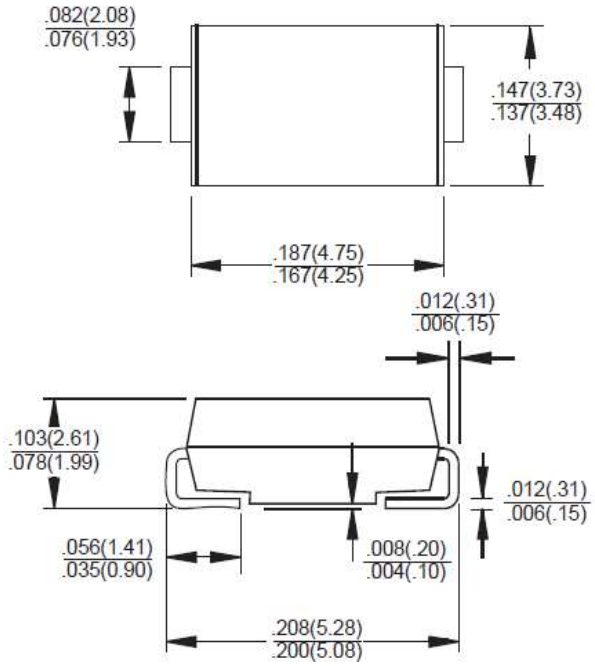
Transient Voltage Supperssor
Breakdown Voltage : 5.0~440V, Peak Pulse Power : 600W

Features
- Plastics package has underwriters laboratory flammability classification 94V-0
- Low profile package with built-in strain relief for surface mounted application
- Glass passivated junction
- Low incremental surge resistance, excellent clamping capability
- 600W peak pulse power capability with a 10/1000us
- wave-form, repetition rate (duty cycle) : 0.01%
- Very fast response time
- High temperature soldering guaranteed : 250℃/10 seconds at terminals

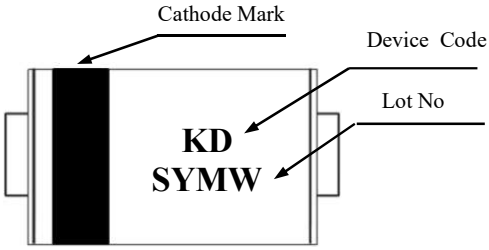
Mechanical Data
- Case : JEDEC DO-214AA(SMB) molded plastic over passivated junction
- Terminals : solder plated, solderable per MIL-STD-750, method 2026
- Polarity : for uni-directional types the color band denotes the cathode, which is positive with respect to the anode under nomal TVS operation
- Weight : approx. 0.093grams

SMB/DO-214AA



Dimensions in inches and (millimeters)

Marking



Devices for Bi-directional Applications
For bi-directional devices, use suffix C or CA (e.g. SMBJ10C, SMBJ10CA). Electrical characteristics apply in both directions

Maximum Ratings (Ta=25℃ unless otherwise noted)

Parameter	Symbol	Rated Value	Unit	Remark
Peak Power Dissipation with a 10/1000us Waveform (Fig.1)	P_{PPM}	Minimum 600	W	Note 1, 2
Peak Pulse Current with a 10/1000us Waveform	I_{PPM}	See next table	A	Note 1
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Uni-directional Only	I_{FSM}	100	A	Note 2
Typical Thermal Resistance	Rth(j-a)	100	℃/W	Note 3
	Rth(j-l)	20	℃/W	Note 3
Operating Junction and Storage Temperature Range	T_J ,T_{STG}	-55 to +150	℃	

Note 1. Non-repetive current pulse, per Fig. 3 and derated above Ta=25℃, per Fig.2.

Note 2. Mounted on 0.2" × 0.2" (5.0mm × 5.0mm) copper pade to each terminal.

Note 3. Mounted on minimum recommended pad layout

Electrical Characteristics

Rating at 25℃ ambient temperature unless otherwise specified. V_F=3.5V at I_F=50A (uni-directional only)

Device Type	Device Marking Code		Breakdown Voltage $V_{(BR)}$ at I_T (1) (V)		Test Current I_T(mA)	Stand-off Voltage V_{WM}(V)	Maximum Reverse Leakage at V_{WM} I_D(uA)(3)	Maximum Peak Pulse Surge Current I_{PPM}(A)(2)	Maximum Clamping Voltage at I_{PPM} V_C(V)
	Uni	Bi	Min	Max					
SMBJ5.0	KD	KD	6.40	7.82	10	5.0	800	62.5	9.6
SMBJ5.0A(5)	KE	AE	6.40	7.07	10	5.0	800	65.2	9.2
SMBJ6.0	KF	KF	6.67	8.15	10	6.0	800	52.6	11.4
SMBJ6.0A	KG	KG	6.67	7.37	10	6.0	800	58.3	10.3
SMBJ6.5	KH	AH	7.22	8.82	10	6.5	500	48.8	12.3
SMBJ6.5A	KK	AK	7.22	7.98	10	6.5	500	53.6	11.2
SMBJ7.0	KL	KL	7.78	9.51	10	7.0	200	45.1	13.3
SMBJ7.0A	KM	KM	7.78	8.60	10	7.0	200	33.3	12.0
SMBJ7.5	KN	AN	8.33	10.2	1.0	7.5	100	42.0	14.3
SMBJ7.5A	KP	AP	8.33	9.21	1.0	7.5	100	46.5	12.9
SMBJ8.0	KQ	AQ	8.89	10.9	1.0	8.0	50	40.0	15.0
SMBJ8.0A	KR	AR	8.89	9.83	1.0	8.0	50	44.1	13.6
SMBJ8.5	KS	AS	9.44	11.5	1.0	8.5	20	37.7	15.9
SMBJ8.5A	KT	AT	9.44	10.4	1.0	8.5	20	41.7	14.4
SMBJ9.0	KU	AU	10.0	12.2	1.0	9.0	10	35.5	16.9
SMBJ9.0A	KV	AV	10.0	11.1	1.0	9.0	10	39.0	15.4
SMBJ10	KW	AW	11.1	13.6	1.0	10	5.0	31.9	18.8
SMBJ10A	KX	AX	11.1	12.3	1.0	10	5.0	35.3	17.0
SMBJ11	KY	KY	12.2	14.9	1.0	11	5.0	29.9	20.1
SMBJ11A	KZ	KZ	12.2	13.5	1.0	11	5.0	33.0	18.2
SMBJ12	LD	BD	13.3	16.3	1.0	12	5.0	27.3	22.0
SMBJ12A	LE	BE	13.3	14.7	1.0	12	5.0	30.2	19.9
SMBJ13	LF	LF	14.4	17.6	1.0	13	5.0	25.2	23.8
SMBJ13A	LG	LG	14.4	15.9	1.0	13	5.0	27.9	21.5
SMBJ14	LH	BH	15.6	19.1	1.0	14	5.0	23.3	25.8
SMBJ14A	LK	BK	15.6	17.2	1.0	14	5.0	25.9	23.2
SMBJ15	LL	BL	16.7	20.4	1.0	15	5.0	22.3	26.9
SMBJ15A	LM	BM	16.7	18.5	1.0	15	5.0	24.6	24.4
SMBJ16	LN	LN	17.8	21.8	1.0	16	5.0	20.8	28.8
SMBJ16A	LP	LM	17.8	19.7	1.0	16	5.0	23.1	26.0
SMBJ17	LQ	LQ	18.9	23.1	1.0	17	5.0	19.7	30.5
SMBJ17A	LR	LR	18.9	20.9	1.0	17	5.0	21.7	27.6
SMBJ18	LS	BS	20.0	24.4	1.0	18	5.0	18.6	32.2
SMBJ18A	LT	BT	20.0	22.1	1.0	18	5.0	20.5	29.2
SMBJ20	LU	LU	22.2	27.1	1.0	20	5.0	16.8	35.8
SMBJ20A	LV	LV	22.2	24.5	1.0	20	5.0	18.5	32.4
SMBJ22	LW	BW	24.4	29.8	1.0	22	5.0	15.2	39.4
SMBJ22A	LX	BX	24.4	26.9	1.0	22	5.0	16.9	35.5

Notes 1. Pulse test : $t_p \leq 50ms$

2. Surge current w aveform per Fig.3 and derate per Fig.2
3. For bi-directional types having V_{WM} of 10 Volts and less,the I_D limit is doubled
4. All terms and symbols are consistent w ith ANSI/IEEE C62.35

Electrical Characteristics

Rating at 25℃ ambient temperature unless otherwise specified. V_F=3.5V at I_F=25A (uni-directional only)

Device Type	Device Marking Code		Breakdown Voltage $V_{(BR)}$ at I_T (1) (V)		Test Current I_T(mA)	Stand-off Voltage V_{WM}(V)	Maximum Reverse Leakage at V_{WM} I_D(uA)(3)	Maximum Peak Pulse Surge Current I_{PPM}(A)(2)	Maximum Clamping Voltage at I_{PPM} V_C(V)
	Uni	Bi	Min	Max					
SMBJ24	LY	BY	26.7	32.6	1.0	24	5.0	14.0	43.0
SMBJ24A	LZ	BZ	26.7	29.5	1.0	24	5.0	15.4	38.9
SMBJ26	MD	CD	28.9	35.3	1.0	26	5.0	12.9	46.6
SMBJ26A	ME	CE	28.9	31.9	1.0	26	5.0	14.3	42.1
SMBJ28	MF	MF	31.1	38.0	1.0	28	5.0	12.0	50.0
SMBJ28A	MG	MG	31.1	34.4	1.0	28	5.0	13.2	45.4
SMBJ30	MH	CH	33.3	40.7	1.0	30	5.0	11.2	53.5
SMBJ30A	MK	CK	33.3	36.8	1.0	30	5.0	12.4	48.4
SMBJ33	ML	CL	36.7	44.9	1.0	33	5.0	10.2	59.0
SMBJ33A	MM	CM	36.7	40.6	1.0	33	5.0	11.3	53.3
SMBJ36	MN	CN	40.0	48.9	1.0	36	5.0	9.3	64.3
SMBJ36A	MP	CP	40.0	44.2	1.0	36	5.0	10.3	58.1
SMBJ40	MQ	CQ	44.4	54.3	1.0	40	5.0	8.4	71.4
SMBJ40A	MR	CR	44.4	49.1	1.0	40	5.0	9.3	64.5
SMBJ43	MS	CS	47.8	58.4	1.0	43	5.0	7.8	76.7
SMBJ43A	MT	CT	47.8	52.8	1.0	43	5.0	8.6	69.4
SMBJ45	MU	MU	50.0	61.1	1.0	45	5.0	7.5	80.3
SMBJ45A	MV	MV	50.0	55.3	1.0	45	5.0	8.3	72.7
SMBJ48	MW	MW	53.3	65.1	1.0	48	5.0	7.0	85.5
SMBJ48A	MX	MX	53.3	58.9	1.0	48	5.0	7.8	77.4
SMBJ51	MY	MY	56.7	69.3	1.0	51	5.0	6.6	91.1
SMBJ51A	MZ	MZ	56.7	62.7	1.0	51	5.0	7.3	82.4
SMBJ54	ND	ND	60.0	73.3	1.0	54	5.0	6.2	96.3
SMBJ54A	NE	NE	60.0	66.3	1.0	54	5.0	6.9	87.1
SMBJ58	NF	NF	64.4	78.7	1.0	58	5.0	5.8	103
SMBJ58A	NG	NG	64.4	71.2	1.0	58	5.0	6.4	93.6
SMBJ60	NH	NH	66.7	81.5	1.0	60	5.0	5.6	107
SMBJ60A	NK	NK	66.7	73.7	1.0	60	5.0	6.2	96.8
SMBJ64	NL	NL	71.1	86.9	1.0	64	5.0	5.3	114
SMBJ64A	NM	NM	71.1	78.6	1.0	64	5.0	5.8	103
SMBJ70	NN	NN	77.8	95.1	1.0	70	5.0	4.8	125
SMBJ70A	NP	NP	77.8	86.0	1.0	70	5.0	5.3	113
SMBJ75	NQ	NQ	83.3	102	1.0	75	5.0	4.5	134
SMBJ75A	NR	NR	83.3	92.1	1.0	75	5.0	5.0	121
SMBJ78	NS	NS	86.7	106	1.0	78	5.0	4.3	139
SMBJ78A	NT	NT	86.7	95.8	1.0	78	5.0	4.8	126
SMBJ85	NU	NU	94.4	115	1.0	85	5.0	4.0	151
SMBJ85A	NV	NV	94.4	104	1.0	85	5.0	4.4	137

Notes 1. Pulse test : $t_p \leq 50ms$
2. Surge current w aveform per Fig.3 and derate per Fig.2
3. For bi-directional types having V_{WM} of 10 Volts and less,the I_D Iimit is doubled
4. All terms and symbols are consistent w ith ANSI/IEEE C62.35

Electrical Characteristics

Rating at 25℃ ambient temperature unless otherwise specified. V_F=3.5V at I_F=25A (uni-directional only)

Device Type	Device Marking Code		Breakdown Voltage $V_{(BR)}$ at I_T (1) (V)		Test Current I_T(mA)	Stand-off Voltage V_{WM}(V)	Maximum Reverse Leakage at V_{WM} I_D(uA)(3)	Maximum Peak Pulse Surge Current I_{PPM}(A)(2)	Maximum Clamping Voltage at I_{PPM} V_C(V)
	Uni	Bi	Min	Max					
SMBJ90	NW	NW	100	122	1.0	90	5.0	3.8	160
SMBJ90A	NX	NX	100	111	1.0	90	5.0	4.1	146
SMBJ100	NY	NY	111	136	1.0	100	5.0	3.4	179
SMBJ100A	NZ	NZ	111	123	1.0	100	5.0	3.7	162
SMBJ110	PD	PD	122	149	1.0	110	5.0	3.1	196
SMBJ110A	PE	PE	122	135	1.0	110	5.0	3.4	177
SMBJ120	PF	PF	133	163	1.0	120	5.0	2.8	214
SMBJ120A	PG	PG	133	147	1.0	120	5.0	3.1	193
SMBJ130	PH	PH	144	176	1.0	130	5.0	2.6	231
SMBJ130A	PK	PK	144	159	1.0	130	5.0	2.9	209
SMBJ150	PL	PL	167	204	1.0	150	5.0	2.2	268
SMBJ150A	PM	PM	167	185	1.0	150	5.0	2.5	243
SMBJ160	PN	PN	178	218	1.0	160	5.0	2.1	287
SMBJ160A	PP	PP	178	197	1.0	160	5.0	2.3	259
SMBJ170	PQ	PQ	189	231	1.0	170	5.0	2.0	304
SMBJ170A	PR	PR	189	209	1.0	170	5.0	2.2	275
SMBJ180A	PT	ET	201	222	1.0	180	5.0	2.1	292
SMBJ200A	PV	EV	224	247	1.0	200	5.0	1.9	324
SMBJ220A	PX	EX	246	272	1.0	220	5.0	1.7	356
SMBJ250A	PZ	EZ	279	309	1.0	250	5.0	1.5	405
SMBJ300A	QE	FE	335	371	1.0	300	5.0	1.3	486
SMBJ350A	QG	FG	391	432	1.0	350	5.0	1.1	567
SMBJ400A	QK	FK	447	494	1.0	400	5.0	0.9	648
SMBJ440A	QM	FM	492	543	1.0	440	5.0	0.9	713

Notes 1. Pulse test : tp≤50ms
2. Surge current w aveform per Fig.3 and derate per Fig.2
3. For bi-directional types having V_{WM} of 10 Volts and less,the I_D Iimit is doubled
4. All terms and symbols are consistent w ith ANSI/IEEE C62.35
5. For the bidirectional SMBJ5.0CA, the maximum $V_{(BR)}$ is 7.25V

Ratings and Characteristics Curves (Ta=25°C unless otherwise noted)

Fig.1 Peak Pulse Power Rating Curve

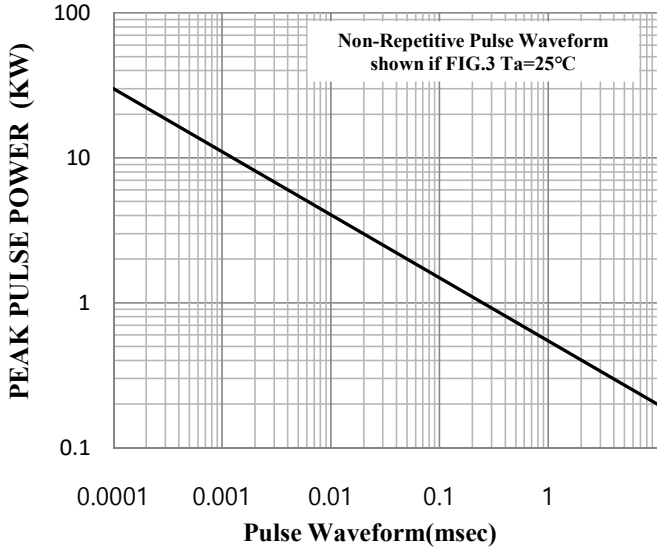


Fig. 2 Peak Pulse Power Derating Curve

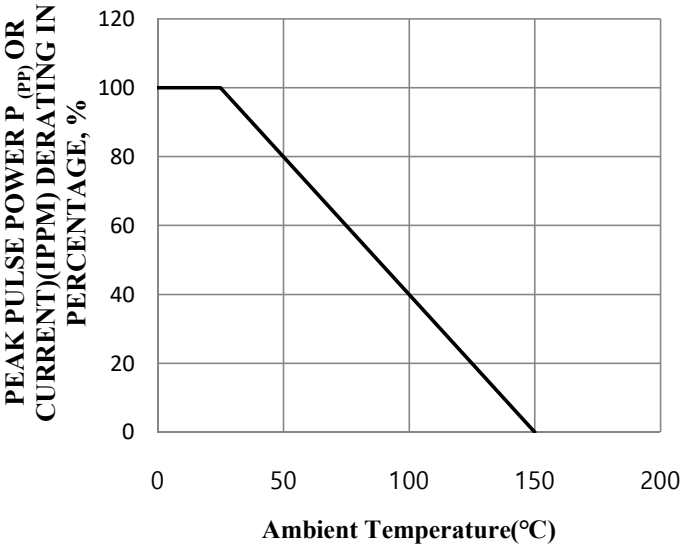


Fig. 3 Pulse Waveform

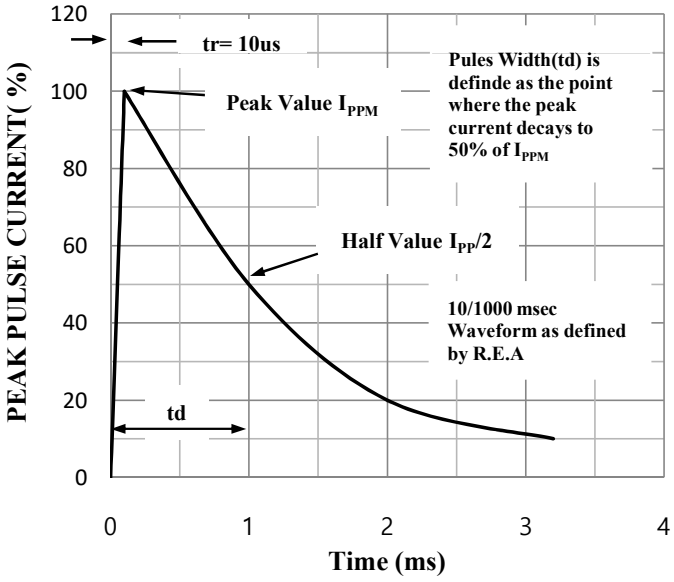


Fig. 4 Typical Junction Capacitance

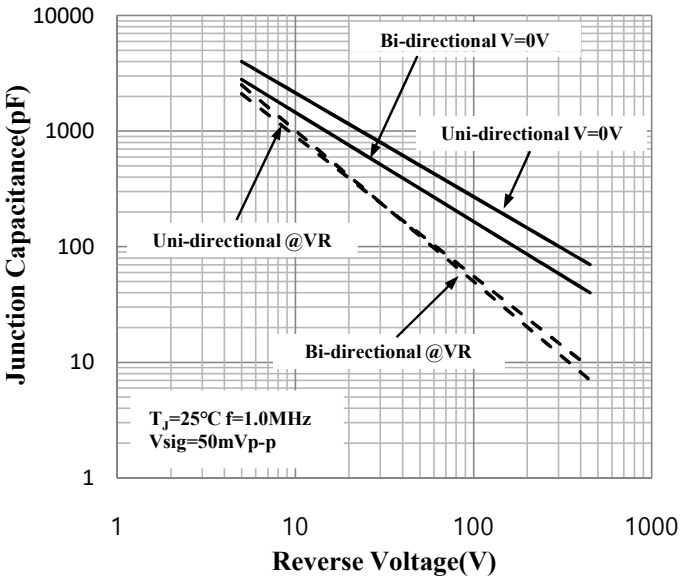


Fig. 5 Typical Transient Thermal Impedance

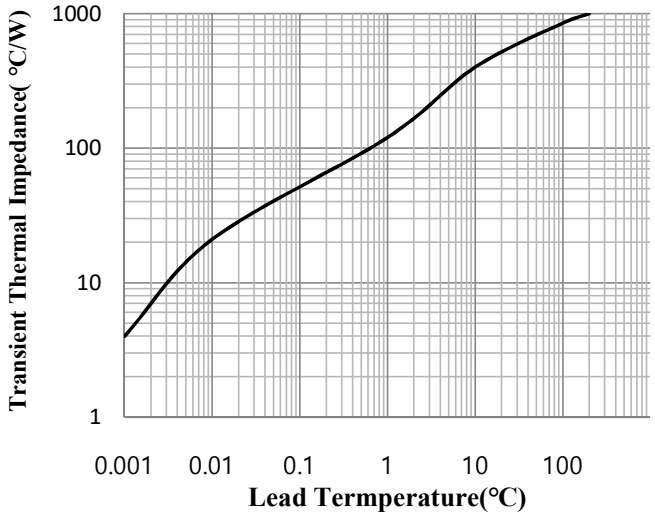


Fig. 6 Maximum Non-Repetitive Forward Surge Current Unidirectional Only