85CA	DV	94.40	104.00	1	1	85.0	4.38	137.0
SMBJ90CA	DX	100.00	111.00	1	1	90.0	4.11	146.0
SMBJ100CA	DZ	111.00	123.00	1	1	100.0	3.70	162.0
SMBJ110CA	EE	122.00	135.00	1	1	110.0	3.39	177.0
SMBJ120CA	EG	133.00	147.00	1	1	120.0	3.11	193.0
SMBJ130CA	EK	144.00	159.00	1	1	130.0	2.87	209.0
SMBJ140CA	EB	155.00	171.00	1	1	140.0	2.65	226.8
SMBJ150CA	EM	167.00	185.00	1	1	150.0	2.47	243.0
SMBJ160CA	EP	178.00	197.00	1	1	160.0	2.32	259.0
SMBJ170CA	ER	189.00	209.00	1	1	170.0	2.18	275.0
SMBJ180CA	ET	200.00	220.00	1	1	180.0	2.06	291.6
SMBJ190CA	EV	211.00	232.00	1	1	190.0	1.95	307.8
SMBJ200CA	EW	224.00	247.00	1	1	200.0	1.85	324.0
SMBJ220CA	EX	246.00	272.00	1	1	220.0	1.69	356.0
SMBJ250CA	EZ	279.00	309.00	1	1	250.0	1.48	405.0
SMBJ300CA	FE	335.00	371.00	1	1	300.0	1.23	486.0
SMBJ350CA	FG	391.00	432.00	1	1	350.0	1.06	567.0
SMBJ400CA	FK	447.00	494.00	1	1	400.0	0.93	648.0
SMBJ440CA	FM	492.00	543.00	1	1	440.0	0.84	713.0

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