

Features

- Optimized for LAN protection applications
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction chip
- 600w peak pulse power capability
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time: typically less than 1.0ps from 0v to V_{BR} min

Mechanical Data

Case : Molded plastic body

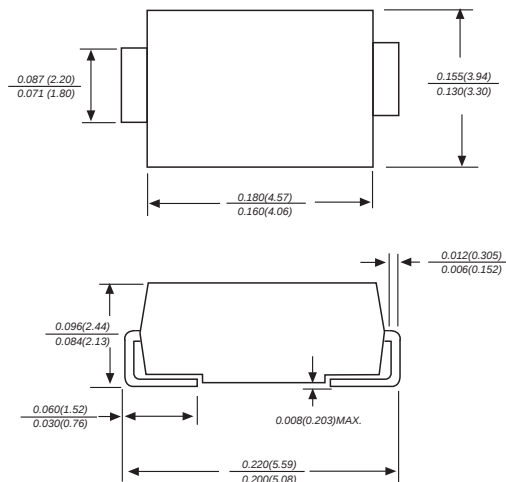
Terminals : Solder plated, solderable per MIL-STD-750, Method 2026

Polarity : Polarity symbol marking on body

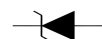
Mounting Position : Any

Weight : 0.0035 ounce, 0.098 grams

DO-214AA/SMB



Uni-Polar



Bi-Polar



Dimensions in inches and (millimeters)

Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	SYMBOLS	VALUE	UNITS
Peak pulse power dissipation with a 10/1000μs wavetorm(NOTE 1,2,FIG.1)	P_{PPM}	Minimum 600	Watts
Peak forward surge current (Note 1,2,3)	I_{FSM}	100.0	Amps
Peak pulse current with a 10/1000μs waveform(NOTE 1)	I_{PPM}	See Table 1	Amps
Steady state power dissipation (Note 3)	$P_{M(AV)}$	5.0	Watts
Maximum instantaneous forward voltage at 50A(Note 3,4) unidirectional only	V_F	3.5/5.0	Volts
Operating junction and storage temperature range	T_{STG}, T_J	-55 to + 150	°C

Notes:1.Non-repetitive current pulse,per Fig.3 and derated above $T_A=25^\circ\text{C}$ per Fig.2

2.Mounted on 5.0mm copper pads to each terminal

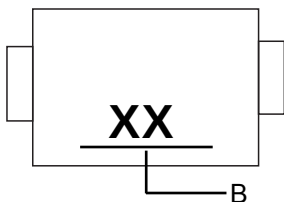
3.Measured on 8.3ms single half sine-wine.For uni-directional devices only.

4. $V_F=3.5\text{V}$ on SMB-5.0 thru SMB-220 devices and $V_F=5.0\text{V}$ on SMB-220 thru SMB-440 devices

Type	Marking	Peak Pulse Power	Stand-off Voltage	Maximum Reverse Current at VR	Breakdown Voltage at IT		Test Current	Maximum Peak Pulse Current	Maximum Clamping Voltage at Ipp
Bi-Polar	Bi-Polar	PPP	V(R)	IR	V (BR) (V)		IT	Ipp	Vc
		(W)	(V)	(μ A)	Min.	Max.	(mA)	(A)	(V)
SMBJ5.0CA	AE	600	5	800	6.4	7	10	65.3	9.2
SMBJ6.0CA	AG	600	6	800	6.67	7.37	10	58.3	10.3
SMBJ6.5CA	AK	600	6.5	500	7.22	7.98	10	53.6	11.2
SMBJ7.0CA	AM	600	7	200	7.78	8.6	10	50.0	12.0
SMBJ7.5CA	AP	600	7.5	100	8.33	9.21	1	46.6	12.9
SMBJ8.0CA	AR	600	8	50	8.89	9.83	1	44.2	13.6
SMBJ8.5CA	AT	600	8.5	20	9.44	10.4	1	41.7	14.4
SMBJ9.0CA	AV	600	9	10	10	11.1	1	39.0	15.4
SMBJ10CA	AX	600	10	5	11.1	12.3	1	35.3	17.0
SMBJ11CA	AZ	600	11	1	12.2	13.5	1	33.0	18.2
SMBJ12CA	BE	600	12	1	13.3	14.7	1	30.2	19.9
SMBJ13CA	BG	600	13	1	14.4	15.9	1	28.0	21.5
SMBJ14CA	BK	600	14	1	15.6	17.2	1	25.9	23.2
SMBJ15CA	BM	600	15	1	16.7	18.5	1	24.6	24.4
SMBJ16CA	BP	600	16	1	17.8	19.7	1	23.1	26.0
SMBJ17CA	BR	600	17	1	18.9	20.9	1	21.8	27.6
SMBJ18CA	BT	600	18	1	20	22.1	1	20.6	29.2
SMBJ20CA	BV	600	20	1	22.2	24.5	1	18.6	32.4
SMBJ22CA	BX	600	22	1	24.4	26.9	1	16.9	35.5
SMBJ24CA	BZ	600	24	1	26.7	29.5	1	15.5	38.9
SMBJ26CA	CE	600	26	1	28.9	31.9	1	14.3	42.1
SMBJ28CA	CG	600	28	1	31.1	34.4	1	13.3	45.4
SMBJ30CA	CK	600	30	1	33.3	36.8	1	12.4	48.4
SMBJ33CA	CM	600	33	1	36.7	40.6	1	11.3	53.3
SMBJ36CA	CP	600	36	1	40	44.2	1	10.4	58.1
SMBJ40CA	CR	600	40	1	44.4	49.1	1	9.3	64.5
SMBJ43CA	CT	600	43	1	47.8	52.8	1	8.7	69.4
SMBJ45CA	CV	600	45	1	50	55.3	1	8.3	72.7
SMBJ48CA	CX	600	48	1	53.3	58.9	1	7.8	77.4
SMBJ51CA	CZ	600	51	1	56.7	62.7	1	7.3	82.4
SMBJ54CA	DE	600	54	1	60	66.3	1	6.9	87.1
SMBJ58CA	DG	600	58	1	64.4	71.2	1	6.5	93.6
SMBJ60CA	DK	600	60	1	66.7	73.7	1	6.2	96.8
SMBJ64CA	DM	600	64	1	71.1	78.6	1	5.9	103
SMBJ70CA	DP	600	70	1	77.8	86	1	5.3	113
SMBJ75CA	DR	600	75	1	83.3	92.1	1	5.0	121
SMBJ78CA	DT	600	78	1	86.7	95.8	1	4.8	126
SMBJ85CA	DV	600	85	1	94.4	104	1	4.4	137
SMBJ90CA	DX	600	90	1	100	111	1	4.1	146
SMBJ100CA	DZ	600	100	1	111	123	1	3.7	162

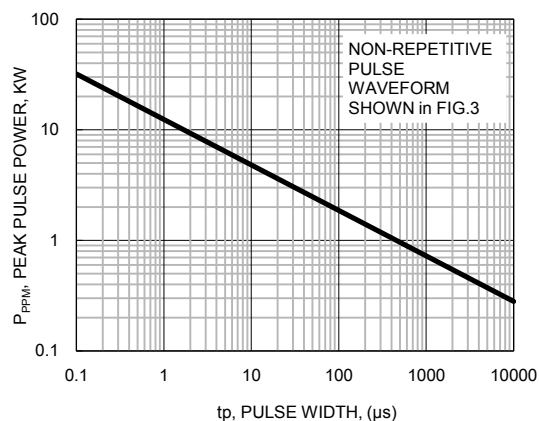
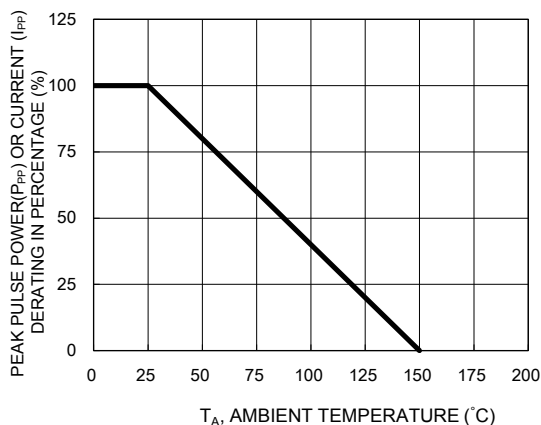
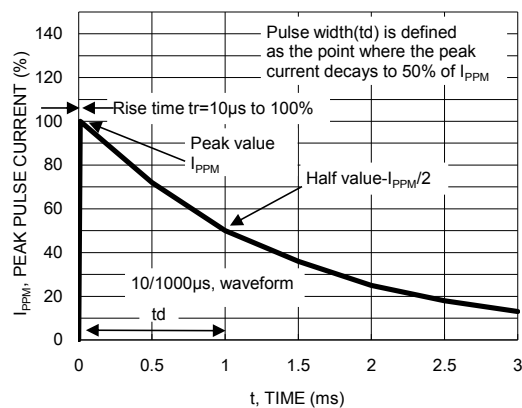
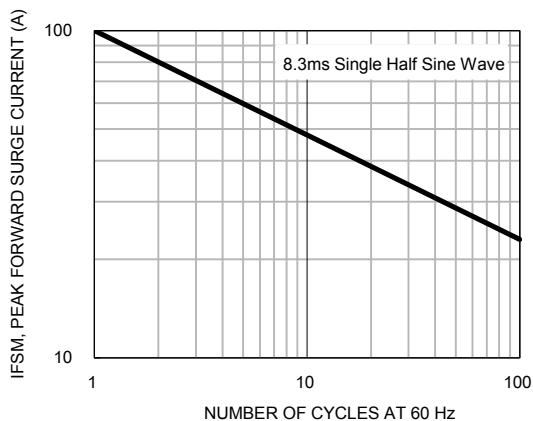
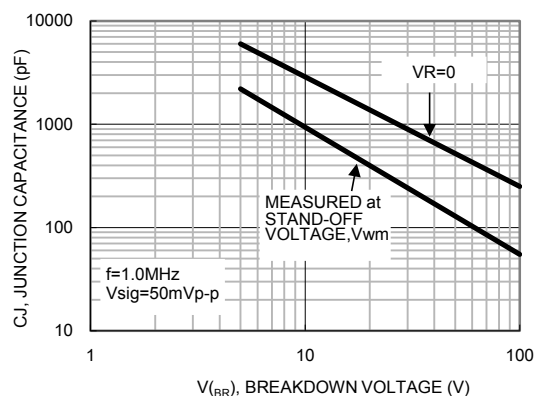
Type	Marking	Peak Pulse Power	Stand-off Voltage	Maximum Reverse Current at VR	Breakdown Voltage at IT		Test Current	Maximum Peak Pulse Current	Maximum Clamping Voltage at Ipp
Bi-Polar	Bi-Polar	PPP	V(R)	IR	V (BR) (V)		IT	Ipp	Vc
		(W)	(V)	(uA)	Min.	Max.	(mA)	(A)	(V)
SMBJ110CA	EE	600	110	1	122	135	1	3.4	177
SMBJ120CA	EG	600	120	1	133	147	1	3.1	193
SMBJ130CA	EK	600	130	1	144	159	1	2.9	209
SMBJ150CA	EM	600	150	1	167	185	1	2.5	243
SMBJ160CA	EP	600	160	1	178	197	1	2.3	259
SMBJ170CA	ER	600	170	1	189	209	1	2.2	275
SMBJ180CA	ET	600	180	1	201	222	1	2.1	292
SMBJ188CA	EB	600	188	1	209	231	1	2.0	304
SMBJ200CA	EV	600	200	1	224	247	1	1.9	324
SMBJ220CA	EX	600	220	1	246	272	1	1.7	356
SMBJ250CA	EZ	600	250	1	279	309	1	1.5	405
SMBJ300CA	FE	600	300	1	335	371	1	1.3	486
SMBJ350CA	FG	600	350	1	391	432	1	1.1	567
SMBJ400CA	FK	600	400	1	447	494	1	0.9	648
SMBJ440CA	FM	600	440	1	492	543	1	0.9	713

Marking For Bi-Polar

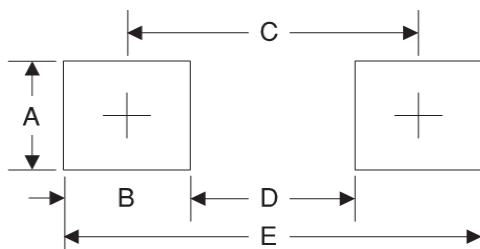


Symbol	Explanation
B	Marking Code, as above sheet

Ratings And Characteristic Curves

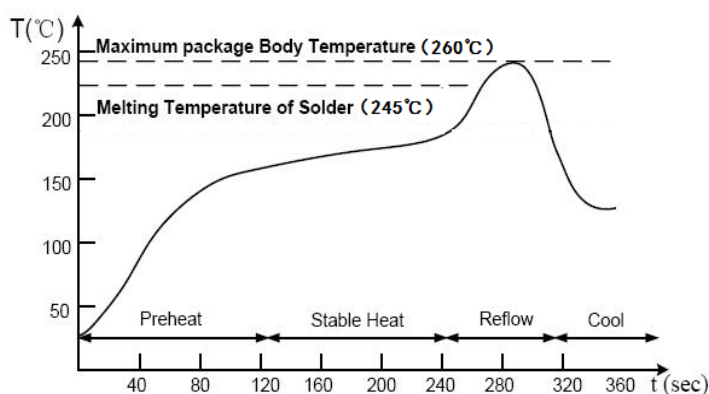
Fig1. Peak Pulse Power Rating Curve

Fig2. Pulse Derating Curve

Fig3. Clamping Power Pulse Waveform

Fig4. Maximum Non-Repetitive Forward Surge Current Unidirectional Only

Fig5. Typical Junction Capacitance


Suggested Pad Layout



Symbol	Unit (mm)	Unit (inch)
A	2.30	0.091
B	2.00	0.078
C	4.10	0.161
D	2.10	0.083
E	6.10	0.240

Suggested Soldering Temperature Profile

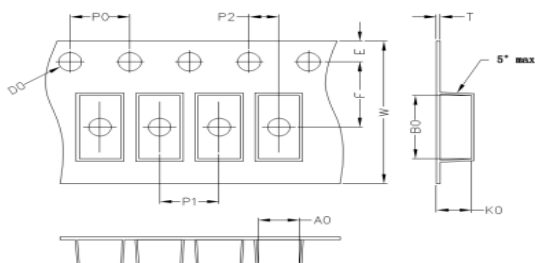


Note

- Recommended reflow methods: IR, vapor phase oven, hot air oven, wave solder.
- The device can be exposed to a maximum temperature of 260°C for 10 seconds.
- Devices can be cleaned using standard industry methods and solvents.
- If reflow temperatures exceed the recommended profile, devices may not meet the performance requirements.

Package Information

Carrier Dimension(mm)



A0	B0	K0	D0	E	F
3.80	5.40	2.45	1.55	1.75	5.50
P0	P1	P2	T	W	Tolerance
4.0	8.0	2.0	0.25	12	0.1

Package Specifications

Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SMB	13'	330	3.0	340	6.0	360*360*360	48

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