V. Transient Voltage Suppressor

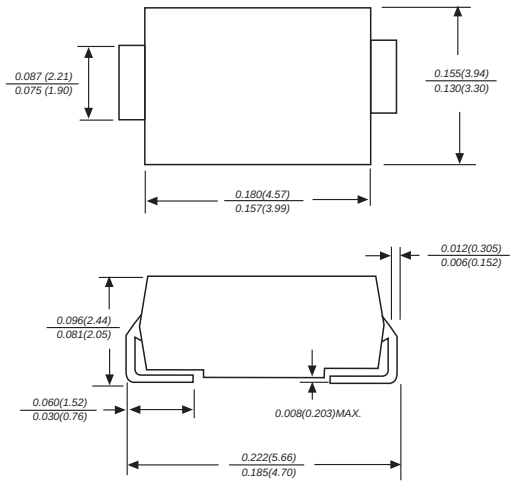
1000W Surface Mount TVS (Reverse Stand-off Voltage: 5.0~480 Volts)
SMB10J Series (Package: SMB (DO-214AA))

FEATURES

- Glass passivated chip
- 1000W peak pulse power capability with a 10/1000μs waveform, repetitive rate (duty cycle): 0.01%
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard

MECHANICAL DATA

- Case : Molded plastic
- Lead : Solderable per MIL-STD-750, Method 2026
- Epoxy : UL 94V-0 rate flame retardant
- Polarity : Color band denotes cathode end except Bipolar
- Mounting position : Any



Case: SMB
Dimensions in inches and (millimetres)

Devices for Bi-Directional Applications

For bi-directional devices use suffix “CA” for types SMB10J5.0CA thru SMB10J480CA (e.g. SMB10J28CA)
Electrical characteristics apply in both directions.

Maximum Ratings, Thermal & Electrical Characteristics

(Ratings at 25℃ ambient temperature unless otherwise specified)

Ratings	Symbol	Value	Units
Peak power dissipation with a 10/1000μs waveform(1)	P_{PPM}	1000	Watts
Peak pulse current with a 10/1000μs waveform(1)	I_{PPM}	See next table	Amps
Power dissipation on infinite heatsink at T_L = 75℃	P_D	5.0	Watts
Peak forward surge current, 8.3ms single half sine-wave unidirectional only(2)	I_{FSM}	100	Amps
Maximum instantaneous forward voltage at 50A for unidirectional only(3)	V_F	3.5/6.5	Volts
Operating junction and storage temperature range	Tj, Tstg	-55 to +150	℃

Note:
1. Non-repetitive current pulse per Fig.5 and derated above Ta = 25℃ per Fig.1
2. Measured on 8.3ms 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<6.5V for devices of $V_{(BR)}$>201V

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Device Type	Device Marking Code			Reverse Stand-off Voltage	Breakdown Voltage $V_{(BR)}$ @ I_T		Test Current	Max. Clamping Voltage @ I_{PPM}	Max. Peak Pulse Current	Max. Reverse Leakage @ V_{RWM}
	Option 1	Option 2								
	Full Part Number	UNI-	BI-	V_{RWM} (V)	Min (V)	Max (V)	I_T (mA)	V_C Max.(V)	I_{PPM} (A)	I_R (µA)
SMB10J5.0(C)A	Full PN	KKE	KAE	5.0	6.40	7.00	10	9.2	108.83	800
SMB10J6.0(C)A	Full PN	KKG	KAG	6.0	6.67	7.37	10	10.3	97.17	800
SMB10J6.5(C)A	Full PN	KKK	KAK	6.5	7.22	7.98	10	11.2	89.33	500
SMB10J7.0(C)A	Full PN	KKM	KAM	7.0	7.78	8.60	10	12.0	83.33	200
SMB10J7.5(C)A	Full PN	KKP	KAP	7.5	8.33	9.21	1	12.9	77.67	100
SMB10J8.0(C)A	Full PN	KKR	KAR	8.0	8.89	9.83	1	13.6	73.67	50
SMB10J8.5(C)A	Full PN	KKT	KAT	8.5	9.44	10.40	1	14.4	69.50	20
SMB10J9.0(C)A	Full PN	KKV	KAV	9.0	10.00	11.10	1	15.4	65.00	10
SMB10J10(C)A	Full PN	KKX	KAX	10.0	11.10	12.30	1	17.0	58.83	5
SMB10J11(C)A	Full PN	KKZ	KAZ	11.0	12.20	13.50	1	18.2	55.00	1
SMB10J12(C)A	Full PN	KLE	KBE	12.0	13.30	14.70	1	19.9	50.33	1
SMB10J13(C)A	Full PN	KLG	KBG	13.0	14.40	15.90	1	21.5	46.67	1
SMB10J14(C)A	Full PN	KLK	KBK	14.0	15.60	17.20	1	23.2	43.17	1
SMB10J15(C)A	Full PN	KLM	KBM	15.0	16.70	18.50	1	24.4	41.00	1
SMB10J16(C)A	Full PN	KLP	KBP	16.0	17.80	19.70	1	26.0	38.50	1
SMB10J17(C)A	Full PN	KLR	KBR	17.0	18.90	20.90	1	27.6	36.33	1
SMB10J18(C)A	Full PN	KLT	KBT	18.0	20.00	22.10	1	29.2	34.33	1
SMB10J20(C)A	Full PN	KLV	KBV	20.0	22.20	24.50	1	32.4	31.00	1
SMB10J22(C)A	Full PN	KLX	KBX	22.0	24.40	26.90	1	35.5	28.17	1
SMB10J24(C)A	Full PN	KLZ	KBZ	24.0	26.70	29.50	1	38.9	25.83	1
SMB10J26(C)A	Full PN	KME	KCE	26.0	28.90	31.90	1	42.1	23.83	1
SMB10J28(C)A	Full PN	KMG	KCG	28.0	31.10	34.40	1	45.4	22.17	1
SMB10J30(C)A	Full PN	KMK	KCK	30.0	33.50	36.80	1	48.4	20.67	1
SMB10J33(C)A	Full PN	KMM	KCM	33.0	36.70	40.60	1	53.3	18.83	1
SMB10J36(C)A	Full PN	KMP	KCP	36.0	40.00	44.20	1	58.1	17.33	1
SMB10J40(C)A	Full PN	KMR	KCR	40.0	44.40	49.10	1	64.5	15.50	1
SMB10J43(C)A	Full PN	KMT	KCT	43.0	47.80	52.80	1	69.4	14.50	1
SMB10J45(C)A	Full PN	KMV	KCV	45.0	50.00	55.30	1	72.7	13.83	1
SMB10J48(C)A	Full PN	KMX	KCX	48.0	53.30	58.90	1	77.4	13.00	1
SMB10J51(C)A	Full PN	KMZ	KCZ	51.0	56.70	62.70	1	82.4	12.17	1
SMB10J54(C)A	Full PN	KNE	KDE	54.0	60.00	66.30	1	87.1	11.50	1
SMB10J58(C)A	Full PN	KNG	KDG	58.0	64.40	71.20	1	93.6	10.83	1
SMB10J60(C)A	Full PN	KNK	KDK	60.0	66.70	73.70	1	96.8	10.33	1
SMB10J64(C)A	Full PN	KNM	KDM	64.0	71.10	78.60	1	103.0	9.83	1
SMB10J70(C)A	Full PN	KNP	KDP	70.0	77.80	86.00	1	113.0	8.83	1
SMB10J75(C)A	Full PN	KNR	KDR	75.0	83.30	92.10	1	121.0	8.33	1
SMB10J78(C)A	Full PN	KNT	KDT	78.0	86.70	95.80	1	126.0	8.00	1
SMB10J85(C)A	Full PN	KNV	KDV	85.0	94.40	104.0	1	137.0	7.33	1
SMB10J90(C)A	Full PN	KNX	KDX	90.0	100.0	111.0	1	146.0	6.83	1
SMB10J100(C)A	Full PN	KNZ	KDZ	100.0	111.0	123.0	1	162.0	6.17	1
SMB10J110(C)A	Full PN	KPE	KEE	110.0	122.0	135.0	1	177.0	5.67	1
SMB10J120(C)A	Full PN	KPG	KEG	120.0	133.0	147.0	1	193.0	5.17	1
SMB10J130(C)A	Full PN	KPK	KEK	130.0	144.0	159.0	1	209.0	4.83	1
SMB10J150(C)A	Full PN	KPM	KEM	150.0	167.0	185.0	1	243.0	4.17	1
SMB10J160(C)A	Full PN	KPP	KEP	160.0	178.0	197.0	1	259.0	3.83	1
SMB10J170(C)A	Full PN	KPR	KER	170.0	189.0	209.0	1	275.0	3.67	1
SMB10J180(C)A	Full PN	KPT	KET	180.0	201.0	222.0	1	292.0	3.50	1
SMB10J190(C)A	Full PN	KPA	KEC	190.0	209.0	243.0	1	308.0	3.33	1
SMB10J200(C)A	Full PN	KPV	KEV	200.0	224.0	247.0	1	324.0	3.17	1
SMB10J210(C)A	Full PN	KPB	KED	210.0	231.0	268.0	1	340.0	3.00	1
SMB10J220(C)A	Full PN	KPX	KEX	220.0	246.0	272.0	1	356.0	2.83	1
SMB10J250(C)A	Full PN	KPZ	KEZ	250.0	279.0	309.0	1	405.0	2.50	1
SMB10J300(C)A	Full PN	KQE	KFE	300.0	335.0	371.0	1	486.0	2.17	1
SMB10J350(C)A	Full PN	KQG	KFG	350.0	391.0	432.0	1	567.0	1.83	1
SMB10J400(C)A	Full PN	KQK	KFK	400.0	447.0	494.0	1	648.0	1.50	1
SMB10J440(C)A	Full PN	KQM	KFM	440.0	492.0	543.0	1	713.0	1.50	1
SMB10J480(C)A	Full PN	KQP	KFP	480.0	536.0	593.0	1	750.0	1.33	1

Ratings and Characteristic Curves of SMB10J Series

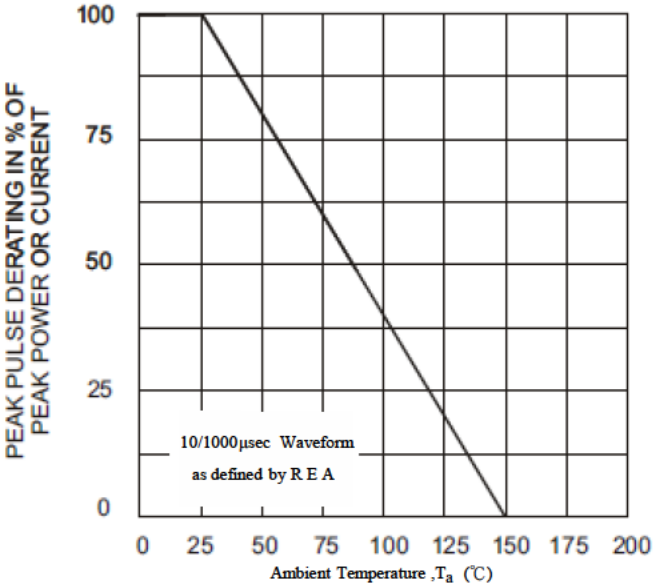

Fig. 1 - Pulse Derating Curve

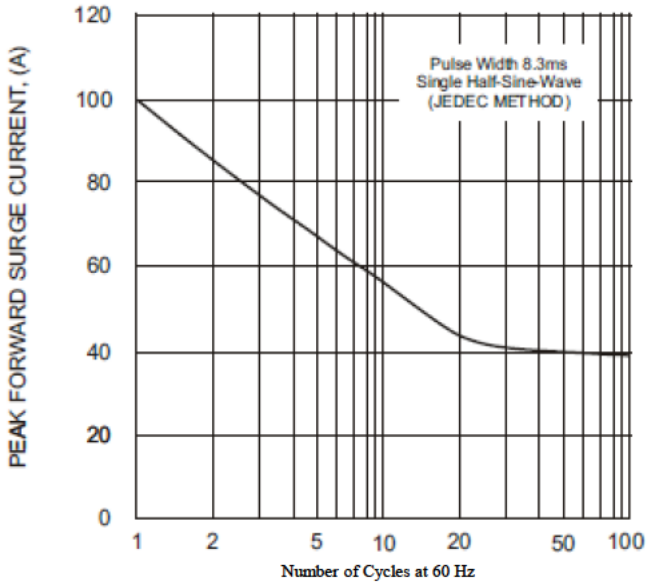

Fig. 2 - Maximum Non-Repetitive Surge Current

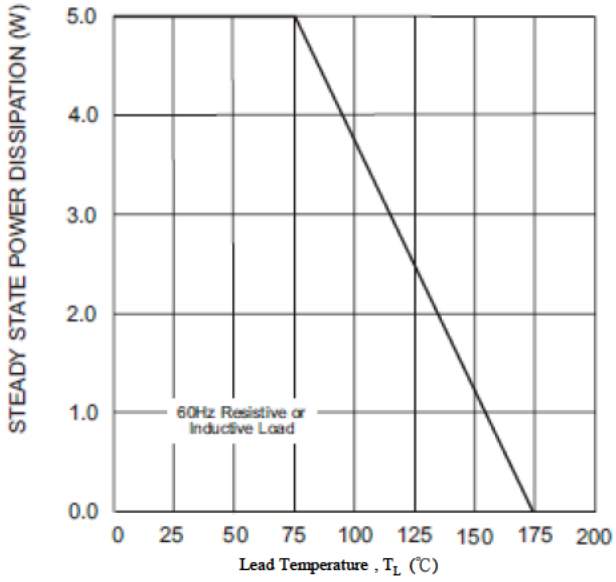

Fig. 3 - Steady State Power Derating Curve

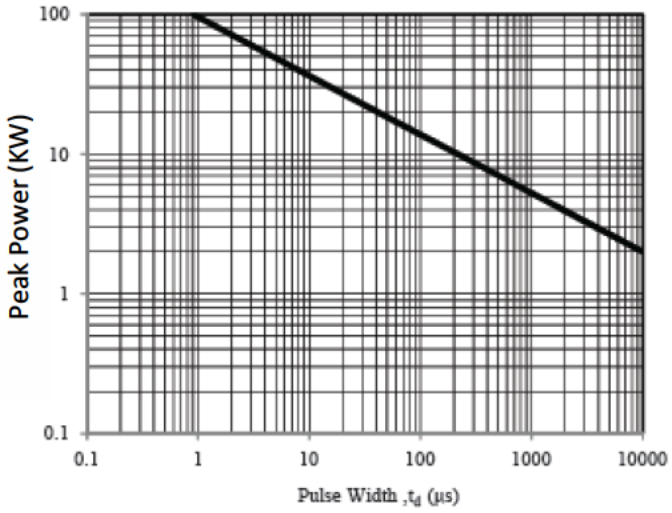

Fig. 4 - Peak Pulse Power Rating Curve

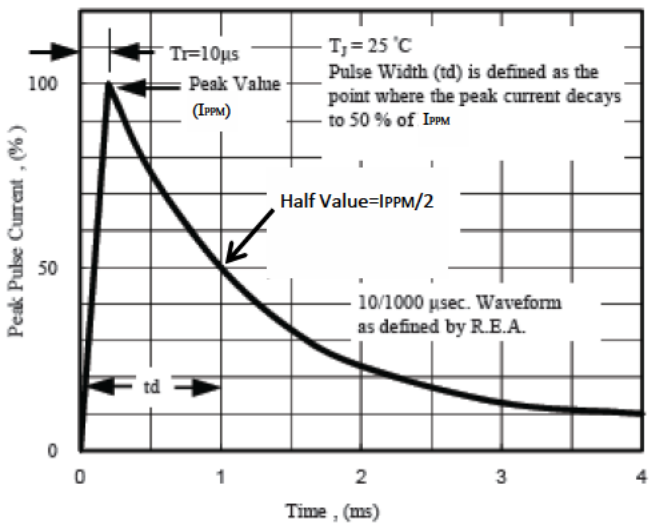

Fig. 5 - Pulse Waveform

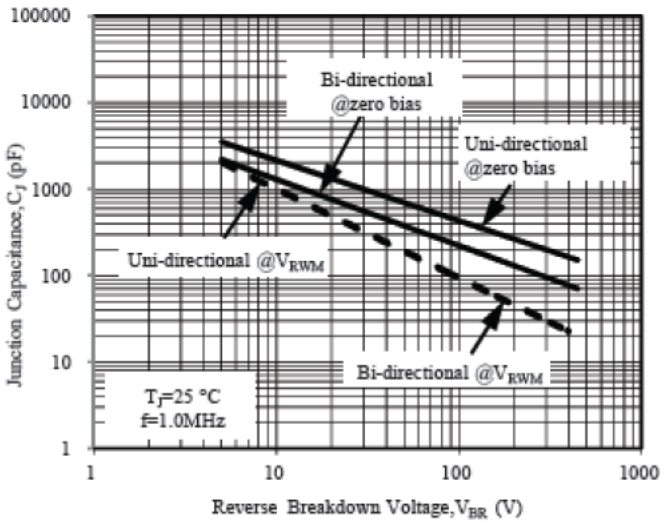

Fig. 6 - Typical Junction Capacitance