SMB

Features

- P_{PP} 600W
- V_{RWM} 5.0V- 440V
- Glass passivated chip

Applications

- Clamping Voltage

Bi-directional

Uni-direction

Limiting values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Peak pulse power dissipation	P_{PPM}	W	with a 10/1000us waveform	600
Peak pulse current (1)	I_{PPM}	A	with a 10/1000us waveform	See Next Table
Power dissipation	P_D	W	On infinite heat sink at T_L=75℃	5.0
Peak forward surge current(2)	I_{FSM}	A	8.3 ms single half sine-wave unidirectional only	100
Operatingjunction and storage temperature range	T_J,T_{STG}	℃		-55 to +150

Electrical Characteristics（Ta=25℃ Unless otherwise specified）

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage (3)	V_F	V	at 50A for unidirectional only	3.5/5.0
Thermal resistance	$R_{\theta JL}$	℃/W	junction to lead	20
	$R_{\theta JA}$	℃/W	junction to ambient， L_{Lead} = 10 mm	100

Notes:

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

(2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal

(3) VF<3.5V for devices of VBR<200V and VF<5.0V for devices of VBR>201V

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Number UNI		Number BI		Breakdown Voltage V_{BR}@ I_T			I_R @ V_{WM} Reverse Leakage I_R (μA)	V_{RWM} Working Peak Reverse Voltage V_{RWM} (V)	Reverse Surge Current IPP (A)	Clamping Voltage Vc @ I_{PP} (V)
				Min(V)	Max (V)	IT(1)(mA)				
SMBJ5.0A	KE	SMBJ5.0CA	AE	6.40	7.07	10	800	5.0	65.2	9.2
SMBJ6.0A	KG	SMBJ6.0CA	AG	6.67	7.37	10	800	6.0	58.3	10.3
SMBJ6.5A	KK	SMBJ6.5CA	AK	7.22	7.98	10	500	6.5	53.6	11.2
SMBJ7.0A	KM	SMBJ7.0CA	AM	7.78	8.60	10	200	7.0	50.0	12.0
SMBJ7.5A	KP	SMBJ7.5CA	AP	8.33	9.21	1.0	100	7.5	46.5	12.9
SMBJ8.0A	KR	SMBJ8.0CA	AR	8.89	9.83	1.0	50	8.0	44.1	13.6
SMBJ8.5A	KT	SMBJ8.5CA	AT	9.44	10.4	1.0	10	8.5	41.7	14.4
SMBJ9.0A	KV	SMBJ9.0CA	AV	10.00	11.10	1.0	5.0	9.0	39.0	15.4
SMBJ10A	KX	SMBJ10CA	AX	11.10	12.30	1.0	5.0	10.0	35.3	17.0
SMBJ11A	KZ	SMBJ11CA	AZ	12.20	13.50	1.0	5.0	11.0	33.0	18.2
SMBJ12A	LE	SMBJ12CA	BE	13.30	14.70	1.0	5.0	12.0	30.2	19.9
SMBJ13A	LG	SMBJ13CA	BG	14.40	15.90	1.0	5.0	13.0	27.9	21.5
SMBJ14A	LK	SMBJ14CA	BK	15.60	17.20	1.0	5.0	14.0	25.9	23.2
SMBJ15A	LM	SMBJ15CA	BM	16.70	18.50	1.0	5.0	15.0	24.6	24.4
SMBJ16A	LP	SMBJ16CA	BP	17.80	19.70	1.0	5.0	16.0	23.1	26.0
SMBJ17A	LR	SMBJ17CA	BR	18.90	20.90	1.0	5.0	17.0	21.7	27.6
SMBJ18A	LT	SMBJ18CA	BT	20.00	22.10	1.0	5.0	18.0	20.5	29.2
SMBJ20A	LV	SMBJ20CA	BV	22.20	24.50	1.0	5.0	20.0	18.5	32.4
SMBJ22A	LX	SMBJ22CA	BX	24.40	26.90	1.0	5.0	22.0	16.9	35.5
SMBJ24A	LZ	SMBJ24CA	BZ	26.70	29.50	1.0	5.0	24.0	15.4	38.9
SMBJ26A	ME	SMBJ26CA	CE	28.90	31.90	1.0	5.0	26.0	14.3	42.1
SMBJ28A	MG	SMBJ28CA	CG	31.10	34.40	1.0	5.0	28.0	13.2	45.4
SMBJ30A	MK	SMBJ30CA	CK	33.30	36.80	1.0	5.0	30.0	12.4	48.4
SMBJ33A	MM	SMBJ33CA	CM	36.70	40.60	1.0	5.0	33.0	11.3	53.3
SMBJ36A	MP	SMBJ36CA	CP	40.00	44.20	1.0	5.0	36.0	10.3	58.1
SMBJ40A	MR	SMBJ40CA	CR	44.40	49.10	1.0	5.0	40.0	9.3	64.5
SMBJ43A	MT	SMBJ43CA	CT	47.80	52.80	1.0	5.0	43.0	8.6	69.4
SMBJ45A	MV	SMBJ45CA	CV	50.00	55.30	1.0	5.0	45.0	8.3	72.7
SMBJ48A	MX	SMBJ48CA	CX	53.30	58.90	1.0	5.0	48.0	7.8	77.4
SMBJ51A	MZ	SMBJ51CA	CZ	56.70	62.70	1.0	5.0	51.0	7.3	82.4
SMBJ54A	NE	SMBJ54CA	DE	60.00	66.30	1.0	5.0	54.0	6.9	87.1
SMBJ58A	NG	SMBJ58CA	DG	64.40	71.20	1.0	5.0	58.0	6.4	93.6
SMBJ60A	NK	SMBJ60CA	DK	66.70	73.70	1.0	5.0	60.0	6.2	96.8
SMBJ64A	NM	SMBJ64CA	DM	71.10	78.60	1.0	5.0	64.0	5.8	103.0
SMBJ70A	NP	SMBJ70CA	DP	77.80	86.00	1.0	5.0	70.0	5.3	113.0
SMBJ75A	NR	SMBJ75CA	DR	83.30	92.10	1.0	5.0	75.0	5.0	121.0
SMBJ78A	NT	SMBJ78CA	DT	86.70	95.80	1.0	5.0	78.0	4.8	126.0

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Number UNI		Number BI		Breakdown Voltage V_{BR}@I_T			I_R @ V_{WM} Reverse Leakage I_R (μA)	V_{RWM} Working Peak Reverse Voltage V_{RWM} (V)	Reverse Surge Current IPP (A)	Clamping Voltage Vc @ I_{PP} (V)
				Min(V)	Max (V)	IT(1)(mA)				
SMBJ85A	NV	SMBJ85CA	DV	94.40	104.00	1.0	5.0	85.0	4.4	137.0
SMBJ90A	NX	SMBJ90CA	DX	100.00	111.00	1.0	5.0	90.0	4.1	146.0
SMBJ100A	NZ	SMBJ100CA	DZ	111.00	123.00	1.0	5.0	100.0	3.7	162.0
SMBJ110A	PE	SMBJ110CA	EE	122.00	135.00	1.0	5.0	110.0	3.4	177.0
SMBJ120A	PG	SMBJ120CA	EG	133.00	147.00	1.0	5.0	120.0	3.1	193.0
SMBJ130A	PK	SMBJ130CA	EK	144.00	159.00	1.0	5.0	130.0	2.9	209.0
SMBJ150A	PM	SMBJ150CA	EM	167.00	185.00	1.0	5.0	150.0	2.5	243.0
SMBJ160A	PP	SMBJ160CA	EP	178.00	197.00	1.0	5.0	160.0	2.3	259.0
SMBJ170A	PR	SMBJ170CA	ER	189.00	209.00	1.0	5.0	170.0	2.2	275.0
SMBJ180A	PT	SMBJ180CA	ET	200.00	220.00	1.0	5.0	180.0	2.1	304.6
SMBJ188A	PB	SMBJ188CA	EB	209.00	231.00	1.0	5.0	190.0	1.9	307.8
SMBJ200A	PV	SMBJ200CA	EV	224.00	247.00	1.0	5.0	200.0	1.8	324.0
SMBJ220A	PX	SMBJ220CA	EX	246.00	272.00	1.0	5.0	220.0	1.7	356.0
SMBJ250A	PZ	SMBJ250CA	EZ	279.00	309.00	1.0	5.0	250.0	1.5	405.0
SMBJ300A	QE	SMBJ300CA	FE	335.00	371.00	1.0	5.0	300.0	1.2	486.0
SMBJ350A	QG	SMBJ350CA	FG	391.00	432.00	1.0	5.0	350.0	1.0	567.0
SMBJ400A	QK	SMBJ400CA	FK	447.00	494.00	1.0	5.0	400.0	0.9	648.0
SMBJ440A	QM	SMBJ440CA	FM	492.00	543.00	1.0	5.0	440.0	0.8	713.0

Typical Characteristics

FIG1:Peak Pulse Power Rating Curve

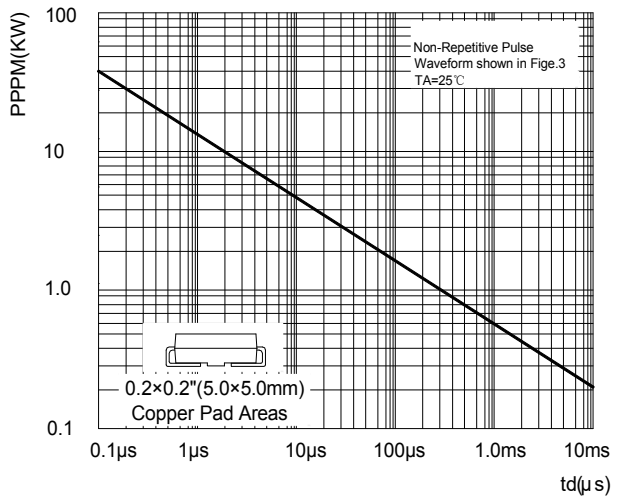


FIG2: Pulse Power or Current vs. Initial Junction Temperature

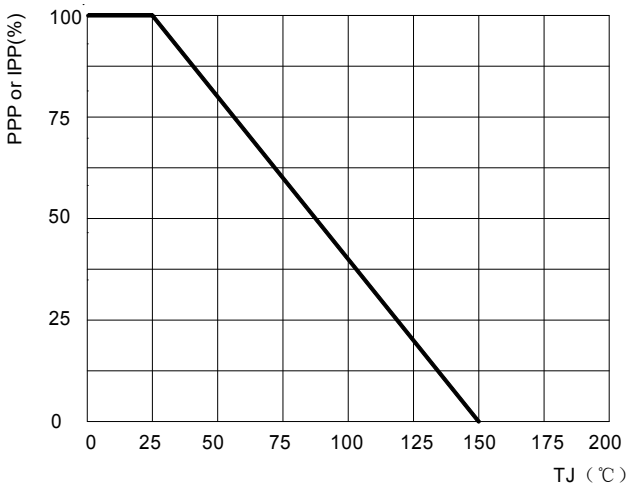


FIG3: Pulse Waveform

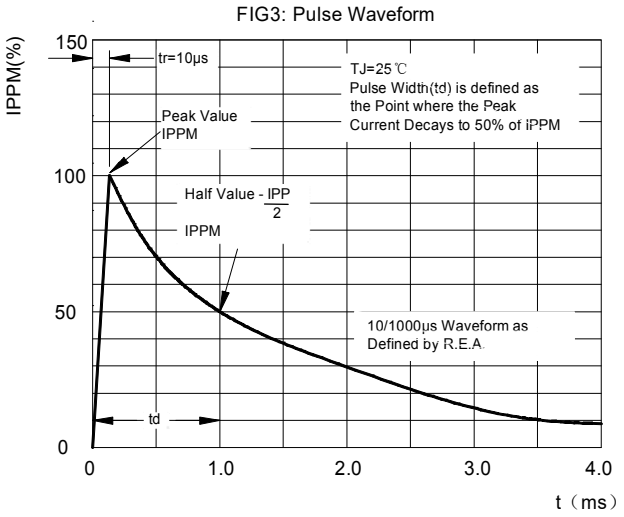


FIG4:Typical Transient Thermal Impedance

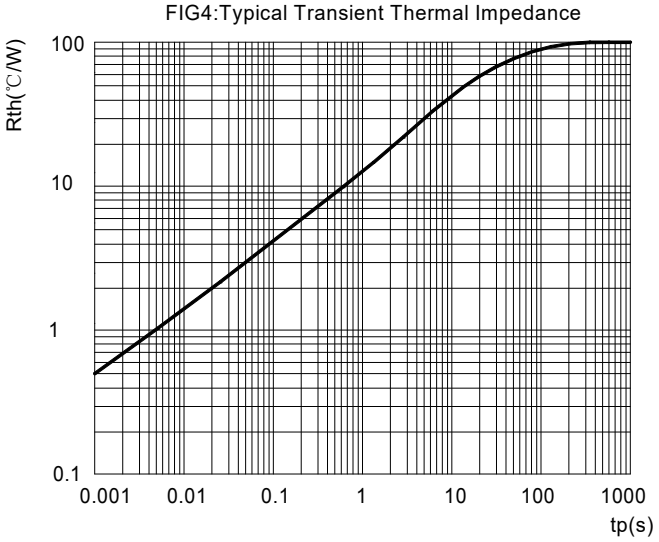


FIG5: Maximum Non-Repetitive Surge Current

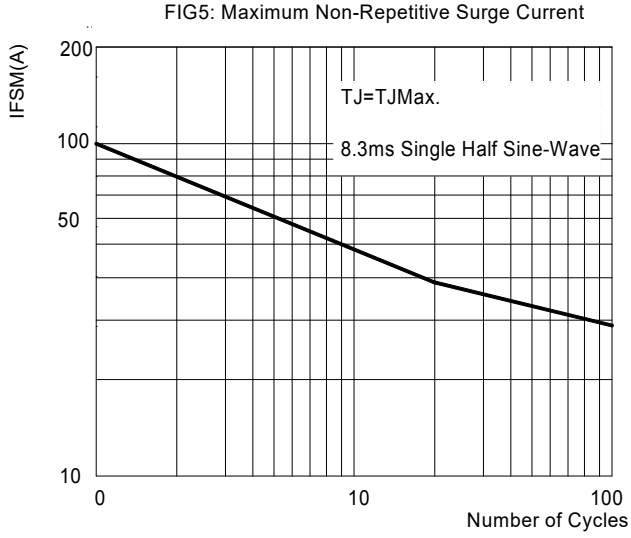
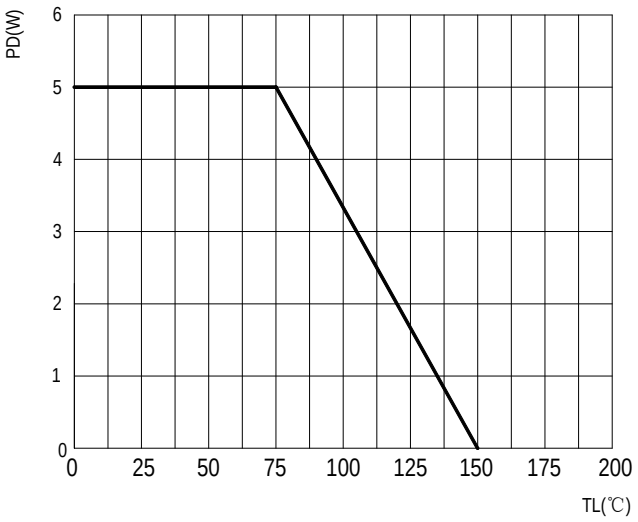
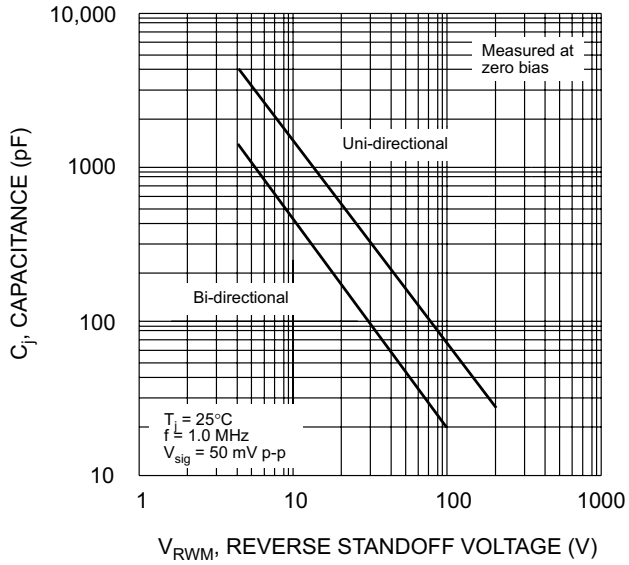


FIG6:Steady State Power Dissipation

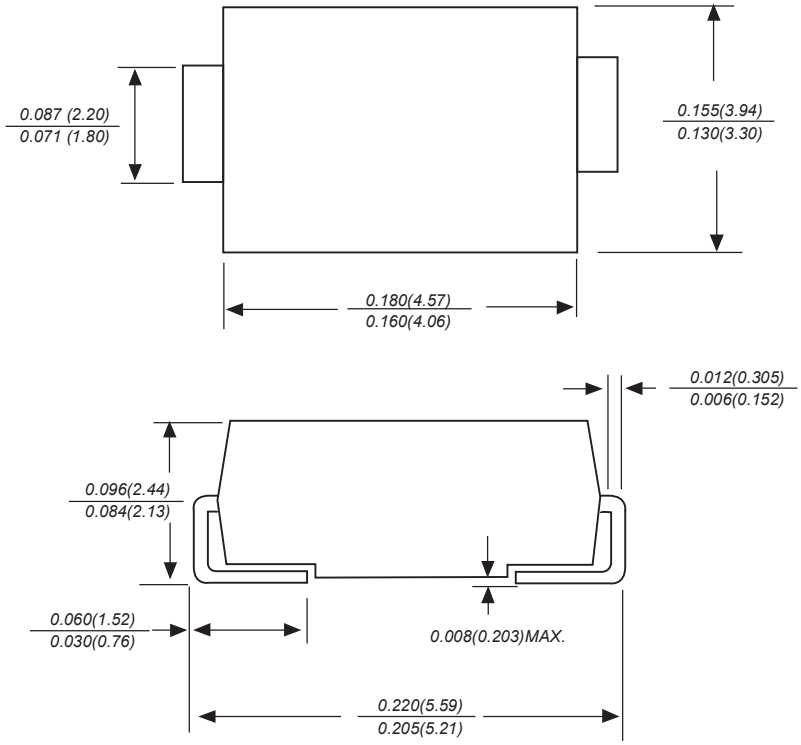


Typical Characteristics

Fig. 7 Typical Junction Capacitance

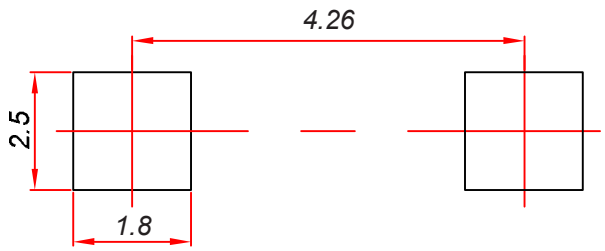


SMB Package outline Dimensions



Dimensions in inches and (millimeters)

SMB Suggested pad Layout



Note:
1.Controlling dimension:In millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.