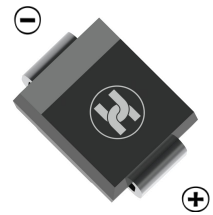


FEATURES

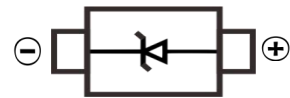
- Built-in strain relief
- Glass passivated junction
- Low inductance
- Excellent clamping capability
- Repetition Rate (duty cycle):0.01%
- Fast response time: typically less than 1.0ps
from 0 Volts to V(BR) for unidirectional types
- Typical IR less than 1mA above 10V
- High temperature soldering guaranteed: 260°C/10 seconds,
- Surface Mount device



SMB

MECHANICAL DATA

- Case: SMB(DO-214AA)
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 0.088 grams (approximate)



MAXIMUM RATINGS AND CHARACTERISTICS(T_A = 25°C unless otherwise noted)

	Symbol	Value	Unit
Peak power dissipation with a 10/1000µs waveform (NOTE 1,2, FIG.1)	P _{PPM}	Minimum 600	W
Peak pulse current with a 10/1000µs waveform (NOTE 1)	I _{PPM}	See next table	A
Typical thermal resistance, junction to ambient (NOTE 3)	R _{θJA}	120.0	°C/W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave uni-directional only (NOTE 2)	I _{FSM}	100	A
Typical thermal resistance, junction to ambient (NOTE 3)	R _{θJL}	30	°C/W
Operating junction and storage temperature range	T _J , T _{STG}	-55 ~+150	°C

NOTES:

- (1) Non-repetitive current pulses, per Fig. 3 and derated above T_A=25 per Fig. 2. Rating is 300W above 78V.
- (2) Mounted on 0.2 x 0.2" (5.0 x 5.0mm) copper pads to each terminal.
- (3) Mounted on minimum recommended pad layout.

ELECTRICAL CHARACTERISTICS

Ratings at 25 ambient temperature unless otherwise specified. VF=3.5V at IF=25A (uni-directional only)

Device type	HKT Type	Device marking code		Breakdown voltage V (BR) at $I_T^{(1)}$		Test current I_T (mA)	Stand-off voltage V_{WM} (V)	Maximum reverse leakage at V_{WM} I_b (μ A)(3)	Maximum peak pulse surge current I_{PPM} (A)(2)	Maximum clamping voltage at I_{PPM} V_C (V)
		UNI	BI	MIN	MAX					
SMBJ5.0	HDT5.0MB	KD	AD	6.4	7.8	10	5.0	800	62.5	9.6
SMBJ5.0A	HDT5.0AMB	KE	AE	6.4	7.1	10	5.0	800	65.2	9.2
SMBJ6.0	HDT6.0MB	KF	AF	6.7	8.2	10	6.0	800	52.3	11.4
SMBJ6.0A	HDT6.0AMB	KG	AG	6.7	7.4	10	6.0	800	58.3	10.3
SMBJ6.5	HDT6.5MB	KH	AH	7.2	8.8	10	6.5	500	48.8	12.3
SMBJ6.5A	HDT6.5AMB	KK	AK	7.2	8.0	10	6.5	500	53.6	11.2
SMBJ7.0	HDT7.0MB	KL	AL	7.8	9.5	10	7.0	200	45.1	13.3
SMBJ7.0A	HDT7.0AMB	KM	AM	7.8	8.6	10	7.0	200	50	12.0
SMBJ7.5	HDT7.5MB	KN	AN	8.3	10.2	1	7.5	100	42	14.3
SMBJ7.5A	HDT7.5AMB	KP	AP	8.3	9.2	1	7.5	100	46.5	12.9
SMBJ8.0	HDT8.0MB	KQ	AQ	8.9	10.9	1	8.0	50	40	15.0
SMBJ8.0A	HDT8.0AMB	KR	AR	8.9	9.8	1	8.0	50	44.1	13.6
SMBJ8.5	HDT8.5MB	KS	AS	9.4	11.5	1	8.5	10	37.7	15.9
SMBJ8.5A	HDT8.5AMB	KT	AT	9.4	10.4	1	8.5	10	41.7	14.4
SMBJ9.0	HDT9.0MB	KU	AU	10.0	12.2	1	9.0	5.0	35.5	16.9
SMBJ9.0A	HDT9.0AMB	KV	AV	10.0	11.1	1	9.0	5.0	39	15.4
SMBJ10	HDT10MB	KW	AW	11.1	12.3	1	10	5.0	31.9	18.8
SMBJ10A	HDT10AMB	KX	AX	11.1	14.9	1	10	5.0	35.3	17.0
SMBJ11	HDT11MB	KY	AY	12.2	13.5	1	11	5.0	29.9	20.1
SMBJ11A	HDT11AMB	KZ	AZ	12.2	16.3	1	11	5.0	33	18.2
SMBJ12	HDT12MB	LD	BD	13.3	14.7	1	12	5.0	27.3	22.0
SMBJ12A	HDT12AMB	LE	BE	13.3	17.6	1	12	5.0	30.2	19.9
SMBJ13	HDT13MB	LF	BF	14.4	15.9	1	13	5.0	25.2	23.8
SMBJ13A	HDT13AMB	LG	BG	14.4	19.1	1	13	5.0	27.9	21.5
SMBJ14	HDT14MB	LH	BH	15.6	17.2	1	14	5.0	23.3	25.8
SMBJ14A	HDT14AMB	LK	BK	15.6	20.4	1	14	5.0	25.9	23.2
SMBJ15	HDT15MB	LL	BL	16.7	18.5	1	15	5.0	22.3	26.9
SMBJ15A	HDT15AMB	LM	BM	16.7	21.8	1	15	5.0	24.6	24.4
SMBJ16	HDT16MB	LN	BN	17.8	19.7	1	16	5.0	20.8	28.8
SMBJ16A	HDT16AMB	LP	BM	17.8	23.1	1	16	5.0	23.1	26.0
SMBJ17	HDT17MB	LQ	BQ	18.9	20.9	1	17	5.0	19.7	30.5

Device type	HKT Type	Device marking code		Breakdown voltage V (BR) at $I_T^{(1)}$		Test current I_T (mA)	Stand-off voltage V_{WM} (V)	Maximum reverse leakage at V_{WM} I_b (μ A)(3)	Maximum peak pulse surge current I_{PPM} (A)(2)	Maximum clamping voltage at I_{PPM} V_C (V)
		UNI	BI	MIN	MAX					
SMBJ17A	HDT17AMB	LR	BR	18.9	20.9	1	17.0	5.0	21.7	27.6
SMBJ18	HDT18MB	LS	BS	20.0	24.4	1	18.0	5.0	18.6	32.2
SMBJ18A	HDT18AMB	LT	BT	20.0	22.1	1	18.0	5.0	20.5	29.2
SMBJ20	HDT20MB	LU	BU	22.2	27.1	1	20.0	5.0	16.8	35.8
SMBJ20A	HDT20AMB	LV	BV	22.2	24.5	1	20.0	5.0	18.5	32.4
SMBJ22	HDT22MB	LW	BW	24.4	29.8	1	22.0	5.0	15.2	39.4
SMBJ22A	HDT22AMB	LX	BX	24.4	26.9	1	22.0	5.0	16.9	35.5
SMBJ24	HDT24MB	LY	BY	26.7	32.6	1	24.0	5.0	14	43.0
SMBJ24A	HDT24AMB	LZ	BZ	26.7	29.5	1	24	5.0	15.4	38.9
SMBJ26	HDT26MB	MD	CD	28.9	35.3	1	26.0	5.0	12.9	46.6
SMBJ26A	HDT26AMB	ME	CE	28.9	31.9	1	26.0	5.0	14.3	42.1
SMBJ28	HDT28MB	MF	CF	31.1	38.0	1	28	5.0	12	50.0
SMBJ28A	HDT28AMB	MG	CG	31.1	34.4	1	28	5.0	13.2	45.4
SMBJ30	HDT30MB	MH	CH	33.3	40.7	1	30	5.0	11.2	53.5
SMBJ30A	HDT30AMB	MK	CK	33.3	36.8	1	30	5.0	12.4	48.4
SMBJ33	HDT33MB	ML	CL	36.7	44.9	1	33	5.0	10.2	59.0
SMBJ33A	HDT33AMB	MM	CM	36.7	40.6	1	33	5.0	11.3	53.3
SMBJ36	HDT36MB	MN	CN	40.0	48.9	1	36	5.0	9.3	64.3
SMBJ36A	HDT36AMB	MP	CP	40.0	44.2	1	36	5.0	10.3	58.1
SMBJ40	HDT40MB	MQ	CQ	44.4	54.3	1	40	5.0	8.4	71.4
SMBJ40A	HDT40AMB	MR	CR	44.4	49.1	1	40	5.0	9.3	64.5
SMBJ43	HDT43MB	MS	CS	47.8	58.4	1	43	5.0	7.8	76.7
SMBJ43A	HDT43AMB	MT	CT	47.8	52.8	1	43	5.0	8.6	69.4
SMBJ45	HDT45MB	MU	CU	50.0	61.1	1	45	5.0	7.5	80.3
SMBJ45A	HDT45AMB	MV	CV	50.0	55.3	1	45	5.0	8.3	72.7
SMBJ48	HDT48MB	MW	CW	53.3	65.1	1	48	5.0	7	85.5
SMBJ48A	HDT48AMB	MX	CX	53.3	58.9	1	48	5.0	7.8	77.4
SMBJ51	HDT51MB	MY	CY	56.7	69.3	1	51	5.0	6.6	91.1
SMBJ51A	HDT51AMB	MZ	CZ	56.7	62.7	1	51	5.0	7.3	82.4
SMBJ54	HDT54MB	ND	DD	60.0	73.3	1	54	5.0	6.2	96.3
SMBJ54A	HDT54AMB	NE	DE	60.0	66.3	1	54	5.0	6.9	87.1
SMBJ58	HDT58MB	NF	DF	64.4	78.7	1	58	5.0	5.8	103
SMBJ58A	HDT58AMB	NG	DG	64.4	71.2	1	58	5.0	6.4	93.6

Device type	HKT Type	Device marking code		Breakdown voltage V (BR) at $I_T^{(1)}$		Test current I_T (mA)	Stand-off voltage V_{WM} (V)	Maximum reverse leakage at V_{WM} I_b (μ A)(3)	Maximum peak pulse surge current I_{PPM} (A)(2)	Maximum clamping voltage at I_{PPM} V_C (V)
		UNI	BI	MIN	MAX					
SMBJ60	HDT60MB	NH	DH	66.7	81.5	1	60	5.0	5.6	107
SMBJ60A	HDT60AMB	NK	DK	66.7	73.7	1	60	5.0	6.2	96.8
SMBJ64	HDT64MB	NL	DL	77.1	86.9	1	64	5.0	5.3	114
SMBJ64A	HDT64AMB	NM	DM	77.1	78.6	1	64	5.0	5.8	103
SMBJ70	HDT70MB	NN	DN	77.8	95.1	1	70	5.0	4.8	125
SMBJ70A	HDT70AMB	NP	DP	77.8	86.0	1	70	5.0	5.3	113
SMBJ75	HDT75MB	NQ	DQ	83.3	102	1	75	5.0	4.5	134
SMBJ75A	HDT75AMB	NR	DR	83.3	92.1	1	75	5.0	5	121
SMBJ78	HDT78MB	NS	DS	86.7	106	1	78	5.0	4.3	139
SMBJ78A	HDT78AMB	NT	DT	86.7	95.8	1	78	5.0	4.8	126
SMBJ85	HDT85MB	NU	DU	94.4	115	1	85	5.0	4	151
SMBJ85A	HDT85AMB	NV	DV	94.4	104	1	85	5.0	4.4	137
SMBJ90	HDT90MB	NW	DW	100	122	1	90	5.0	3.8	160
SMBJ90A	HDT90AMB	NX	DX	100	111	1	90	5.0	4.1	146
SMBJ100	HDT100MB	NY	DY	111	136	1	100	5.0	3.4	179
SMBJ100A	HDT100AMB	NZ	DZ	111	123	1	100	5.0	3.7	162
SMBJ110	HDT110MB	PD	FD	122	149	1	110	5.0	3.1	196
SMBJ110A	HDT110AMB	PE	FE	122	135	1	110	5.0	3.4	177
SMBJ120	HDT120MB	PF	FF	133	163	1	120	5.0	2.8	214
SMBJ120A	HDT120AMB	PG	FG	133	147	1	120	5.0	3.1	193
SMBJ130	HDT130MB	PH	FH	144	176	1	130	5.0	2.6	231
SMBJ130A	HDT130AMB	PK	FK	144	159	1	130	5.0	2.9	209
SMBJ150	HDT150MB	PL	FL	167	204	1	150	5.0	2.2	268
SMBJ150A	HDT150AMB	PM	FM	167	185	1	150	5.0	2.5	243
SMBJ160	HDT160MB	PN	FN	178	218	1	160	5.0	2.1	287
SMBJ160A	HDT160AMB	PP	FP	178	197	1	160	5.0	2.3	259
SMBJ170	HDT170MB	PQ	FQ	189	231	1	170	5.0	2	304
SMBJ170A	HDT170AMB	PR	FR	189	209	1	170	5.0	2.2	275
SMBJ188	HDT188MB	PT	FT	209	255	1	188	5.0	2.0	292
SMBJ188A	HDT188AMB	PS	FS	209	231	1	188	5.0	2.1	318
SMBJ200A	HDT200AMB	PV	FV	224	247	1	200	5.0	1.9	324
SMBJ220A	HDT220AMB	PX	FX	246	272	1	220	5.0	1.7	356
SMBJ250A	HDT250AMB	PZ	FZ	279	309	1	250	5.0	1.5	405
SMBJ300A	HDT300AMB	QE	GE	335	371	1	300	5.0	1.3	486
SMBJ350A	HDT350AMB	QG	GG	391	432	1	350	5.0	1.1	567
SMBJ400A	HDT400AMB	QK	GK	447	494	1	400	5.0	0.9	648
SMBJ440A	HDT440AMB	QM	GM	492	543	1	440	5.0	0.9	713

Notes: (1) Pulse test : T_P 50ms

(2) Surge current waveform per Fig.3 and derate per Fig.2

(3) For bi-directional types having V_{WM} of 10 Volts and less, the ID Limit is doubled

(4) All terms and symbols are consistent with A NSI/IEEE C62.35

(5) For the bidirectional SMBJ5.0CA, the maximum V(BR) is 7.25V

Typical Characteristics

Fig. 1-Peak Pulse Power Rating Curve

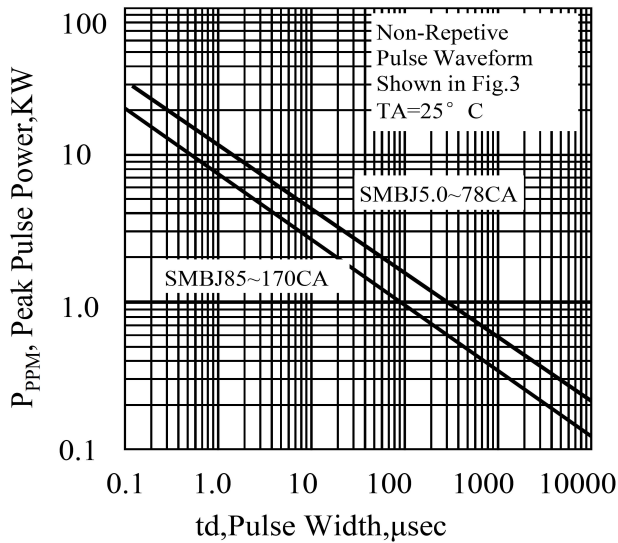


Fig. 2-Pulse Derating Curve

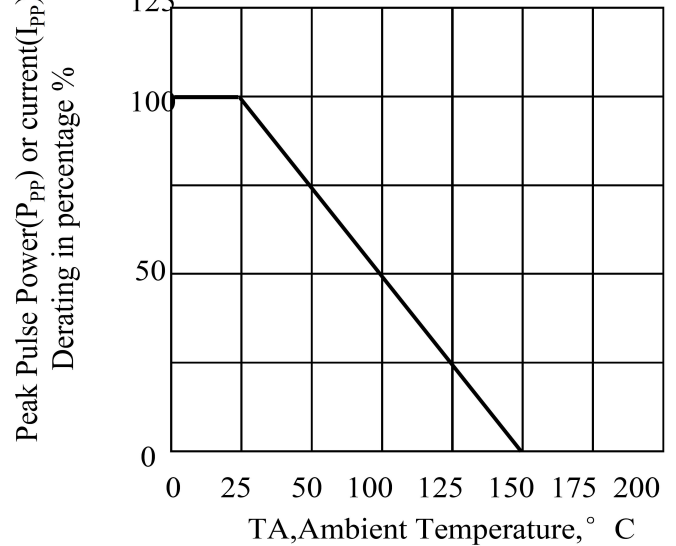


Fig. 3-Pulse Waveform

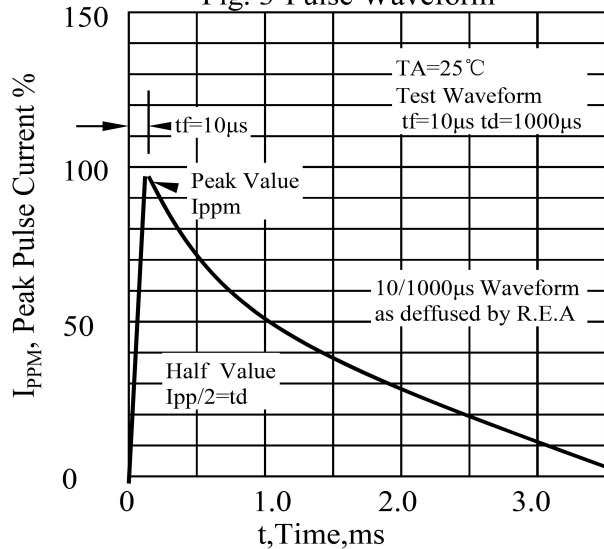


Fig. 4-Typical Junction Capacitance

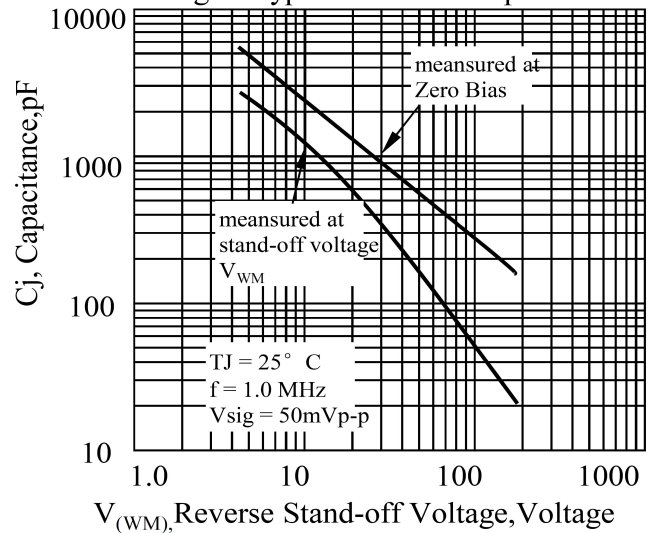


Fig. 5 - Maximum Non-repetitive Peak Forward Surge Current

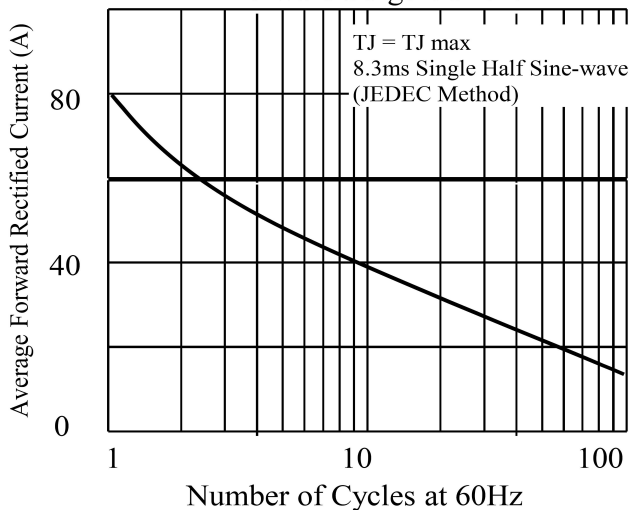
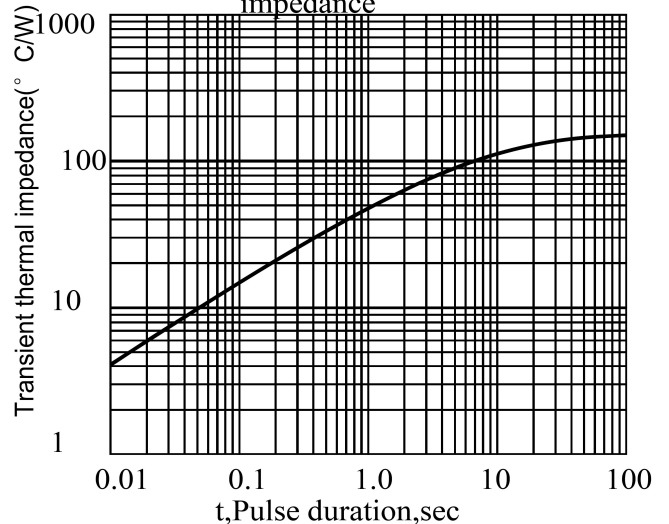
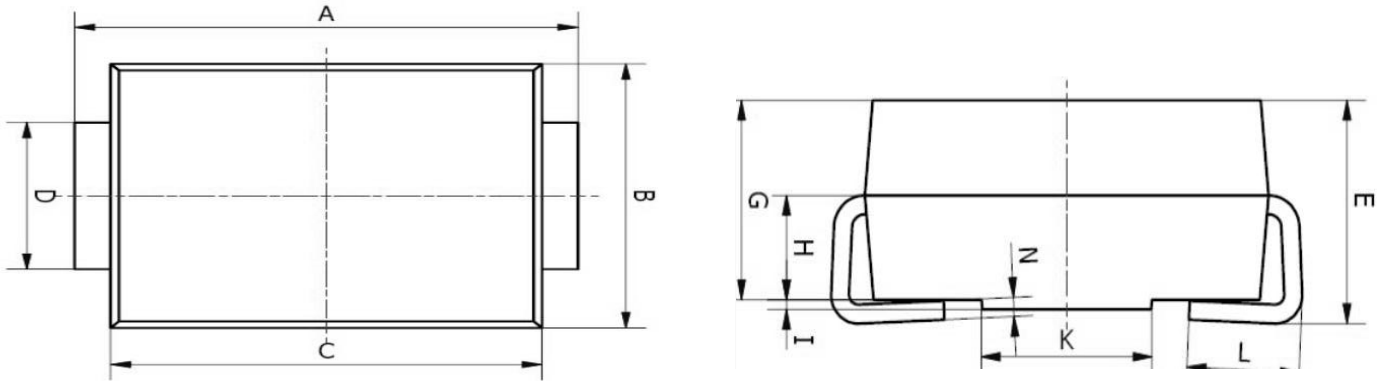


Fig. 6. - typical transient thermal impedance

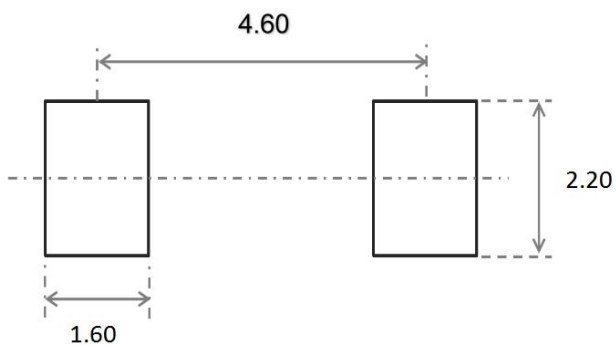


SMB Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	5.00	5.45	0.197	0.215
B	3.20	4.00	0.126	0.157
C	4.30	4.70	0.169	0.185
D	1.80	2.20	0.071	0.087
E	2.20	2.50	0.087	0.098
G	1.90	2.30	0.075	0.090
H	0.95	1.25	0.037	0.049
I	0.05	0.15	0.002	0.006
K	1.70	2.10	0.067	0.083
L	0.90	1.60	0.035	0.063
N	0.10	0.30	0.004	0.012

SMB Suggested Pad Layout

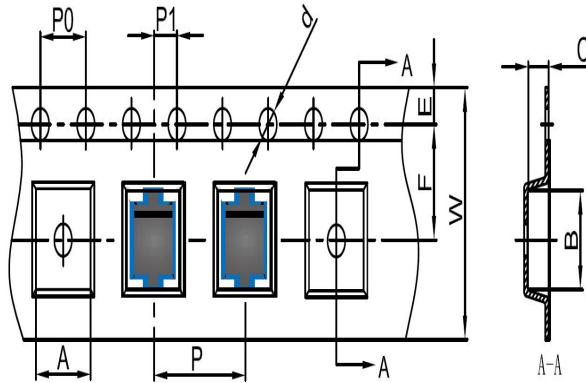


Note:

1. Controlling dimension: in millimeters
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

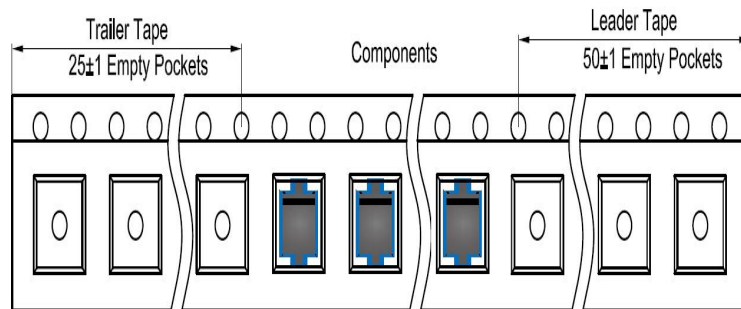
SMB Tape and Reel

SMB Embossed Carrier Tape

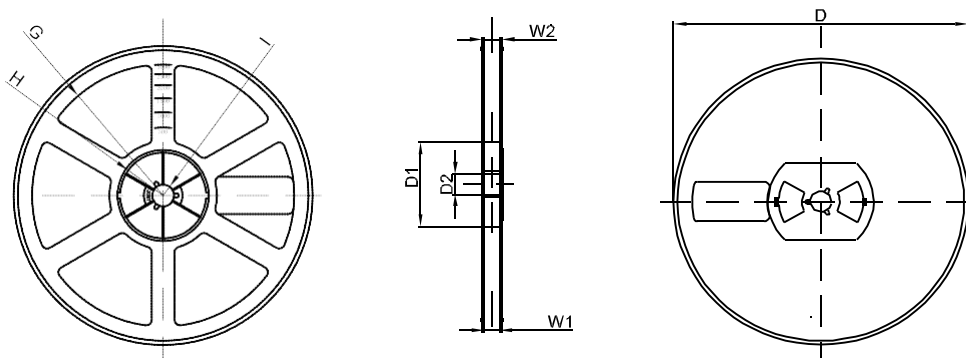


DIMENSIONS ARE IN MILLIMETER										
TYPE	A	B	C	d	E	F	P0	P	P1	W
SMB	4.10	5.50	2.58	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SMB Tape Leader and Trailer



SMB Reel



DIMENSIONS ARE IN MILLIMETER								
REEL OPTION	D	D1	D2	G	H	I	W1	W2
13" DIA	Ø330	75.0	13.00	R165	R37.50	R6.50	12.40	17.60
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1