



1. Features

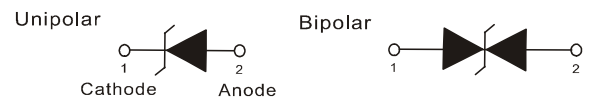
- For surface mounted applications in order to optimize board space.
- Glass passivated junction
- Low inductance
- Plastic package has Underwriters Laboratory Fammability Classification 94V-0
- High temperature soldering : 260°C /10 seconds at terminals

Case: SMB(DO-214AA)



2. Mechanical Data

- Case:SMB(DO-214AA) molded plastic
- Terminals: plated leads solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting position: Any



3. Maximum Ratings and Electrical Characteristics

Rating at 25°C Ambient temperature unless otherwise specified. Resistive or inductive load,
For Capacitive load derate current by 20%.

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000 μ s waveform ⁽¹⁾ Fig.2	P_{PPM}	600	W
Peak pulse current with a waveform ⁽¹⁾	I_{PPM}	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 uni-directional only ⁽²⁾	I_{FSM}	100	A
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	$^{\circ}\text{C}$

Note:

(1) Non-repetitive current pulse per Fig.3 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.

**4. Electrical Characteristics (TA=25°C unless otherwise noted)**

Part Number (Uni)	Part Number (Bi)	Marking Code		Breakdown Voltage $V_{BR@I_T}$			Maximum Reverse Leakage $I_{R@V_{RWM}}$ (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current $I_{pp}(A)$	Maximum Clamping Voltage $V_c@$ $I_{pp}(V)$
		Uni	Bi	Min(V)	Max(V)	$I_T(mA)$				
SMBJ5.0A	SMBJ5.0CA	KE	AE	6.4	7.0	10	800	5	65.22	9.2
SMBJ6.0A	SMBJ6.0CA	KG	AG	6.67	7.37	10	800	6	58.3	10.3
SMBJ6.5A	SMBJ6.5CA	KK	AK	7.22	7.98	10	500	6.5	53.6	11.2
SMBJ7.0A	SMBJ7.0CA	KM	AM	7.78	8.6	10	200	7	50.0	12
SMBJ7.5A	SMBJ7.5CA	KP	AP	8.33	9.21	1	100	7.5	46.5	12.9
SMBJ8.0A	SMBJ8.0CA	KR	AR	8.89	9.83	1	50	8	44.1	13.6
SMBJ8.5A	SMBJ8.5CA	KT	AT	9.44	10.4	1	10	8.5	41.7	14.4
SMBJ9.0A	SMBJ9.0CA	KV	AV	10.0	11.1	1	5	9	39.0	15.4
SMBJ10A	SMBJ10CA	KX	AX	11.1	12.3	1	5	10	35.3	17
SMBJ11A	SMBJ11CA	KZ	AZ	12.2	13.5	1	1	11	33.0	18.2
SMBJ12A	SMBJ12CA	LE	BE	13.3	14.7	1	1	12	30.2	19.9
SMBJ13A	SMBJ13CA	LG	BG	14.4	15.9	1	1	13	27.9	21.5
SMBJ14A	SMBJ14CA	LK	BK	15.6	17.2	1	1	14	25.9	23.2
SMBJ15A	SMBJ15CA	LM	BM	16.7	18.5	1	1	15	24.6	24.4
SMBJ16A	SMBJ16CA	LP	BP	17.8	19.7	1	1	16	23.1	26
SMBJ17A	SMBJ17CA	LR	BR	18.9	20.9	1	1	17	21.8	27.6
SMBJ18A	SMBJ18CA	LT	BT	20.0	22.1	1	1	18	20.6	29.2
SMBJ20A	SMBJ20CA	LV	BV	22.2	24.5	1	1	20	18.6	32.4
SMBJ22A	SMBJ22CA	LX	BX	24.4	26.9	1	1	22	16.9	35.5
SMBJ24A	SMBJ24CA	LZ	BZ	26.7	29.5	1	1	24	15.4	38.9
SMBJ26A	SMBJ26CA	ME	CE	28.9	31.9	1	1	26	14.3	42.1
SMBJ28A	SMBJ28CA	MG	CG	31.1	34.4	1	1	28	13.2	45.4
SMBJ30A	SMBJ30CA	MK	CK	33.3	36.8	1	1	30	12.4	48.4
SMBJ33A	SMBJ33CA	MM	CM	36.7	40.6	1	1	33	11.3	53.3
SMBJ36A	SMBJ36CA	MP	CP	40.0	44.2	1	1	36	10.4	58.1
SMBJ40A	SMBJ40CA	MR	CR	44.4	49.1	1	1	40	9.3	64.5
SMBJ43A	SMBJ43CA	MT	CT	47.8	52.8	1	1	43	8.7	69.4
SMBJ45A	SMBJ45CA	MV	CV	50.0	55.3	1	1	45	8.3	72.7
SMBJ48A	SMBJ48CA	MX	CX	53.3	58.9	1	1	48	7.8	77.4
SMBJ51A	SMBJ51CA	MZ	CZ	56.7	62.7	1	1	51	7.3	82.4
SMBJ54A	SMBJ54CA	NE	DE	60.0	66.3	1	1	54	6.9	87.1
SMBJ58A	SMBJ58CA	NG	DG	64.4	71.2	1	1	58	6.4	93.6
SMBJ60A	SMBJ60CA	NK	DK	66.7	73.7	1	1	60	6.2	96.8
SMBJ64A	SMBJ64CA	NM	DM	71.1	78.6	1	1	64	5.8	103
SMBJ70A	SMBJ70CA	NP	DP	77.8	86.0	1	1	70	5.3	113



4. Electrical Characteristics (TA=25°C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Marking Code		Breakdown Voltage $V_{BR}@I_T$			Maximum Reverse Leakage $I_R@V_{RWM}$ (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current $I_{PP}(A)$	Maximum Clamping Voltage $V_C@I_{PP}(V)$
		Uni	Bi	Min(V)	Max(V)	$I_T(mA)$				
SMBJ75A	SMBJ75CA	NR	DR	83.3	92.1	1	1	75	5.0	121
SMBJ78A	SMBJ78CA	NT	DT	86.7	95.8	1	1	78	4.8	126
SMBJ85A	SMBJ85CA	NV	DV	94.4	104	1	1	85	4.4	137
SMBJ90A	SMBJ90CA	NX	DX	100	111	1	1	90	4.1	146
SMBJ100A	SMBJ100CA	NZ	DZ	111	123	1	1	100	3.7	162
SMBJ110A	SMBJ110CA	PE	EE	122	135	1	1	110	3.4	177
SMBJ120A	SMBJ120CA	PG	EG	133	147	1	1	120	3.1	193
SMBJ130A	SMBJ130CA	PK	EK	144	159	1	1	130	2.9	209
SMBJ150A	SMBJ150CA	PM	EM	167	185	1	1	150	2.5	243
SMBJ160A	SMBJ160CA	PP	EP	178	197	1	1	160	2.3	259
SMBJ170A	SMBJ170CA	PR	ER	189	209	1	1	170	2.2	275
SMBJ180A	SMBJ180CA	PT	ET	200	220	1	1	180	2.1	292
SMBJ190A	SMBJ190CA	PV	EV	211	234	1	1	190	2.0	307
SMBJ200A	SMBJ200CA	PX	EX	224	247	1	1	200	1.9	324
SMBJ210A	SMBJ210CA	PZ	EZ	233	258	1	1	210	1.8	337
SMBJ220A	SMBJ220CA	QE	FE	246	272	1	1	220	1.7	356
SMBJ250A	SMBJ250CA	QG	FG	279	309	1	1	250	1.5	405
SMBJ300A	SMBJ300CA	QK	FK	335	371	1	1	300	1.3	486
SMBJ350A	SMBJ350CA	QM	FM	391	431	1	1	350	1.1	567
SMBJ400A	SMBJ400CA	QP	FP	447	494	1	1	400	0.9	648
SMBJ440A	SMBJ440CA	QR	FR	492	543	1	1	440	0.8	713

Note:

① Surge waveform: 10/1000 μs

V_{RWM} : Stand-off voltage -- Maximum voltage that can be applied

V_{BR} : Breakdown voltage

V_C : Clamping voltage -- Peak voltage measured across the suppressor at a specified I_{PP}

I_R : Reverse leakage current



5. Rating And Characteristic Curves

Fig.1 Derating Curve

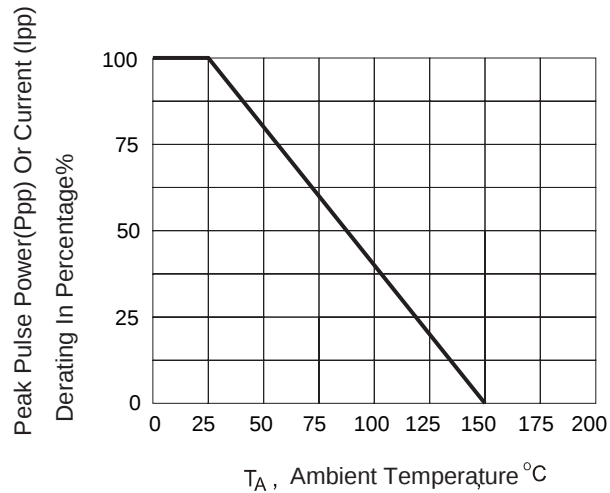


Fig. 2 Peak Pulse Power Rating Curve

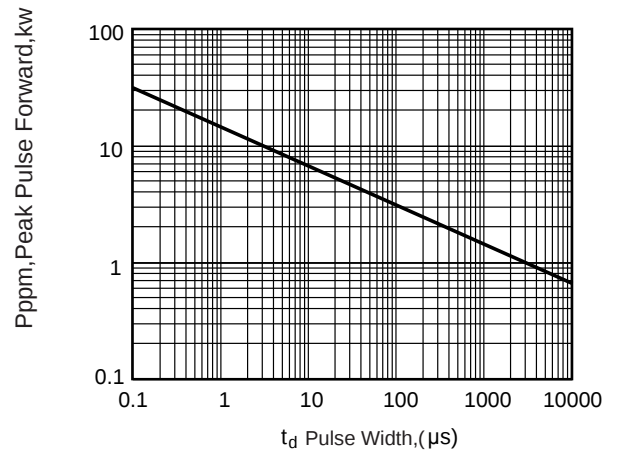


Fig.3 Clamping Power Pulse Waveform

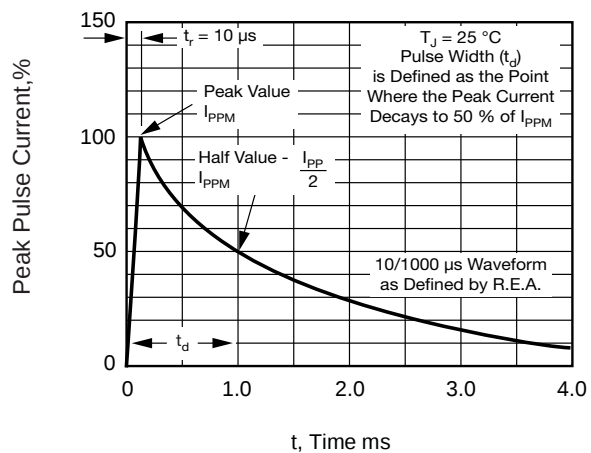
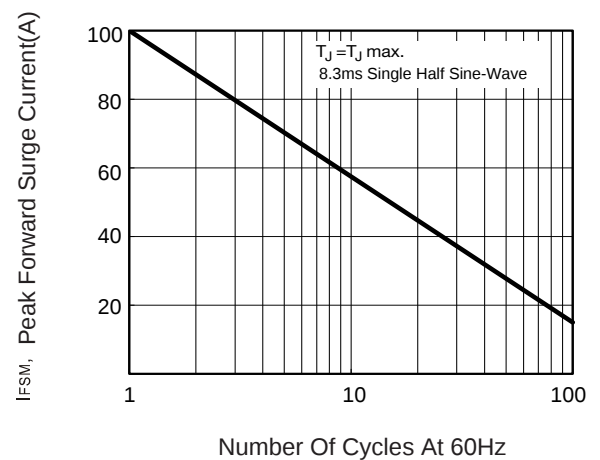
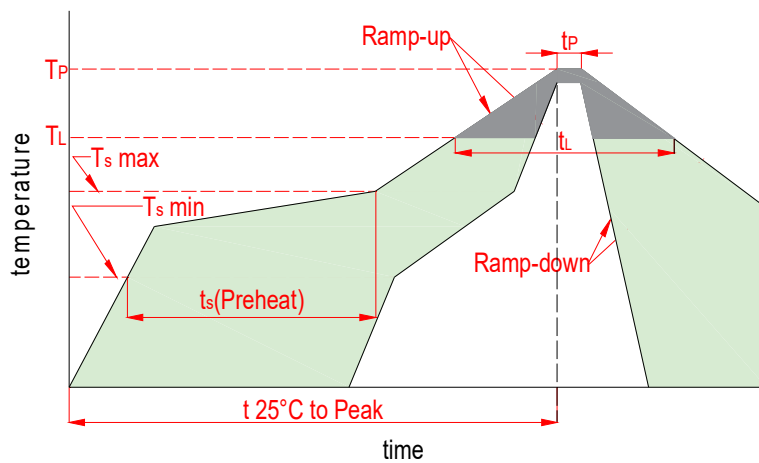


Fig.4 Maximum Non-repetitive Forward Surge Current Unidirectional only



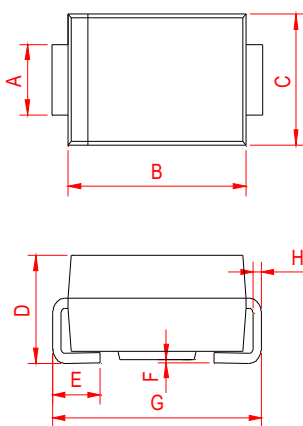


6. Soldering Parameters



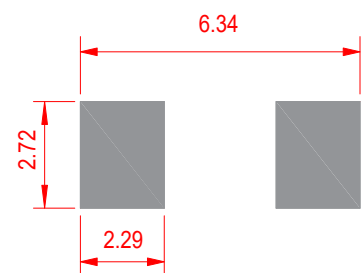
Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s (min))	150℃
	Temp. max(T_s (min))	200℃
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
T_s (max) to T_L -Ramp-up Rate		3℃/s max
Reflow	Temp.(T_L)(Liquidus)	217℃
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_p)		260 ^{+0/-5} ℃
Time within actual peak Temp.(t_p)		30s max
Ramp-down Rate		6℃/s max
Time 25℃ to peak Tempe.(T_p)		8 minutes max
Do not exceed		260℃

7. Dimensions



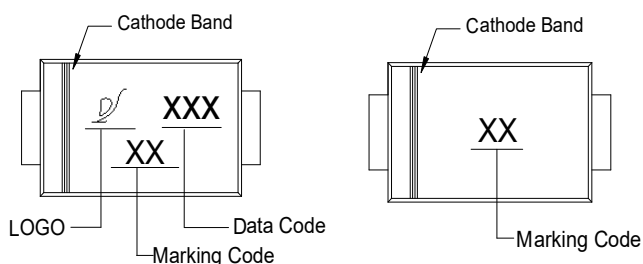
Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.071	0.087	1.8	2.2
B	0.163	0.187	4.15	4.75
C	0.130	0.154	3.3	3.9
D	0.084	0.102	2.13	2.6
E	0.033	0.057	0.85	1.45
F	0.000	0.008	0.0	0.2
G	0.197	0.217	5.0	5.5
H	0.004	0.012	0.1	0.3

Mounting PAD Layout

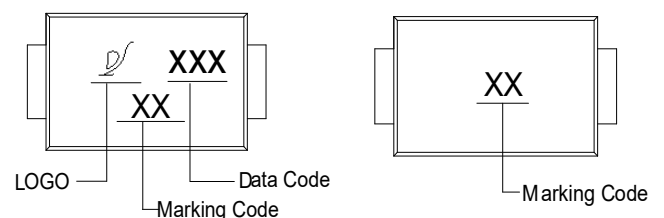


8. Part Marking System

Unipolar



Bipolar



9. Package Information

Package	Tape Width (mm)	Reel Size		Quantity(pcs)
		mm	inch	
SMB(DO-214AA)	12	330	13	3000



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