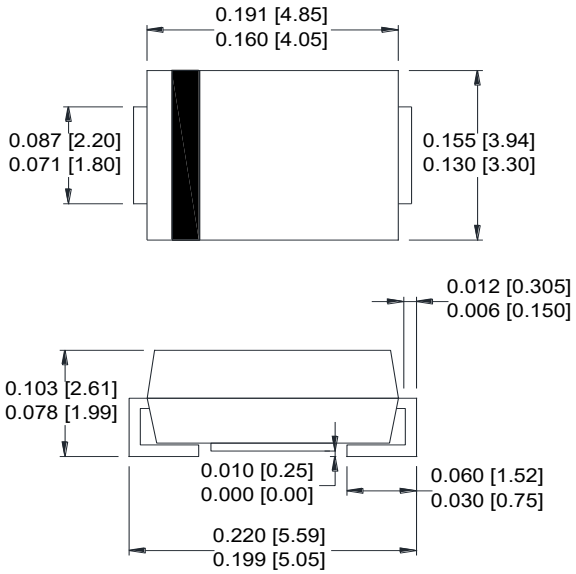
Working Voltage: 3.3V to 440V
Peak Pulse Power: 600W

Surface Mount Transient Voltage Suppressors

Features

- Glass passivated chip
- 600W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle):0.01 %
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant
- Meets MSL level 1
- IEC 61000-4-2 (ESD) ±30kV (air), ±30kV (contact)

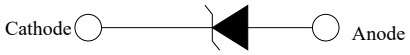
SMB/ DO-214AA



Dimensions : inch [mm]



Bi-directional



Uni-directional

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

Maximum Ratings (T_A=25℃ unless otherwise noted)

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

Note:

(1)Non-repetitive current pulse per Fig.5 and derated above T_A= 25 °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<3.5V for devices of V_{BR}<200V and V_F<5.0V for devices of V_{BR}>201V

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

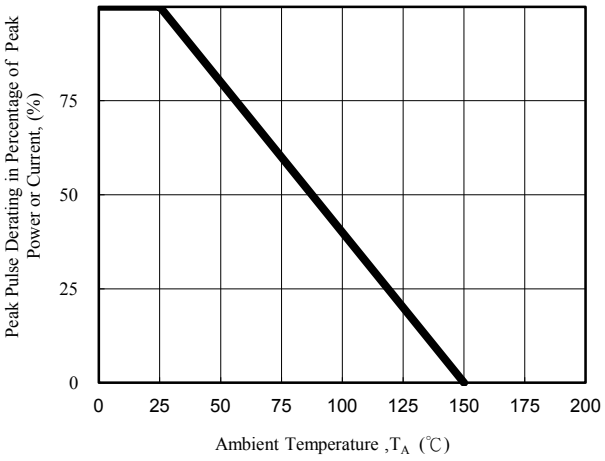


Fig. 1 - Pulse Derating Curve

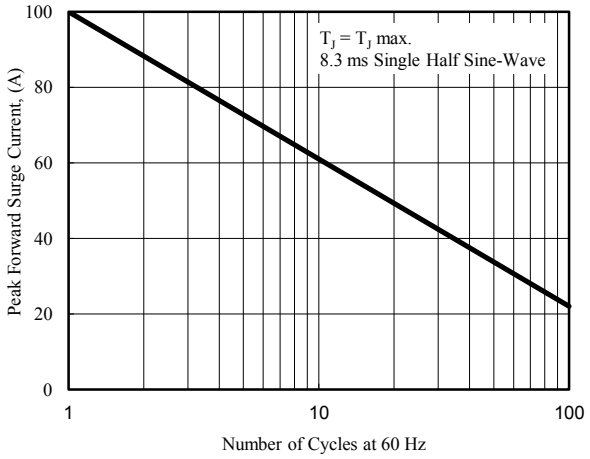


Fig. 2 - Maximum Non-Repetitive Surge Current

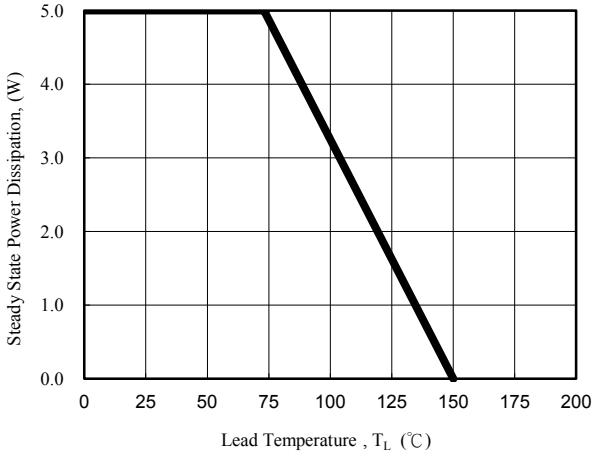


Fig. 3 - Steady State Power Derating Curve

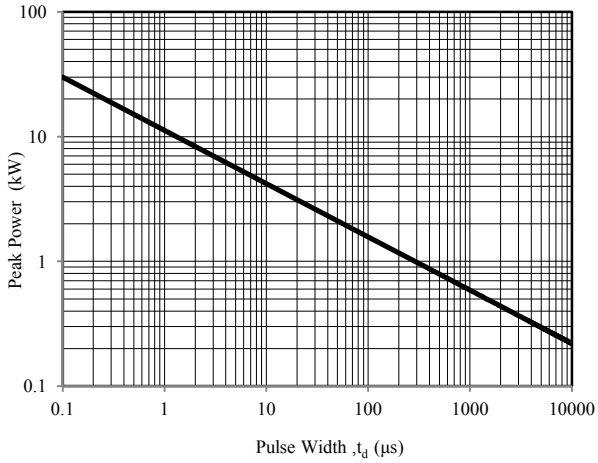


Fig. 4 - Peak Pulse Power Rating Curve

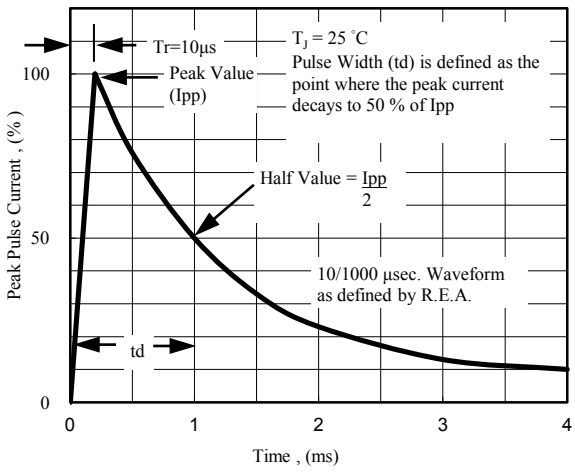


Fig. 5 - Pulse Waveform

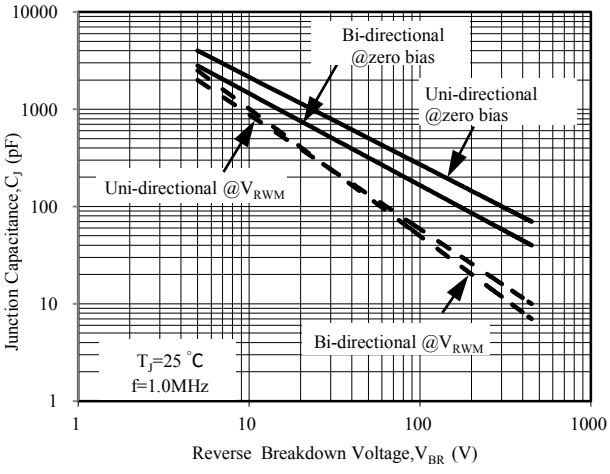


Fig. 6 - Typical Junction Capacitance

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Device 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)				
SMBJ3.3A	SMBJ3.3CA	KC	DL	5.20	6.50	10	600	3.3	75.00	8.0
SMBJ5.0A	SMBJ5.0CA	KE	AE	6.40	7.00	10	800	5.0	65.22	9.2
SMBJ6.0A	SMBJ6.0CA	KG	AG	6.67	7.37	10	800	6.0	58.25	10.3
SMBJ6.5A	SMBJ6.5CA	KK	AK	7.22	7.98	10	500	6.5	53.57	11.2
SMBJ7.0A	SMBJ7.0CA	KM	AM	7.78	8.60	10	200	7.0	50.00	12.0
SMBJ7.5A	SMBJ7.5CA	KP	AP	8.33	9.21	1	100	7.5	46.51	12.9
SMBJ8.0A	SMBJ8.0CA	KR	AR	8.89	9.83	1	50	8.0	44.12	13.6
SMBJ8.5A	SMBJ8.5CA	KT	AT	9.44	10.40	1	10	8.5	41.67	14.4
SMBJ9.0A	SMBJ9.0CA	KV	AV	10.00	11.10	1	5	9.0	38.96	15.4
SMBJ10A	SMBJ10CA	KX	AX	11.10	12.30	1	5	10.0	35.29	17.0
SMBJ11A	SMBJ11CA	KZ	AZ	12.20	13.50	1	1	11.0	32.97	18.2
SMBJ12A	SMBJ12CA	LE	BE	13.30	14.70	1	1	12.0	30.15	19.9
SMBJ13A	SMBJ13CA	LG	BG	14.40	15.90	1	1	13.0	27.91	21.5
SMBJ14A	SMBJ14CA	LK	BK	15.60	17.20	1	1	14.0	25.86	23.2
SMBJ15A	SMBJ15CA	LM	BM	16.70	18.50	1	1	15.0	24.59	24.4
SMBJ16A	SMBJ16CA	LP	BP	17.80	19.70	1	1	16.0	23.08	26.0
SMBJ17A	SMBJ17CA	LR	BR	18.90	20.90	1	1	17.0	21.74	27.6
SMBJ18A	SMBJ18CA	LT	BT	20.00	22.10	1	1	18.0	20.55	29.2
SMBJ19A	SMBJ19CA	LB	BB	21.10	23.30	1	1	19.0	19.49	30.8
SMBJ20A	SMBJ20CA	LV	BV	22.20	24.50	1	1	20.0	18.52	32.4
SMBJ22A	SMBJ22CA	LX	BX	24.40	26.90	1	1	22.0	16.90	35.5
SMBJ24A	SMBJ24CA	LZ	BZ	26.70	29.50	1	1	24.0	15.42	38.9
SMBJ26A	SMBJ26CA	ME	CE	28.90	31.90	1	1	26.0	14.25	42.1
SMBJ28A	SMBJ28CA	MG	CG	31.10	34.40	1	1	28.0	13.22	45.4
SMBJ30A	SMBJ30CA	MK	CK	33.30	36.80	1	1	30.0	12.40	48.4
SMBJ33A	SMBJ33CA	MM	CM	36.70	40.60	1	1	33.0	11.26	53.3
SMBJ36A	SMBJ36CA	MP	CP	40.00	44.20	1	1	36.0	10.33	58.1
SMBJ39A	SMBJ39CA	MO	CO	43.60	47.96	1	1	39.0	9.39	63.9
SMBJ40A	SMBJ40CA	MR	CR	44.40	49.10	1	1	40.0	9.30	64.5
SMBJ43A	SMBJ43CA	MT	CT	47.80	52.80	1	1	43.0	8.65	69.4
SMBJ45A	SMBJ45CA	MV	CV	50.00	55.30	1	1	45.0	8.25	72.7
SMBJ48A	SMBJ48CA	MX	CX	53.30	58.90	1	1	48.0	7.75	77.4
SMBJ51A	SMBJ51CA	MZ	CZ	56.70	62.70	1	1	51.0	7.28	82.4
SMBJ54A	SMBJ54CA	NE	DE	60.00	66.30	1	1	54.0	6.89	87.1
SMBJ58A	SMBJ58CA	NG	DG	64.40	71.20	1	1	58.0	6.41	93.6
SMBJ60A	SMBJ60CA	NK	DK	66.70	73.70	1	1	60.0	6.20	96.8
SMBJ64A	SMBJ64CA	NM	DM	71.10	78.60	1	1	64.0	5.83	103.0
SMBJ70A	SMBJ70CA	NP	DP	77.80	86.00	1	1	70.0	5.31	113.0
SMBJ75A	SMBJ75CA	NR	DR	83.30	92.10	1	1	75.0	4.96	121.0
SMBJ78A	SMBJ78CA	NT	DT	86.70	95.80	1	1	78.0	4.76	126.0
SMBJ80A	SMBJ80CA	NB	DB	88.80	97.60	1	1	80.0	4.63	129.6
SMBJ85A	SMBJ85CA	NV	DV	94.40	104.00	1	1	85.0	4.38	137.0
SMBJ90A	SMBJ90CA	NX	DX	100.00	111.00	1	1	90.0	4.11	146.0
SMBJ100A	SMBJ100CA	NZ	DZ	111.00	123.00	1	1	100.0	3.70	162.0
SMBJ110A	SMBJ110CA	PE	EE	122.00	135.00	1	1	110.0	3.39	177.0
SMBJ120A	SMBJ120CA	PG	EG	133.00	147.00	1	1	120.0	3.11	193.0
SMBJ130A	SMBJ130CA	PK	EK	144.00	159.00	1	1	130.0	2.87	209.0
SMBJ140A	SMBJ140CA	PB	EB	155.00	171.00	1	1	140.0	2.65	226.8
SMBJ150A	SMBJ150CA	PM	EM	167.00	185.00	1	1	150.0	2.47	243.0
SMBJ160A	SMBJ160CA	PP	EP	178.00	197.00	1	1	160.0	2.32	259.0
SMBJ170A	SMBJ170CA	PR	ER	189.00	209.00	1	1	170.0	2.18	275.0
SMBJ180A	SMBJ180CA	PT	ET	200.00	220.00	1	1	180.0	2.06	291.6
SMBJ190A	SMBJ190CA	PV	EV	211.00	232.00	1	1	190.0	1.95	307.8
SMBJ200A	SMBJ200CA	PW	EW	224.00	247.00	1	1	200.0	1.85	324.0

Note:

1. Suffix 'A ' denotes 5% 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℃ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Device 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)				
SMBJ220A	SMBJ220CA	PX	EX	246.00	272.00	1	1	220.0	1.69	356.0
SMBJ250A	SMBJ250CA	PZ	EZ	279.00	309.00	1	1	250.0	1.48	405.0
SMBJ300A	SMBJ300CA	QE	FE	335.00	371.00	1	1	300.0	1.23	486.0
SMBJ350A	SMBJ350CA	QG	FG	391.00	432.00	1	1	350.0	1.06	567.0
SMBJ400A	SMBJ400CA	QK	FK	447.00	494.00	1	1	400.0	0.93	648.0
SMBJ440A	SMBJ440CA	QM	FM	492.00	543.00	1	1	440.0	0.84	713.0

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