

Features

- ✧ For surface mounted applications in order to optimize board space
- ✧ Low profile package
- ✧ Built-in strain relief
- ✧ Glass passivated junction
- ✧ Low inductance
- ✧ High temperature soldering guaranteed: 260°C / 10 seconds at terminals
- ✧ Meet MSL level 1, per J-STD-020, LF maximum peak of 260°C
- ✧ Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- ✧ Green compound with suffix "G" on packing code & prefix "G" on datecode



Mechanical Data

- ✧ Case: Molded plastic over passivated junction
- ✧ Terminals: Pure tin plated, lead free, solderable per MIL-STD-750, method 2026
- ✧ Polarity: Color Band denotes positive end (cathode)
- ✧ Standard packaging: 12mm tape (EIA-481)
- ✧ Weight: 0.107 gram

Ordering Information (example)

Part No.	Package	Packing	Packing code	Packing code (Green)
1SMB5926	SMB	850 / 7" REEL	R5	R5G

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
DC Power Dissipation at $T_L=75^\circ\text{C}$, measure at Zero Lead Length Derate above 75°C	P_D	3 40	Watts $\text{mW}/^\circ\text{C}$
DC Power Dissipation at $T_A=25^\circ\text{C}$ Derate above 25°C	P_D	550 4.4	mW $\text{mW}/^\circ\text{C}$
Thermal Resistance from Junction to Lead	$R_{\theta JL}$	25	$^\circ\text{C}/\text{W}$
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	226	$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

Maximum ratings are those values beyond which device damage can occur.

Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be attached.

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted)

Device (Note 1)	Device Marking Code	Nominal Zener Voltage			Test Current	Zener Impedance (Note 3)			Leakage Current		Maximum DC Zener Current
		V _Z @I _Z				I _{ZT}	Z _{ZT} @I _{ZT}	Z _{ZK} @I _{ZK}		I _R @V _R	
		V			mA	Ω	Ω	mA	uA	V	mA(DC)
		Min.	Nom. (Notes 2)	Max.							
1SMB5926	926B	10.45	11	11.55	34.1	5.5	550	0.25	1	8.4	136
1SMB5927	927B	11.40	12	12.60	31.2	6.5	550	0.25	1	9.1	125
1SMB5928	928B	12.35	13	13.65	28.8	7.0	550	0.25	1	9.9	115
1SMB5929	929B	14.25	15	15.75	25.0	9.0	600	0.25	1	11.4	100
1SMB5930	930B	15.20	16	16.80	23.4	10.0	600	0.25	1	12.2	94
1SMB5931	931B	17.10	18	18.90	20.8	12.0	650	0.25	1	13.7	83
1SMB5932	932B	19.00	20	21.00	18.7	14.0	650	0.25	1	15.2	75
1SMB5933	933B	20.90	22	23.10	17.0	17.5	650	0.25	1	16.7	68
1SMB5934	934B	22.80	24	25.20	15.6	19	700	0.25	1	18.2	63
1SMB5935	935B	25.65	27	28.35	13.9	23	700	0.25	1	20.6	56
1SMB5936	936B	28.50	30	31.50	12.5	26	750	0.25	1	22.8	50
1SMB5937	937B	31.35	33	34.65	11.4	33	800	0.25	1	25.1	45
1SMB5938	938B	34.20	36	37.80	10.4	38	850	0.25	1	27.4	42
1SMB5939	939B	37.05	39	40.95	9.6	45	900	0.25	1	29.7	38
1SMB5940	940B	40.85	43	45.15	8.7	53	950	0.25	1	32.7	35
1SMB5941	941B	44.65	47	49.35	8.0	67	1000	0.25	1	35.8	32
1SMB5942	942B	48.45	51	53.55	7.3	70	1100	0.25	1	38.8	29
1SMB5943	943B	53.20	56	58.80	6.7	86	1300	0.25	1	42.6	27
1SMB5944	944B	58.90	62	65.10	6.0	100	1500	0.25	1	47.1	24
1SMB5945	945B	64.60	68	71.40	5.5	120	1700	0.25	1	51.7	22
1SMB5946	946B	71.25	75	78.75	5.0	140	2000	0.25	1	56.0	20
1SMB5947	947B	77.90	82	86.10	4.6	160	2500	0.25	1	62.2	18
1SMB5948	948B	86.45	91	95.55	4.1	200	3000	0.25	1	69.2	16
1SMB5949	949B	95.00	100	105.00	3.7	250	3100	0.25	1	76.0	15
1SMB5950	950B	104.50	110	115.50	3.4	300	4000	0.25	1	83.6	13
1SMB5951	951B	114.00	120	126.00	3.1	360	4500	0.25	1	91.2	12
1SMB5952	952B	123.50	130	136.50	2.9	450	5000	0.25	1	98.8	11
1SMB5953	953B	142.50	150	157.50	2.5	600	6000	0.25	1	114.0	10
1SMB5954	954B	152.00	160	168.00	2.3	700	6500	0.25	1	121.6	9
1SMB5955	955B	171.00	180	189.00	2.1	900	7000	0.25	1	136.8	8
1SMB5956	956B	190.00	200	210.00	1.9	1200	8000	0.25	1	152.0	7

Notes:

1. Tolerance and type number designation the type numbers listed indicate a tolerance of 5%

2. Zener voltage (V_Z) measurement

Nominal Zener voltage is measured with the device junction in thermal equilibrium with ambient temperature 25°C

3. Zener impedance (Z_Z) derivation : Z_{ZT} and Z_{ZK} are measured by dividing the AC voltage drop across the device by the AC current applied.

The specified limits are for I_Z(AC) = 0.1 I_Z(DC) with the AC frequency = 60 Hz

RATINGS AND CHARACTERISTIC CURVES (1SMB5926 THRU 1SMB5956)

FIG. 1 STEADY STATE POWER DERATING

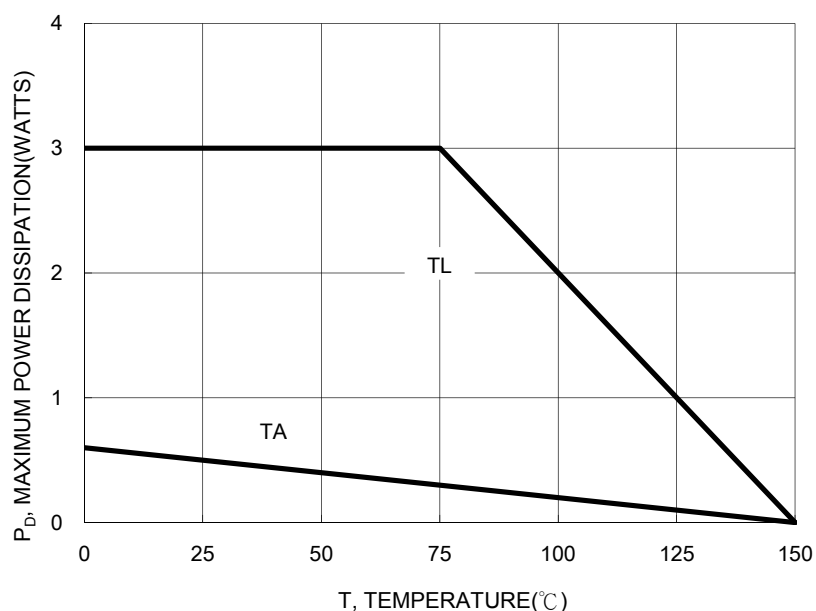


FIG.2 MAXIMUM SURGE POWER

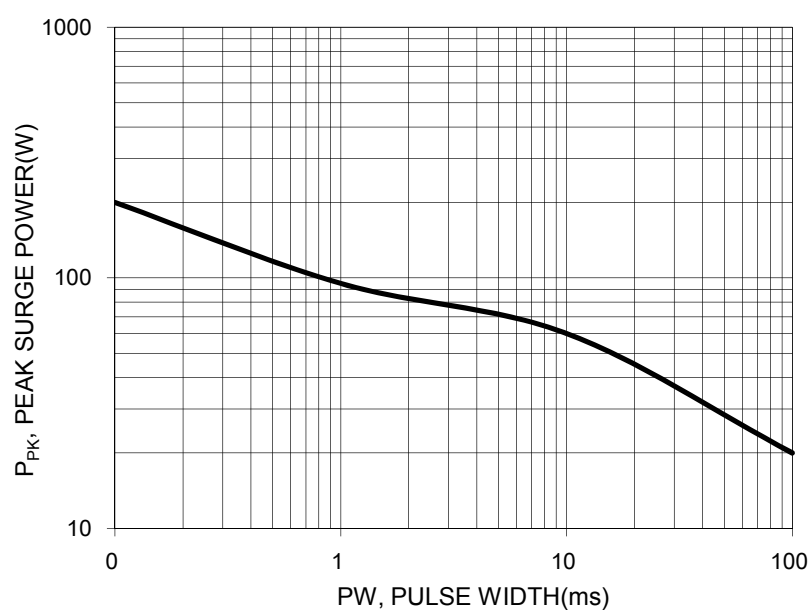


FIG. 3 ZENER VOLTAGE - TO 12 VOLTAGES

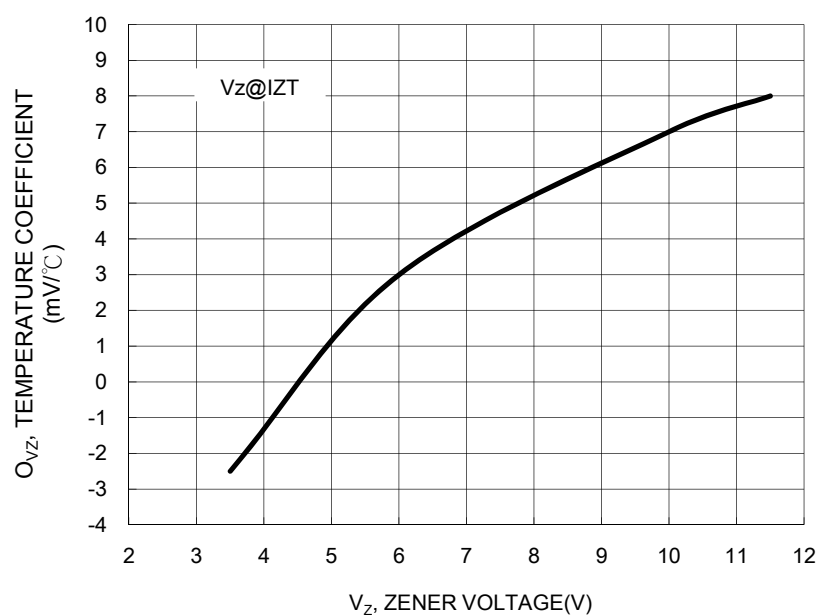


FIG.4 ZENER VOLTAGE 14 TO 200 VOLTAGES

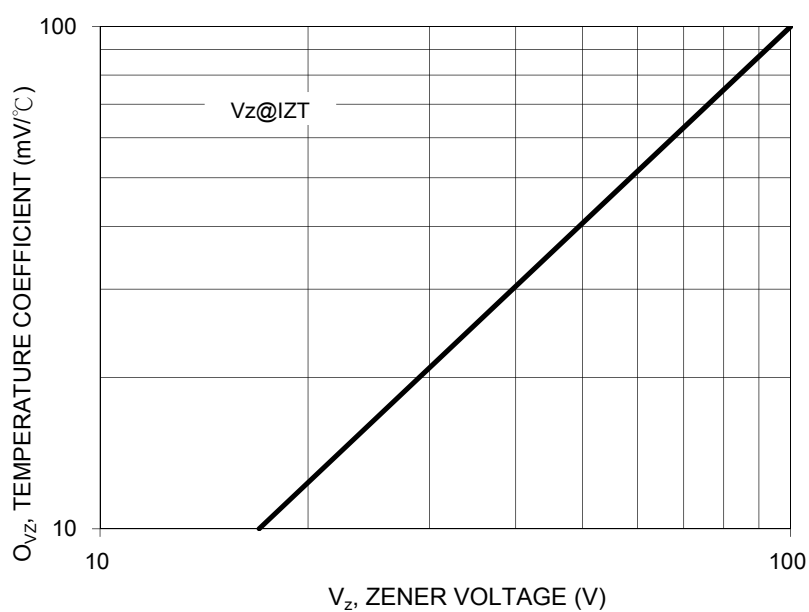


FIG. 5 $V_Z = 3.3$ THRU 10 VOLTS

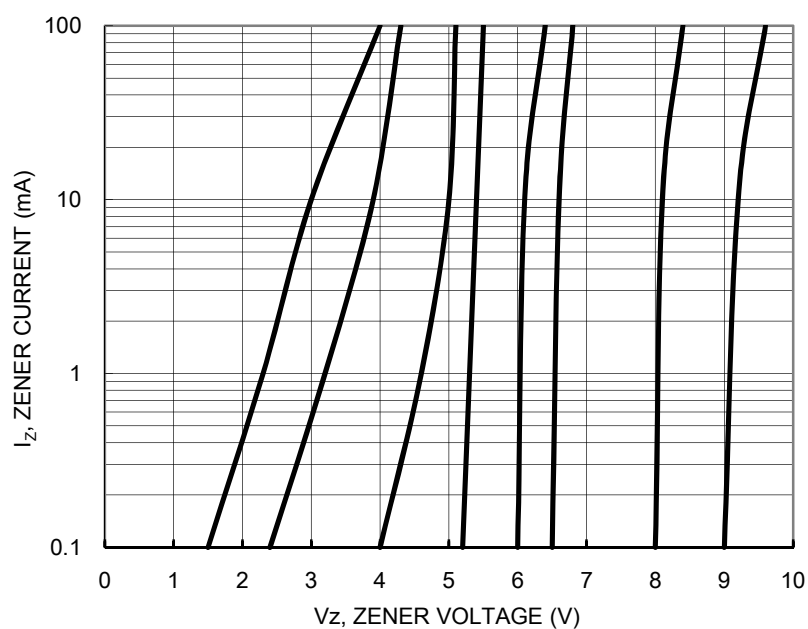
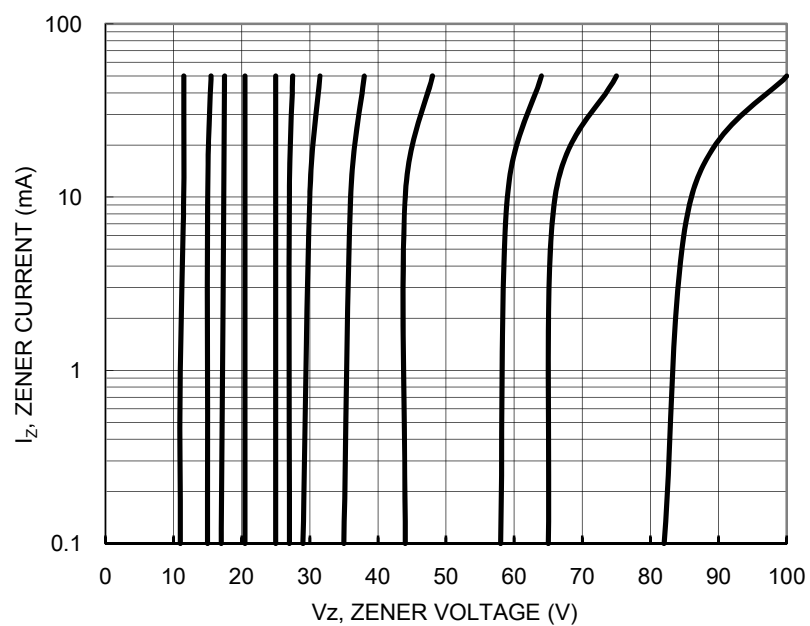


FIG. 6 $V_Z = 12$ THRU 82 VOLTS



RATINGS AND CHARACTERISTIC CURVES (1SMB5926 THRU 1SMB5956)

FIG. 7 EFFECT OF ZENER VOLTAGE

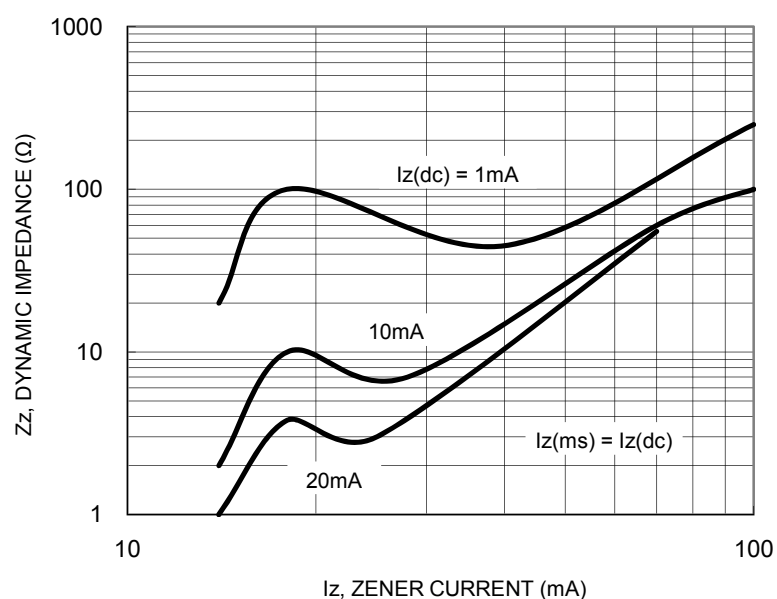


FIG. 8 EFFECT OF ZENER CURRENT

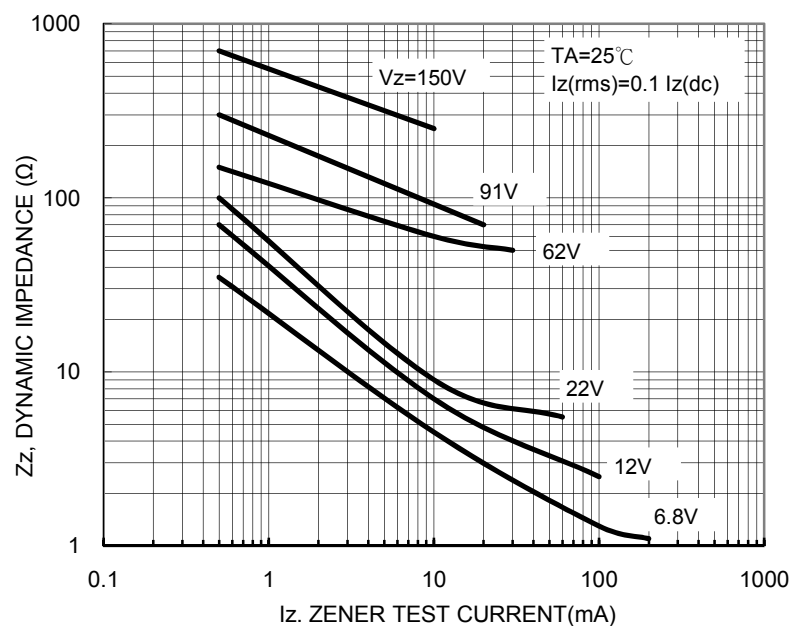


FIG.9 CAPACITANCE CURVE

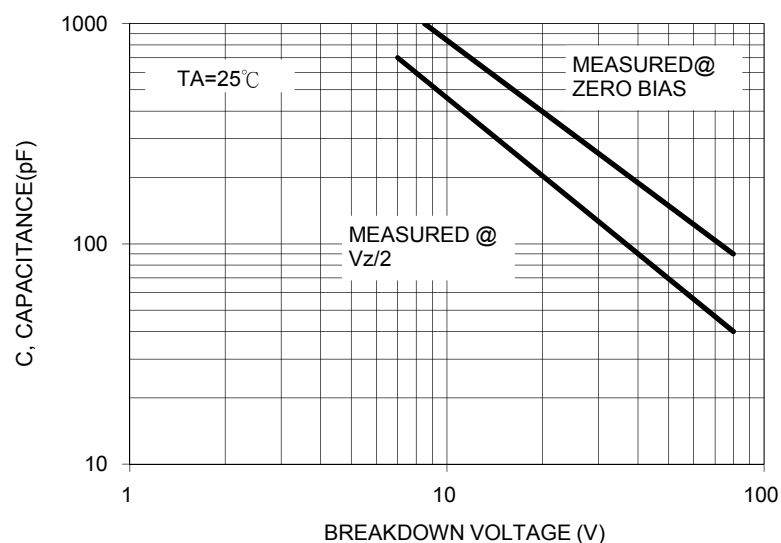


FIG. 10 TYPICAL PULSE RATING CURVE

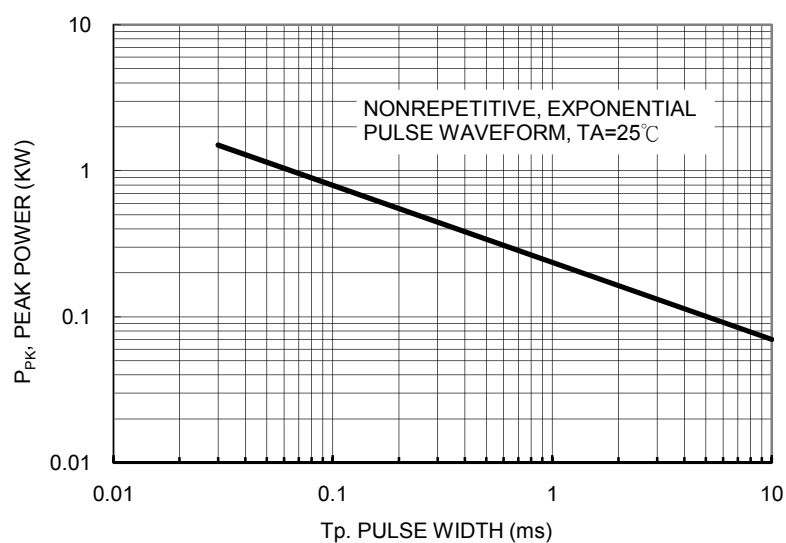


FIG. 11 PULSE WAVEFORM

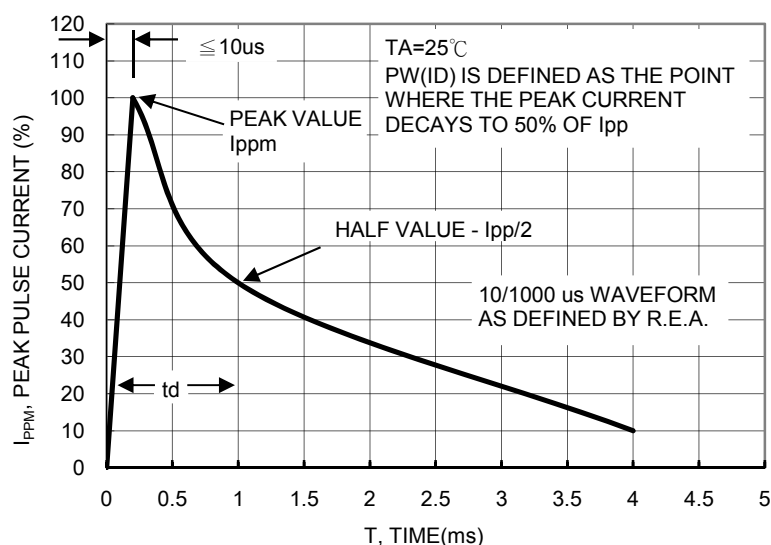
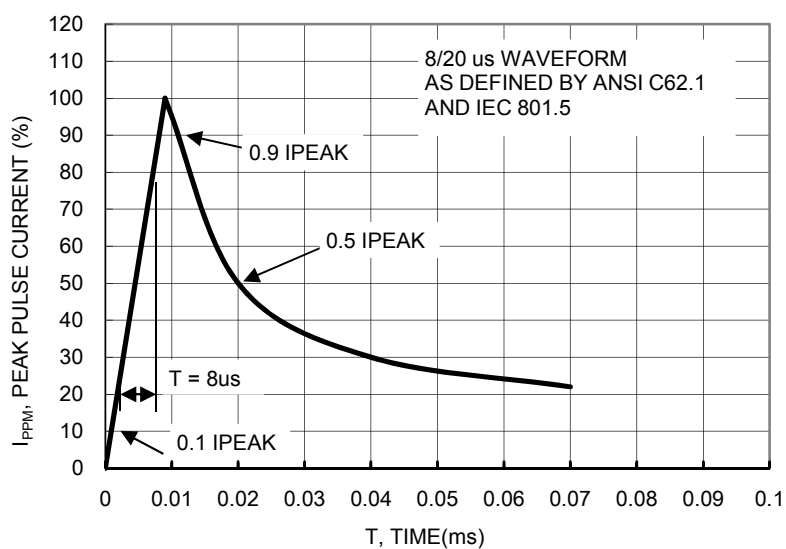


FIG. 12 PULSE WAVEFORM

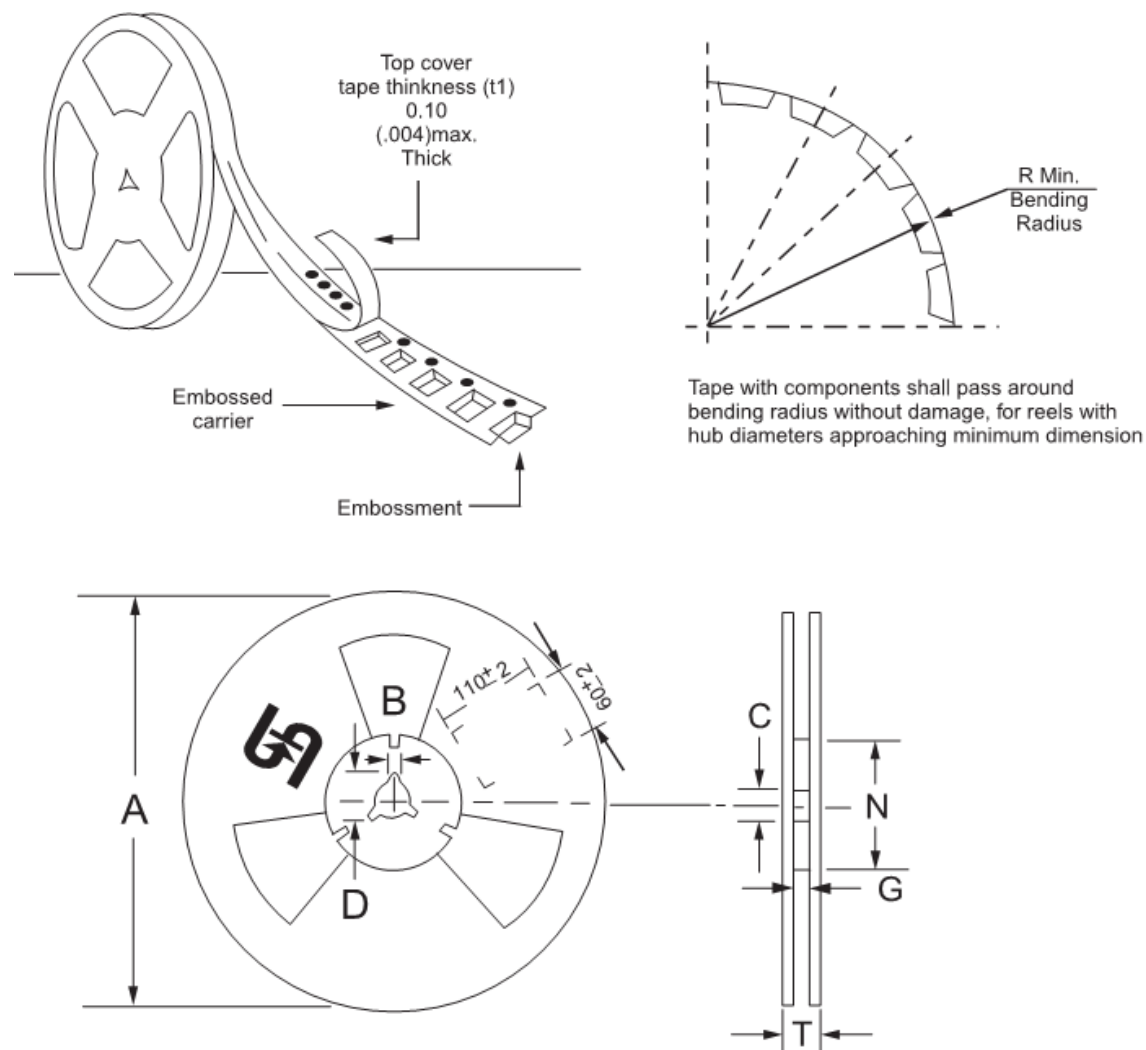


Ordering information

Part No.	Package	Packing	Packing code	Packing code (Green)
1SMB59xx (Note)	SMB	850 / 7" REEL	R5	R5G
	SMB	3K / 13" REEL	R4	R4G
	SMB	3K / 13" Plastic REEL	M4	M4G

Note: "x" is Device Code from "26" thru "56".

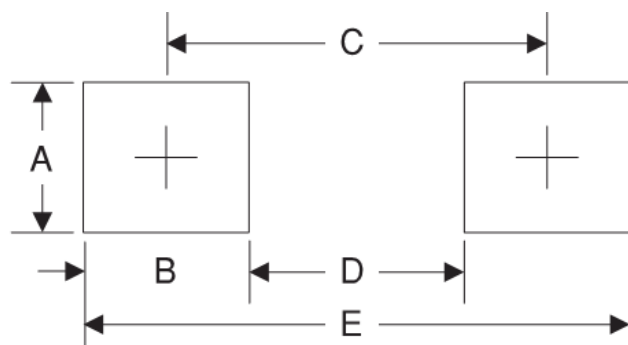
Tape & Reel specification



Reel Size	Tape Size	A	B	C	D	N	G	T
		±2.0	±0.4	+0.5;-0.2	min	±1.0	+0.8;-0	max
7"	12mm	178	1.9	13	21	62	12.2	14.6
Reel Size	Tape Size	A	B	C	D	N	G	T
		max	±0.5	±0.5	min	±0.5	+2.0;-0	max
13"	12mm	330	2	13	20.2	75	12.4	18.4

Unit (mm)

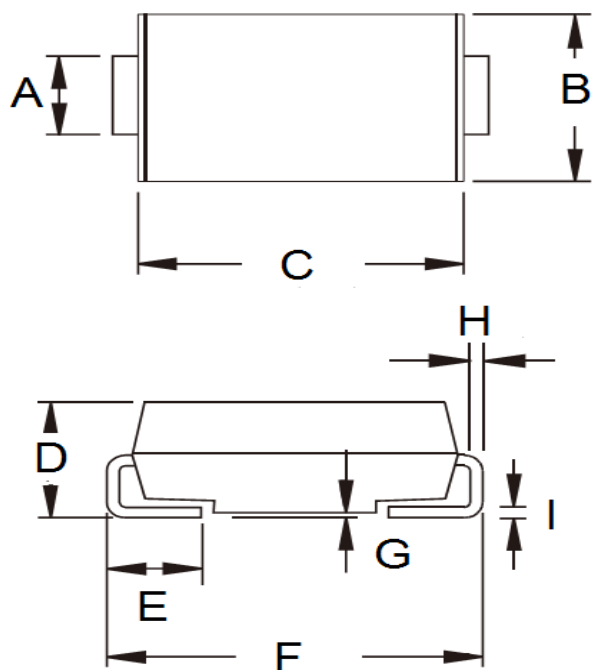
Suggested PAD Layout



Symbol	Unit(mm)
A	2.3
B	2.5
C	4.3
D	1.8
E	6.7

Version:G13

Dimensions



DIM.	Unit(mm)		Unit(inch)	
	Min	Max	Min	Max
A	1.95	2.10	0.077	0.083
B	3.48	3.73	0.137	0.147
C	4.25	4.75	0.167	0.187
D	1.99	2.61	0.078	0.103
E	0.90	1.41	0.035	0.056
F	5.10	5.30	0.201	0.209
G	0.10	0.20	0.004	0.008
H	0.15	0.31	0.006	0.012
I	0.15	0.31	0.006	0.012

Marking Diagram



P/N = Specific Device Code
 G = Green Compound
 YW = Date Code
 F = Factory Code