

TECHNICAL SPECIFICATIONS OF SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

REVERSE VOLTAGE - 5.0 to 440Volts
 POWER DISSIPATIO - 600 Watts

FEATURES

- For surface mounted applications in order to optimize board space
- Low profile space
- Glass passivated chip
- Low inductance
- Excellent clamping capability
- Very fast response time
- Typical I_D less than $1\mu A$ at V_{WM}
- 600 W peak pulse power capability with a 10/1000 μs waveform
- Component in accordance to RoHS 2002/95/1 and WEEE 2002/96/EC

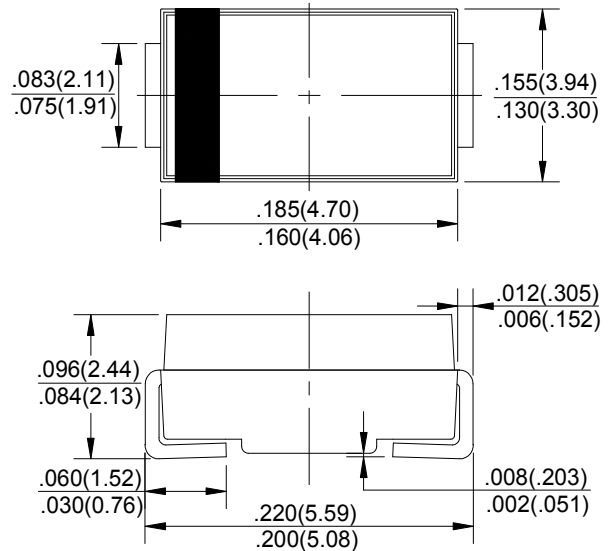
MECHANICAL DATA

- Case : JEDEC DO-214AA molded plastic body over glass passivated chip
- Epoxy:UL 94V-0 rate flame retardant
- Terminals:Solder plated,solderable per MIL-STD-750,Method 2026
- Polarity:For uni-directional types the band by laser denotes the cathode, which is positive with respect to the anode under normal TVS operation

DEVICES FOR BIDIRECTIONAL APPLICATIONS

- For bi-directional devices, use suffix C or CA (e.g.SMBJ10C, SMBJ10CA).Electrical characteristics apply in both directions.

SMB(DO-214AA)



Dimensions in inches and(millimeters)

MAXIMUM RATINGS AND THERMAL CHARACTERISTICS ($T_A = 25^\circ C$ unless otherwise noted)

CHARACTERISTICS	SYMBOL	VALUE	UNIT
Peak pulse power dissipation with a 10/1000 μs waveform (see fig. 1)	P _{PPM}	600	W
Peak pulse current with a waveform (see fig. 3 , single pulse)	I _{PPM}	See Next Table	A
Peak forward surge current 8.3ms single half sine-wave uni-directional only	I _{FSM}	100	A
Typical thermal resistance, junction to ambient(1)	R _{θJA}	100	°C/W
Typical thermal resistance, junction to lead(1)	R _{θJL}	20	°C/W
Operating Temperature Range	T _J	-55 to + 150	°C
Storage Temperature Range	T _{STG}	-55 to + 150	°C

NOTES:1. Mounted on P.C.B. with 0.28 x 0.28" (7.0 x 7.0mm) copper pad areas.

2.The typical data above is for reference only(典型值仅供参考).

Fig. 1 -- Peak Pulse Power Rating Curve

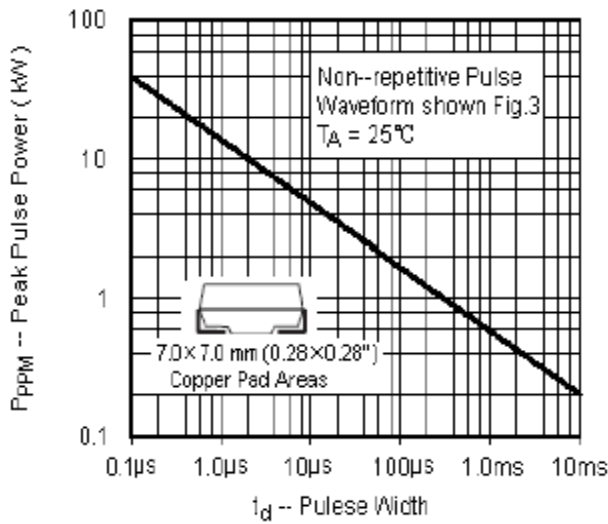


Fig.2-- Pulse Derating Curve

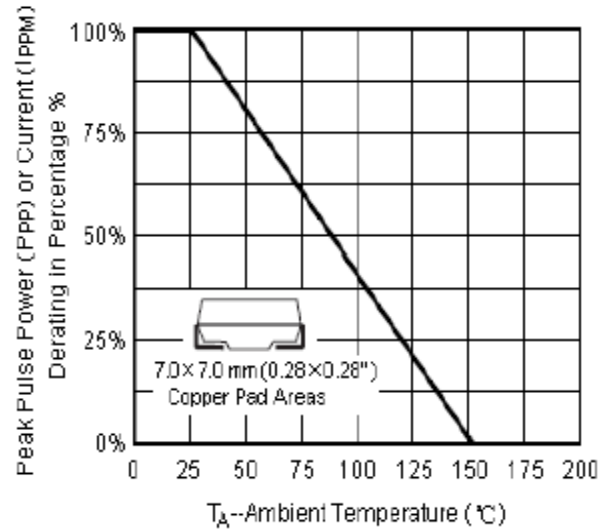


Fig. 3 -- Pulse Waveform

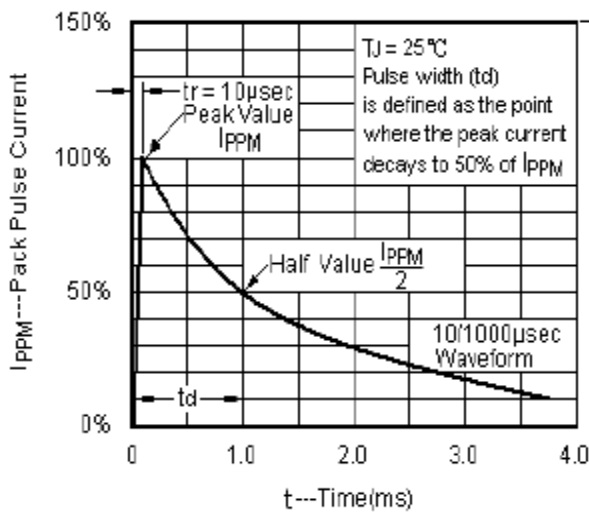


Fig. 4 -- Typical Junction Capacitance

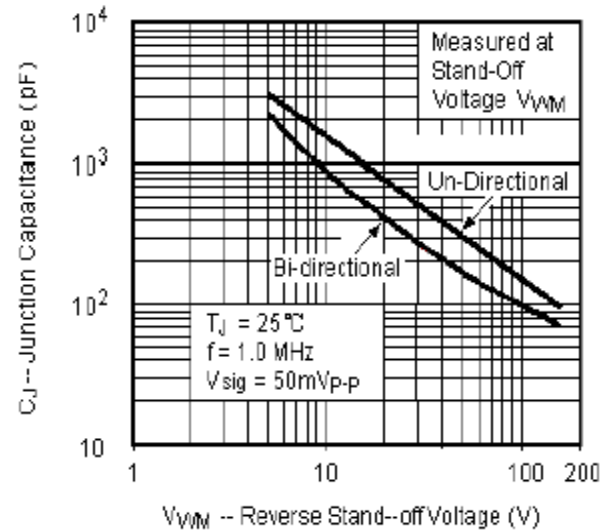


Fig. 5 -- Typical Transient Thermal Impedance

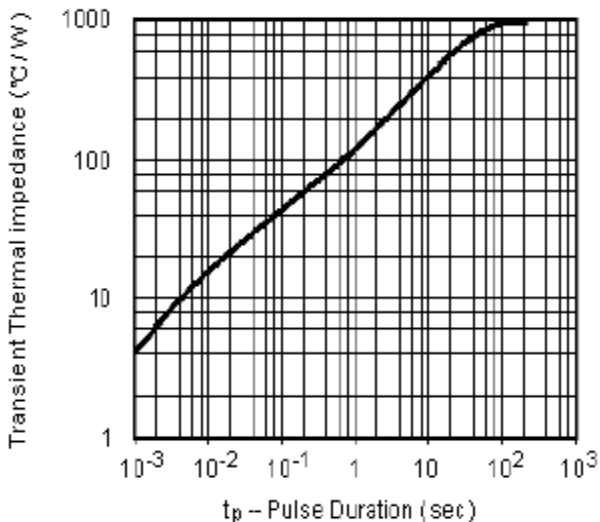
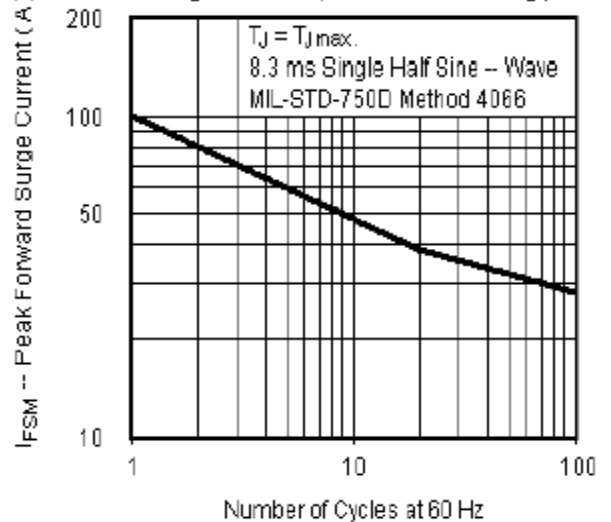


Fig. 6 -- Maximum Non-Repetitive Forward Surge Current (Uni-Directional Only)





SMBJ SERIES

Device Type	STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE at $I_T^{(2)}$ $V_{(BR)} (V)$		TEST CURRENT	MAXIMUM CLAMPING VOLTAGE at I_{PPM}	Maximum Peak Pulse Surge Current (3)	Maximum Reverse Leakage at $V_{WM}^{(4)}$
		MIN.	MAX.				
UNI	$V_{WM}(V)$	MIN.	MAX.	I_T (mA)	V_C (V)	I_{PPM} (A)	I_D (μ A)
SMBJ5.0	5.0	6.40	7.82	10	9.6	62.5	800
SMBJ5.0A	5.0	6.40	7.07	10	9.2	65.2	800
SMBJ6.0	6.0	6.67	8.15	10	11.4	52.6	800
SMBJ6.0A	6.0	6.70	7.37	10	10.3	58.3	800
SMBJ6.5	6.5	7.22	8.82	10	12.3	48.7	500
SMBJ6.5A	6.5	7.22	7.98	10	11.2	53.6	500
SMBJ7.0	7.0	7.78	9.51	10	13.3	45.1	200
SMBJ7.0A	7.0	7.78	8.60	10	12.0	50.0	200
SMBJ7.5	7.5	8.33	10.2	1	14.3	42.0	100
SMBJ7.5A	7.5	8.33	9.21	1	12.9	46.5	100
SMBJ8.0	8.0	8.89	10.9	1	15.0	40.0	50
SMBJ8.0A	8.0	8.89	9.83	1	13.6	44.1	50
SMBJ8.5	8.5	9.44	11.5	1	15.9	37.7	10
SMBJ8.5A	8.5	9.44	10.4	1	14.4	41.7	10
SMBJ9.0	9.0	10.0	12.2	1	16.9	35.5	1
SMBJ9.0A	9.0	10.0	11.1	1	15.4	39.0	1
SMBJ10	10	11.1	13.6	1	18.8	31.9	1
SMBJ10A	10	11.1	12.3	1	17.0	35.3	1
SMBJ11	11	12.2	14.9	1	20.1	29.9	1
SMBJ11A	11	12.2	13.5	1	18.2	33.0	1
SMBJ12	12	13.3	16.3	1	22.0	27.3	1
SMBJ12A	12	13.3	14.7	1	19.9	30.2	1
SMBJ13	13	14.4	17.6	1	23.8	25.2	1
SMBJ13A	13	14.4	15.9	1	21.5	27.9	1
SMBJ14	14	15.6	19.1	1	25.8	23.3	1
SMBJ14A	14	15.6	17.2	1	23.2	25.8	1
SMBJ15	15	16.7	20.4	1	26.9	22.3	1
SMBJ15A	15	16.7	18.5	1	24.4	24.0	1
SMBJ16	16	17.8	21.8	1	28.8	20.8	1
SMBJ16A	16	17.8	19.7	1	26.0	23.1	1
SMBJ17	17	18.9	23.1	1	30.5	19.7	1
SMBJ17A	17	18.9	20.9	1	27.6	21.7	1
SMBJ18	18	20.0	24.4	1	32.2	18.6	1
SMBJ18A	18	20.0	22.1	1	29.2	20.5	1
SMBJ20	20	22.2	27.1	1	35.8	16.7	1
SMBJ20A	20	22.2	24.5	1	32.4	18.5	1
SMBJ22	22	24.4	29.8	1	39.4	15.2	1
SMBJ22A	22	24.4	26.9	1	35.5	16.9	1
SMBJ24	24	26.7	32.6	1	43.0	14.0	1
SMBJ24A	24	26.7	29.5	1	38.9	15.4	1
SMBJ26	26	28.9	35.3	1	46.6	12.4	1
SMBJ26A	26	28.9	31.9	1	42.1	14.2	1
SMBJ28	28	31.1	38.0	1	50.0	12.0	1
SMBJ28A	28	31.1	34.4	1	45.4	13.2	1
SMBJ30	30	33.3	40.7	1	53.5	11.2	1
SMBJ30A	30	33.3	36.8	1	48.4	12.4	1
SMBJ33	33	36.7	44.9	1	59.0	10.2	1
SMBJ33A	33	36.7	40.6	1	53.3	11.3	1
SMBJ36	36	40.0	48.9	1	64.3	9.3	1
SMBJ36A	36	40.0	44.2	1	58.1	10.3	1



SMBJ SERIES

Device Type	STAND-OFF VOLTAGE	BREAKDOWN VOLTAGE at $I_T^{(2)}$ $V_{(BR)}$ (V)		TEST CURRENT	MAXIMUM CLAMPING VOLTAGE at I_{PPM}	Maximum Peak Pulse Surge Current ⁽³⁾	Maximum Reverse Leakage at $V_{WM}^{(4)}$
		UNI	$V_{WM}(V)$				
SMBJ40	40	44.40	54.3	1	71.4	8.4	1
SMBJ40A	40	44.40	49.1	1	64.5	9.3	1
SMBJ43	43	47.80	58.4	1	76.7	7.8	1
SMBJ43A	43	47.80	52.8	1	69.4	8.6	1
SMBJ45	45	50.00	61.1	1	80.3	7.5	1
SMBJ45A	45	50.00	55.3	1	72.7	8.3	1
SMBJ48	48	53.30	65.1	1	85.5	7.0	1
SMBJ48A	48	53.30	58.9	1	77.4	7.7	1
SMBJ51	51	56.70	69.3	1	91.1	6.6	1
SMBJ51A	51	56.70	62.7	1	82.4	7.3	1
SMBJ54	54	60.00	73.3	1	96.3	6.2	1
SMBJ54A	54	60.00	66.3	1	87.1	6.9	1
SMBJ58	58	64.40	78.7	1	103	5.8	1
SMBJ58A	58	64.40	71.2	1	93.6	6.4	1
SMBJ60	60	66.7	81.5	1	107	5.6	1
SMBJ60A	60	66.7	73.7	1	96.8	6.2	1
SMBJ64	64	71.1	86.9	1	114	5.3	1
SMBJ64A	64	71.1	78.6	1	103	5.8	1
SMBJ70	70	77.8	95.1	1	125	4.8	1
SMBJ70A	70	77.8	86.0	1	113	5.3	1
SMBJ75	75	83.3	102	1	134	4.5	1
SMBJ75A	75	83.3	92.1	1	121	4.9	1
SMBJ78	78	86.7	106	1	139	4.3	1
SMBJ78A	78	86.7	95.8	1	126	4.7	1
SMBJ85	85	94.4	115	1	151	3.9	1
SMBJ85A	85	94.4	104	1	137	4.4	1
SMBJ90	90	100	122	1	160	3.8	1
SMBJ90A	90	100	111	1	146	4.1	1
SMBJ100	100	111	136	1	179	3.4	1
SMBJ100A	100	111	123	1	162	3.7	1
SMBJ110	110	122	149	1	196	3.0	1
SMBJ110A	110	122	135	1	177	3.4	1
SMBJ120	120	133	163	1	214	2.8	1
SMBJ120A	120	133	147	1	193	3.1	1
SMBJ130	130	144	176	1	231	2.6	1
SMBJ130A	130	144	159	1	209	2.9	1
SMBJ150	150	167	204	1	268	2.2	1
SMBJ150A	150	167	185	1	243	2.5	1
SMBJ160	160	178	218	1	287	2.1	1
SMBJ160A	160	178	197	1	259	2.3	1
SMBJ170	170	189	231	1	304	2.0	1
SMBJ170A	170	189	209	1	275	2.2	1
SMBJ180A	180	201	222	1	292	2.1	1
SMBJ188	188	209	255	1	344	1.7	1
SMBJ188A	188	209	231	1	328	2.0	1
SMBJ200A	200	224	247	1	324	1.9	1
SMBJ220A	220	246	272	1	356	1.7	1
SMBJ250A	250	279	309	1	405	1.5	1
SMBJ300A	300	335	371	1	486	1.3	1
SMBJ350A	350	391	432	1	567	1.1	1
SMBJ400A	400	447	494	1	648	0.9	1
SMBJ440A	440	492	543	1	713	0.9	1

Note 1: Marking is same as part number.

Note 2: Pulse test : $T_p \leq 50$ ms.

Note 3: Surge current waveform Per Fig. 3 and derate Per Fig. 2.

Note 4: For bi-directional types with V_{WM} of 10 V and less, the I_D limit is doubled

Note 5: $V_F = 3.5$ V at $I_F = 25$ A (uni-directional only)