



YENYO

SMBJ SERIES

Surface Mount Transient Voltage Suppressor

Features

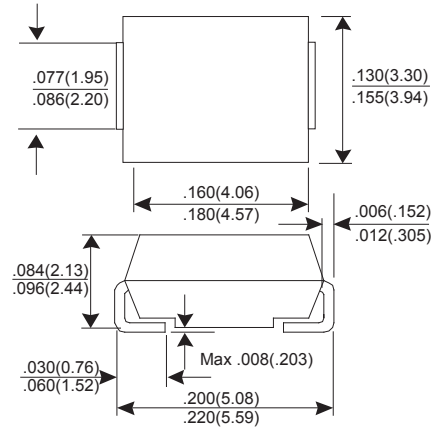
- ★ RoHS compliant and halogen-free
- ★ Reliable low cost construction utilizing molded plastic technique
- ★ Both bi-directional and uni-directional devices are available
- ★ Typical IR less than 1uA above 10V
- ★ Fast response time: typically less than 1.0 ps from 0 Volts to V_{BR} min

Mechanical Data

- ★ Case: SMB/DO-214AA, Molded plastic has UL flammability classification 94V-0
- ★ Polarity: by cathode band denotes uni-directional device none cathode band denotes bi-directional device
- ★ Weight: 0.093 gram

**Stand-off Voltage 5.0 to 440 V
Power Dissipation 600 Watts**

SMB/DO-214AA



MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

$T_A = 25^\circ\text{C}$ unless otherwise noted

PARAMTER	SYMBOL	VALUE	UNIT
Peak Pulse Power Dissipation at $T_A = 25^\circ\text{C}$ by 10/1000us waveform fig.1 (Note 1,2)	PPPM	Minimum 600	Watts
Peak Forward Surge Current, 8.3ms single Half sine-wave super imposed on rated load (Note 3)	IFSM	100	A
Steady State Power Dissipation at $T_A = 50^\circ\text{C}$	PM(AV)	5.0	Watts
Maximum Instantaneous forward voltage at 50A for unidirectional devices only (Note 4)	V_F	3.5 / 5.0	V
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	100	$^\circ\text{C/W}$
Typical Thermal Resistance Junction to Lead	$R_{\theta JL}$	20	$^\circ\text{C/W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

NOTES : (1) Non-repetitive current pulse, per fig. 3 and derated above $T_A = 25^\circ\text{C}$ per fig. 2.
 (2) Mounted on 0.2"x0.2" (5.0mmx5.0mm) copper pads to each terminal
 (3) 8.3ms single half-sine wave duty cycle= 4pulses maximum per minute(unidirectional units only)
 (4) $V_F < 3.5\text{V}$ for $V_{BR} \leq 200\text{V}$ and $V_F < 5.0\text{V}$ for $V_{BR} \geq 201\text{V}$

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Part No.	Absolute Maximum Rating (Ta=25°C)					Electrical Characteristics (Ta=25°C)				
	VRWM (V)	VBR Min (V)	VBR Max (V)	IT (mA)	IFSM (A) @8.3ms	Max Vc		IR @VRWM (uA)	Marking Code	
						(V)	Ipp(A)		UNI	BI
SMBJ5.0(c)	5.00	6.40	7.82	10	100	9.6	62.5	800	KD	AD
SMBJ5.0(c)A	5.00	6.40	7.07	10	100	9.2	65.2	800	KE	AE
SMBJ6.0(c)	6.00	6.67	8.15	10	100	11.4	52.6	800	KF	AF
SMBJ6.0(c)A	6.00	6.67	7.37	10	100	10.3	58.3	800	KG	AG
SMBJ6.5(c)	6.50	7.22	8.82	10	100	12.3	48.7	500	KH	AH
SMBJ6.5(c)A	6.50	7.22	7.98	10	100	11.2	53.6	500	KK	AK
SMBJ7.0(c)	7.00	7.78	9.51	10	100	13.3	45.1	200	KL	AL
SMBJ7.0(c)A	7.00	7.78	8.60	10	100	12.0	50.0	200	KM	AM
SMBJ7.5(c)	7.50	8.33	10.20	1	100	14.3	42.0	100	KN	AN
SMBJ7.5(c)A	7.50	8.33	9.21	1	100	12.9	46.5	100	KP	AP
SMBJ8.0(c)	8.00	8.89	10.9	1	100	15.0	40.0	50	KQ	AQ
SMBJ8.0(c)A	8.00	8.89	9.83	1	100	13.6	44.1	50	KR	AR
SMBJ8.5(c)	8.50	9.44	11.5	1	100	15.9	37.7	20	KS	AS
SMBJ8.5(c)A	8.50	9.44	10.4	1	100	14.4	41.7	20	KT	AT
SMBJ9.0(c)	9.00	10.0	12.2	1	100	16.9	35.5	10	KU	AU
SMBJ9.0(c)A	9.00	10.0	11.1	1	100	15.4	39.0	10	KV	AV
SMBJ10(c)	10.00	11.1	13.6	1	100	18.8	31.9	5	KW	AW
SMBJ10(c)A	10.00	11.1	12.3	1	100	17.0	35.3	5	KX	AX
SMBJ11(c)	11.00	12.2	14.9	1	100	20.1	29.9	1	KY	AY
SMBJ11(c)A	11.00	12.2	13.5	1	100	18.2	33.0	1	KZ	AZ
SMBJ12(c)	12.00	13.3	16.3	1	100	22.0	27.3	1	LD	BD
SMBJ12(c)A	12.00	13.3	14.7	1	100	19.9	30.2	1	LE	BE
SMBJ13(c)	13.00	14.4	17.6	1	100	23.8	25.2	1	LF	BF
SMBJ13(c)A	13.00	14.4	15.9	1	100	21.5	27.9	1	LG	BG
SMBJ14(c)	14.00	15.6	19.1	1	100	25.8	23.3	1	LH	BH
SMBJ14(c)A	14.00	15.6	17.2	1	100	23.2	25.8	1	LK	BK
SMBJ15(c)	15.00	16.7	20.4	1	100	26.9	22.3	1	LL	BL
SMBJ15(c)A	15.00	16.7	18.5	1	100	24.4	24.0	1	LM	BM
SMBJ16(c)	16.00	17.8	21.8	1	100	28.8	20.8	1	LN	BN
SMBJ16(c)A	16.00	17.8	19.7	1	100	26.0	23.1	1	LP	BP
SMBJ17(c)	17.00	18.9	23.1	1	100	30.5	19.7	1	LQ	BQ
SMBJ17(c)A	17.00	18.9	20.9	1	100	27.6	21.7	1	LR	BR
SMBJ18(c)	18.00	20.0	24.4	1	100	32.2	18.6	1	LS	BS
SMBJ18(c)A	18.00	20.0	22.1	1	100	29.2	20.5	1	LT	BT
SMBJ20(c)	20.00	22.2	27.1	1	100	35.8	16.4	1	LU	BU
SMBJ20(c)A	20.00	22.2	24.5	1	100	32.4	18.5	1	LV	BV
SMBJ22(c)	22.00	24.4	29.8	1	100	39.4	15.2	1	LW	BW
SMBJ22(c)A	22.00	24.4	26.9	1	100	35.5	16.9	1	LX	BX
SMBJ24(c)	24.00	26.7	32.6	1	100	43.0	14.0	1	LY	BY
SMBJ24(c)A	24.00	26.7	29.5	1	100	38.9	15.4	1	LZ	BZ
SMBJ26(c)	26.00	28.9	35.3	1	100	46.6	12.4	1	MD	CD
SMBJ26(c)A	26.00	28.9	31.9	1	100	42.1	14.2	1	ME	CE
SMBJ28(c)	28.00	31.1	38.0	1	100	50.0	12.0	1	MF	CF
SMBJ28(c)A	28.00	31.1	34.4	1	100	45.4	13.2	1	MG	CG
SMBJ30(c)	30.00	33.3	40.7	1	100	53.5	11.2	1	MH	CH
SMBJ30(c)A	30.00	33.3	36.8	1	100	48.4	12.4	1	MK	CK
SMBJ33(c)	33.00	36.7	44.9	1	100	59.0	10.2	1	ML	CL
SMBJ33(c)A	33.00	36.7	40.6	1	100	53.3	11.3	1	MM	CM
SMBJ36(c)	36.00	40.0	48.9	1	100	64.3	9.3	1	MN	CN
SMBJ36(c)A	36.00	40.0	44.2	1	100	58.1	10.3	1	MP	CP
SMBJ40(c)	40.00	44.4	54.3	1	100	71.4	8.4	1	MQ	CQ
SMBJ40(c)A	40.00	44.4	49.1	1	100	64.5	9.3	1	MR	CR
SMBJ43(c)	43.00	47.8	58.4	1	100	76.7	7.8	1	MS	CS
SMBJ43(c)A	43.00	47.8	52.8	1	100	69.4	8.6	1	MT	CT
SMBJ45(c)	45.00	50.0	61.1	1	100	80.3	7.5	1	MU	CU
SMBJ45(c)A	45.00	50.0	55.3	1	100	72.7	8.3	1	MV	CV

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						(V)	Ipp(A)		UNI	BI
SMBJ48(c)	48.00	53.3	65.1	1	100	85.5	7.0	1	MW	CW
SMBJ48(c)A	48.00	53.3	58.9	1	100	77.4	7.7	1	MX	CX
SMBJ51(c)	51.00	56.7	69.3	1	100	91.1	6.6	1	MY	CY
SMBJ51(c)A	51.00	56.7	62.7	1	100	82.4	7.3	1	MZ	CZ
SMBJ54(c)	54.00	60.0	73.3	1	100	96.3	6.2	1	ND	DD
SMBJ54(c)A	54.00	60.0	66.3	1	100	87.1	6.9	1	NE	DE
SMBJ58(c)	58.00	64.4	78.7	1	100	103.0	5.8	1	NF	DF
SMBJ58(c)A	58.00	64.4	71.2	1	100	93.6	6.4	1	NG	DG
SMBJ60(c)	60.00	66.7	81.5	1	100	107.0	5.6	1	NH	DH
SMBJ60(c)A	60.00	66.7	73.7	1	100	96.8	6.2	1	NK	DK
SMBJ64(c)	64.00	71.1	86.9	1	100	114.0	5.3	1	NL	DL
SMBJ64(c)A	64.00	71.1	78.6	1	100	103.0	5.8	1	NM	DM
SMBJ70(c)	70.00	77.8	95.1	1	100	125.0	4.8	1	NN	DN
SMBJ70(c)A	70.00	77.8	86.0	1	100	113.0	5.3	1	NP	DP
SMBJ75(c)	75.00	83.3	102.0	1	100	134.0	4.5	1	NQ	DQ
SMBJ75(c)A	75.00	83.3	92.1	1	100	121.0	4.9	1	NR	DR
SMBJ78(c)	78.00	86.7	106.0	1	100	139.0	4.3	1	NS	DS
SMBJ78(c)A	78.00	86.7	95.8	1	100	126.0	4.7	1	NT	DT
SMBJ85(c)	85.00	94.4	115.0	1	100	151.0	3.9	1	NU	DU
SMBJ85(c)A	85.00	94.4	104.0	1	100	137.0	4.4	1	NV	DV
SMBJ90(c)	90.00	100.0	122.0	1	100	160.0	3.8	1	NW	DW
SMBJ90(c)A	90.00	100.0	111.0	1	100	146.0	4.1	1	NX	DX
SMBJ100(c)	100.00	111.0	136.0	1	100	179.0	3.4	1	NY	DY
SMBJ100(c)A	100.00	111.0	123.0	1	100	162.0	3.7	1	NZ	DZ
SMBJ110(c)	110.00	122.0	149.0	1	100	196.0	3.0	1	PD	ED
SMBJ110(c)A	110.00	122.0	135.0	1	100	177.0	3.4	1	PE	EE
SMBJ120(c)	120.00	133.0	163.0	1	100	214.0	2.8	1	PF	EF
SMBJ120(c)A	120.00	133.0	147.0	1	100	193.0	3.1	1	PG	EG
SMBJ130(c)	130.00	144.0	176.0	1	100	231.0	2.6	1	PH	EH
SMBJ130(c)A	130.00	144.0	159.0	1	100	209.0	2.9	1	PK	EK
SMBJ150(c)	150.00	167.0	204.0	1	100	268.0	2.2	1	PL	EL
SMBJ150(c)A	150.00	167.0	185.0	1	100	243.0	2.5	1	PM	EM
SMBJ160(c)	160.00	178.0	218.0	1	100	287.0	2.1	1	PN	EN
SMBJ160(c)A	160.00	178.0	197.0	1	100	259.0	2.3	1	PP	EP
SMBJ170(c)	170.00	189.0	231.0	1	100	304.0	2.0	1	PQ	EQ
SMBJ170(c)A	170.00	189.0	209.0	1	100	275.0	2.2	1	PR	ER
SMBJ180(c)A	180.00	201.0	222.0	1	100	292.0	2.1	1	PT	ET
SMBJ200(c)A	200.00	224.0	247.0	1	100	324.0	1.9	1	PV	EV
SMBJ220(c)A	220.00	246.0	272.0	1	100	356.0	1.7	1	PX	EX
SMBJ250(c)A	250.00	279.0	309.0	1	100	405.0	1.5	1	PZ	EZ
SMBJ300(c)A	300.00	335.0	371.0	1	100	486.0	1.3	1	QE	FE
SMBJ350(c)A	350.00	391.0	432.0	1	100	567.0	1.1	1	QG	FG
SMBJ400(c)A	400.00	447.0	494.0	1	100	648.0	0.9	1	QK	FK
SMBJ440(c)A	440.00	492.0	543.0	1	100	713.0	0.9	1	QM	FM

Suffix A: 5%

Suffix C: Bi-Directional

For the bidirection SMBJ5.0CA, the maximum VBR is 7.25V.

For the bidirection typ having Vrwm of 10 volts and less, the Ir limit is doubled.

RATINGS AND CHARACTERISTIC CURVES SMBJ SERIES

FIG.1 - PULSE RATING CURVE

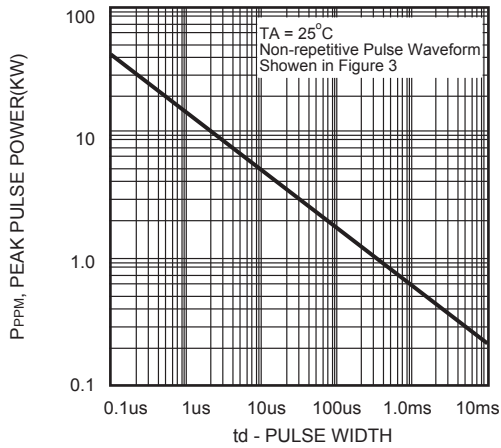


FIG.2 - PULSE DERATING CURVE

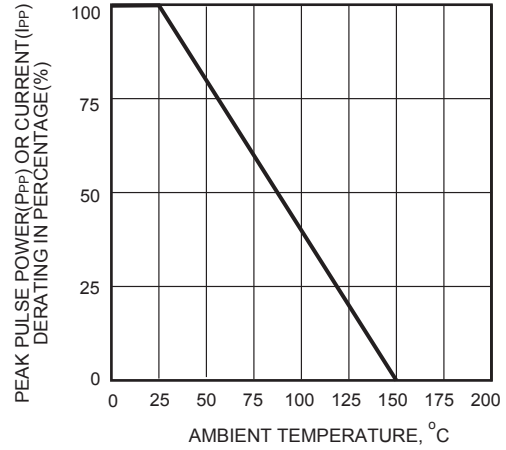


FIG.3 - PULSE WAVEFORM

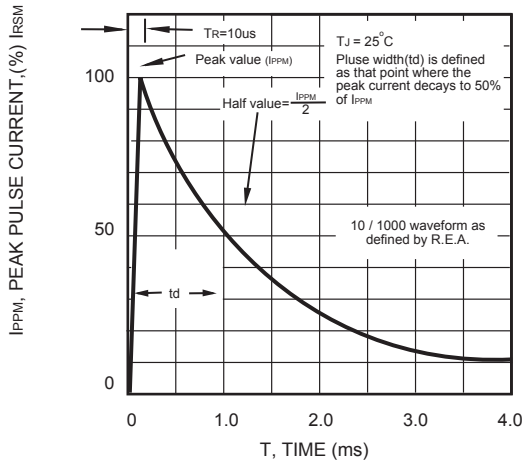


FIG.4 - TYPICAL JUNCTION CAPACITANCE

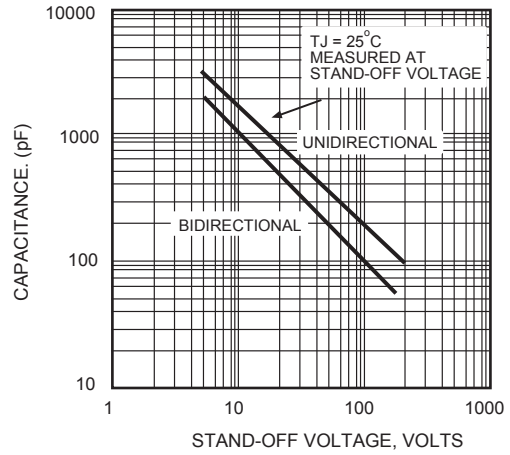


FIG.5 - STEADY STATE POWER DERATING CURVE

