

YENYO

SMBJ-A SERIES

Surface Mount Transient Voltage Suppressor

Features

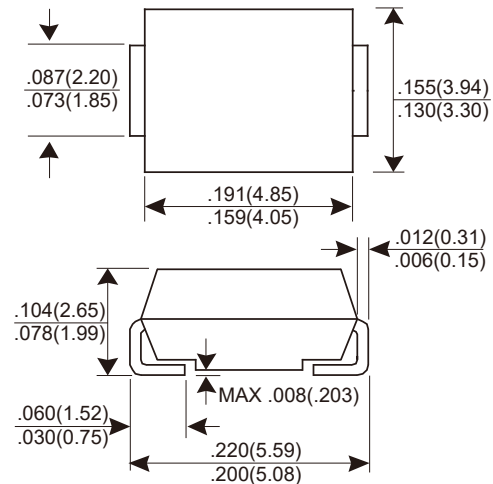
- ★ High reliability application and automotive grade AEC-Q101 qualified
- ★ 600W peak pulse power capability at 10/1000 μ s waveform, repetition rate (duty cycles):0.01%
- ★ Low leakage
- ★ Excellent clamping capability
- ★ Very fast response time
- ★ RoHS compliant
- ★ IEC-61000-4-2 ESD 30kV(Air), 30kV(Contact)
- ★ ESD protection of data lines in accordance with IEC 61000-4-2
- ★ EFT protection of data lines in accordance with IEC 61000-4-4

Mechanical Data

- ★ Case: Molded plastic, SMB/DO-214AA
- ★ Epoxy: UL 94V-0 rate flame retardant
- ★ Terminals: Solderable per MIL-STD-750, method 2026
- ★ Polarity: Color band denotes cathode end

Working Voltage 5.0 to 440 V
Peak Pulse Power 600W

SMB/DO-214AA



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND THERMAL CHARACTERISTICS

T_A = 25°C unless otherwise noted

PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation with a 10/1000 μ s waveform (Note 1,2)	P _{PPM}	600	W
Peak forward surge current, 8.3 ms single half sine-wave (Note 3)	I _{FSM}	100	A
Power dissipation on infinite heatsink at T _L =75°C	P _D	5.0	W
Maximum instantaneous forward voltage at 50A for unidirectional only (Note 4)	V _F	3.5 / 5.0	V
Typical thermal resistance junction to ambient	R _{θJA}	100	°C/W
Typical thermal resistance junction to lead	R _{θJL}	20	°C/W
Operating junction temperature range (V _R ≤ 78V)	T _J	-65 to +175	°C
Operating junction temperature range (V _R > 78V)	T _J	-65 to +150	°C
Storage temperature range	T _{STG}	-65 to +175	°C

Notes : (1) Non-repetitive current pulse, per Fig. 3 and derated above T_A=25°C per Fig. 2

(2) Mounted on copper pad area of 0.2" x 0.2" (5.0 x 5.0mm) to each terminal

(3) Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum

(4) V_F<3.5V for devices of V_{BR}<200V and V_F<5.0V for devices of V_{BR}>201V

SMBJ-A SERIES

Electrical Characteristics($T_A=25^{\circ}\text{C}$ 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)				
SMBJ5.0A-A	SMBJ5.0CA-A	KEA	AEA	6.40	7.00	10	800	5.0	65.22	9.2
SMBJ6.0A-A	SMBJ6.0CA-A	KGA	AGA	6.67	7.37	10	800	6.0	58.25	10.3
SMBJ6.5A-A	SMBJ6.5CA-A	KKA	AKA	7.22	7.98	10	500	6.5	53.57	11.2
SMBJ7.0A-A	SMBJ7.0CA-A	KMA	AMA	7.78	8.60	10	200	7.0	50.00	12.0
SMBJ7.5A-A	SMBJ7.5CA-A	KPA	APA	8.33	9.21	1	100	7.5	46.51	12.9
SMBJ8.0A-A	SMBJ8.0CA-A	KRA	ARA	8.89	9.83	1	50	8.0	44.12	13.6
SMBJ8.5A-A	SMBJ8.5CA-A	KTA	ATA	9.44	10.4	1	10	8.5	41.67	14.4
SMBJ9.0A-A	SMBJ9.0CA-A	KVA	AVA	10.0	11.1	1	5	9.0	38.96	15.4
SMBJ10A-A	SMBJ10CA-A	KXA	AXA	11.1	12.3	1	5	10	35.29	17.0
SMBJ11A-A	SMBJ11CA-A	KZA	AZA	12.2	13.5	1	1	11	32.97	18.2
SMBJ12A-A	SMBJ12CA-A	LEA	BEA	13.3	14.7	1	1	12	30.15	19.9
SMBJ13A-A	SMBJ13CA-A	LGA	BGA	14.4	15.9	1	1	13	27.91	21.5
SMBJ14A-A	SMBJ14CA-A	LKA	BKA	15.6	17.2	1	1	14	25.86	23.2
SMBJ15A-A	SMBJ15CA-A	LMA	BMA	16.7	18.5	1	1	15	24.59	24.4
SMBJ16A-A	SMBJ16CA-A	LPA	BPA	17.8	19.7	1	1	16	23.08	26.0
SMBJ17A-A	SMBJ17CA-A	LRA	BRA	18.9	20.9	1	1	17	21.74	27.6
SMBJ18A-A	SMBJ18CA-A	LTA	BT A	20.0	22.1	1	1	18	20.55	29.2
SMBJ20A-A	SMBJ20CA-A	LVA	BVA	22.2	24.5	1	1	20	18.52	32.4
SMBJ22A-A	SMBJ22CA-A	LXA	BXA	24.4	26.9	1	1	22	16.90	35.5
SMBJ24A-A	SMBJ24CA-A	LZA	BZA	26.7	29.5	1	1	24	15.42	38.9
SMBJ26A-A	SMBJ26CA-A	MEA	CEA	28.9	31.9	1	1	26	14.25	42.1
SMBJ28A-A	SMBJ28CA-A	MGA	CGA	31.1	34.4	1	1	28	13.22	45.4
SMBJ30A-A	SMBJ30CA-A	MKA	CKA	33.3	36.8	1	1	30	12.40	48.4
SMBJ33A-A	SMBJ33CA-A	MMA	CMA	36.7	40.6	1	1	33	11.26	53.3
SMBJ36A-A	SMBJ36CA-A	MPA	CPA	40.0	44.2	1	1	36	10.33	58.1
SMBJ40A-A	SMBJ40CA-A	MRA	CRA	44.4	49.1	1	1	40	9.30	64.5
SMBJ43A-A	SMBJ43CA-A	MTA	CTA	47.8	52.8	1	1	43	8.65	69.4
SMBJ45A-A	SMBJ45CA-A	MVA	CVA	50.0	55.3	1	1	45	8.25	72.7
SMBJ48A-A	SMBJ48CA-A	MXA	CXA	53.3	58.9	1	1	48	7.75	77.4
SMBJ51A-A	SMBJ51CA-A	MZA	CZA	56.7	62.7	1	1	51	7.28	82.4
SMBJ54A-A	SMBJ54CA-A	NEA	DEA	60.0	66.3	1	1	54	6.89	87.1
SMBJ58A-A	SMBJ58CA-A	NGA	DGA	64.4	71.2	1	1	58	6.41	93.6
SMBJ60A-A	SMBJ60CA-A	NKA	DKA	66.7	73.7	1	1	60	6.20	96.8
SMBJ64A-A	SMBJ64CA-A	NMA	DMA	71.1	78.6	1	1	64	5.83	103.0
SMBJ70A-A	SMBJ70CA-A	NPA	DPA	77.8	86.0	1	1	70	5.31	113.0
SMBJ75A-A	SMBJ75CA-A	NRA	DRA	83.3	92.1	1	1	75	4.96	121.0
SMBJ78A-A	SMBJ78CA-A	NTA	DTA	86.7	95.8	1	1	78	4.76	126.0
SMBJ85A-A	SMBJ85CA-A	NVA	DVA	94.4	104	1	1	85	4.38	137.0
SMBJ90A-A	SMBJ90CA-A	NXA	DXA	100	111	1	1	90	4.11	146.0
SMBJ100A-A	SMBJ100CA-A	NZA	DZA	111	123	1	1	100	3.70	162.0
SMBJ110A-A	SMBJ110CA-A	PEA	EEA	122	135	1	1	110	3.39	177.0
SMBJ120A-A	SMBJ120CA-A	PGA	EGA	133	147	1	1	120	3.11	193.0
SMBJ130A-A	SMBJ130CA-A	PKA	EKA	144	159	1	1	130	2.87	209.0
SMBJ150A-A	SMBJ150CA-A	PMA	EMA	167	185	1	1	150	2.47	243.0
SMBJ160A-A	SMBJ160CA-A	PPA	EPA	178	197	1	1	160	2.32	259.0
SMBJ170A-A	SMBJ170CA-A	PRA	ERA	189	209	1	1	170	2.18	275.0
SMBJ180A-A	SMBJ180CA-A	PTA	ETA	200	220	1	1	180	2.06	291.6
SMBJ188A-A	SMBJ188CA-A	PBA	EBA	209	231	1	1	188	1.97	304.0
SMBJ200A-A	SMBJ200CA-A	PVA	EVA	224	247	1	1	200	1.85	324.0
SMBJ220A-A	SMBJ220CA-A	PXA	EXA	246	272	1	1	220	1.69	356.0
SMBJ250A-A	SMBJ250CA-A	PZA	EZA	279	309	1	1	250	1.48	405.0
SMBJ300A-A	SMBJ300CA-A	QEA	FEA	335	371	1	1	300	1.23	486.0
SMBJ350A-A	SMBJ350CA-A	QGA	FGA	391	432	1	1	350	1.06	567.0
SMBJ400A-A	SMBJ400CA-A	QKA	FKA	447	494	1	1	400	0.93	648.0
SMBJ440A-A	SMBJ440CA-A	QMA	FMA	492	543	1	1	440	0.84	713.0

Suffix "A" denotes 5% tolerance device.

Add suffix "CA" after part number to specify Bi-directional devices.

For Bi-directional type having V_{RWM} of 10 volts and less, the I_T limit is double.

RATINGS AND CHARACTERISTICS CURVES SMBJ-A SERIES

Fig.1 - Peak Pulse Power Rating Curve

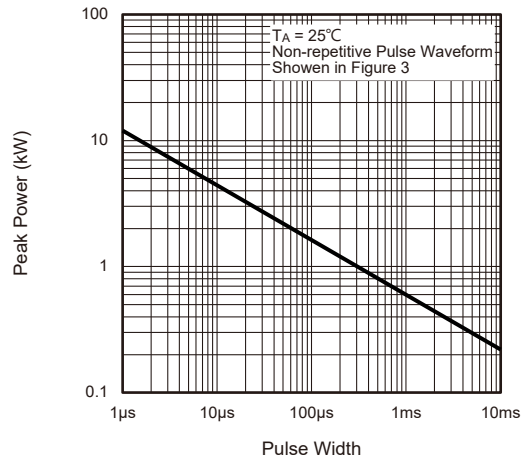


Fig.2 - Pulse Derating Curve

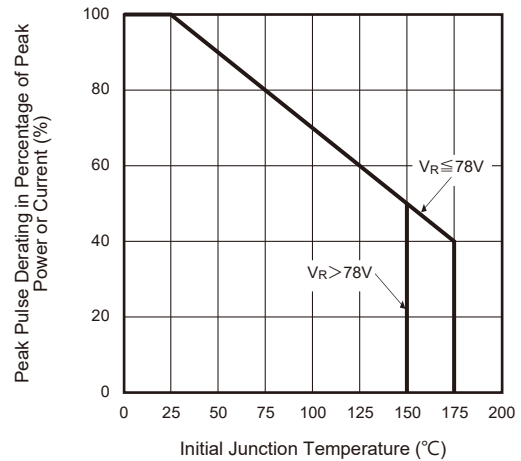


Fig.3 - Pulse Waveform

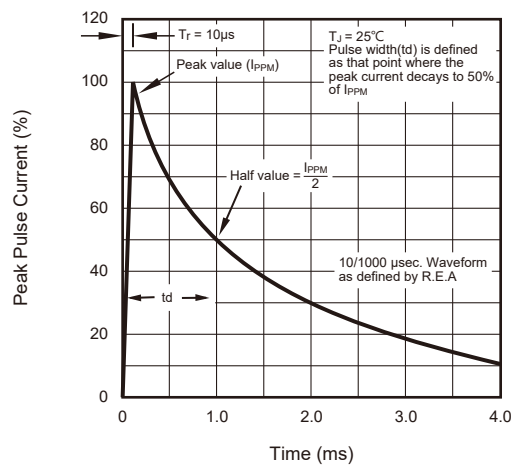


Fig.4 - Typical Junction Capacitance

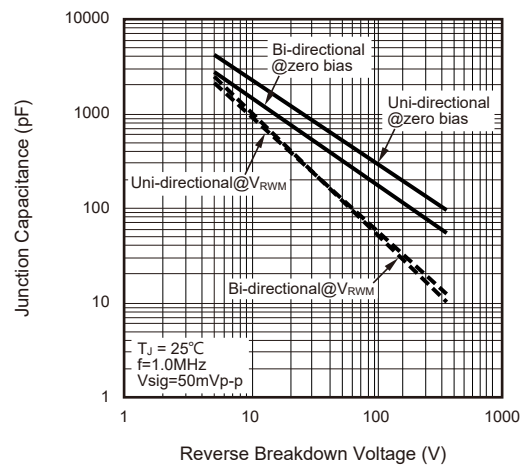


Fig.5 - Steady State Power Derating Curve

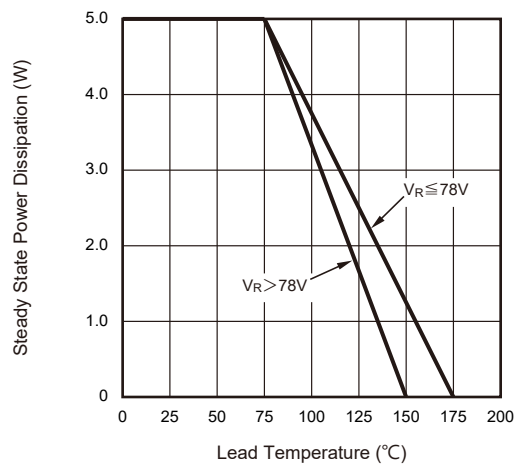


Fig.6 - Maximum Non-Repetitive Surge Current

