

1SMB5926 - 1SMB5956

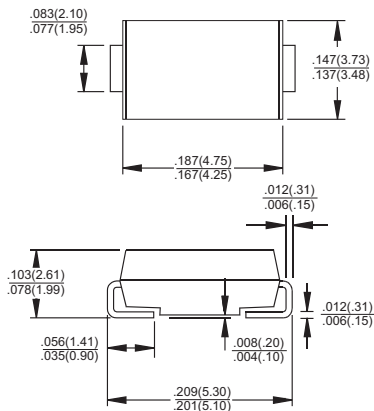
3.0 Watts Surface Mount Silicon Zener Diode

SMB/DO-214AA



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
- ✧ Plastic package has Underwriters Laboratory Flammability Classification 94V-0



Mechanical Data

Dimensions in inches and (millimeters)

- ✧ 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: 0.002 ounces, 0.064 gram

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Type Number	Symbol	Value	Units
DC Power Dissipation at $T_L=75^\circ\text{C}$, measure at Zero Lead Length Derate above 75 °C	P_D	3.0	Watts
Thermal Resistance from Junction-to-Lead	$R_{\theta JL}$	40	mW/°C
Operating and Storage Temperature Range	T_J, T_{STG}	25	°C/W
		-65 to + 150	°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	Zener Voltage Range (Note 2)				Zener Impedance (Note 3)			Leakage Current		I _{ZM}
		V _Z @ I _{ZT}			I _{ZT}	Z _{ZT} @ I _{ZT} Ohms	Z _{ZK} @ I _{ZK}		I _R	V _R	I _{ZTC}
		Nom (V)	Min (V)	Max (V)	mA		Ohms	mA	uA	V	mA(dc)
1SMB5926	926B	11	10.45	11.55	34.1	5.5	550	0.25	1.0	8.4	136
1SMB5927	927B	12	11.4	12.6	31.2	6.5	550	0.25	1.0	9.1	125
1SMB5928	928B	13	12.35	13.65	28.8	7	550	0.25	1.0	9.9	115
1SMB5929	929B	15	14.25	15.75	25.0	9	600	0.25	1.0	11.4	100
1SMB5930	930B	16	15.2	16.8	23.4	10	600	0.25	1.0	12.2	93
1SMB5931	931B	18	17.1	18.9	20.8	12	650	0.25	1.0	13.7	83
1SMB5932	932B	20	19	21	18.7	14	650	0.25	1.0	15.2	75
1SMB5933	933B	22	20.9	23.1	17.0	17.5	650	0.25	1.0	16.7	66
1SMB5934	934B	24	22.8	25.2	15.6	19	700	0.25	1.0	18.2	62
1SMB5935	935B	27	25.65	28.35	13.9	23	700	0.25	1.0	20.6	55
1SMB5936	936B	30	28.5	31.5	12.5	28	750	0.25	1.0	22.8	50
1SMB5937	937B	33	31.35	34.65	11.4	33	800	0.25	1.0	25.1	45
1SMB5938	938B	36	34.2	37.8	10.4	38	850	0.25	1.0	27.4	41
1SMB5939	939B	39	37.05	40.95	9.6	45	900	0.25	1.0	29.7	38
1SMB5940	940B	43	40.85	45.15	8.7	53	950	0.25	1.0	32.7	34
1SMB5941	941B	47	44.65	49.35	8.0	67	1000	0.25	1.0	35.8	31
1SMB5942	942B	51	48.45	53.55	7.3	70	1100	0.25	1.0	38.8	29
1SMB5943	943B	56	53.2	58.8	6.7	86	1300	0.25	1.0	42.6	26
1SMB5944	944B	62	58.9	65.1	6.0	100	1500	0.25	1.0	47.1	24
1SMB5945	945B	68	64.6	71.4	5.5	120	1700	0.25	1.0	51.7	22
1SMB5946	946B	75	71.25	78.75	5.0	140	2000	0.25	1.0	56.0	20
1SMB5947	947B	82	77.9	86.1	4.6	160	2500	0.25	1.0	62.2	18
1SMB5948	948B	91	6.45	95.55	4.1	200	3000	0.25	1.0	69.2	16
1SMB5949	949B	100	95	105	3.7	250	3100	0.25	1.0	76.0	15
1SMB5950	950B	110	1.4.5	11505	3.4	300	4000	0.25	1.0	83.6	13
1SMB5951	951B	120	114	126	3.1	380	4500	0.25	1.0	91.2	12
1SMB5952	952B	130	123.5	136.5	2.9	450	5000	0.25	1.0	98.8	11
1SMB5953	953B	150	142.5	157.5	2.5	600	6000	0.25	1.0	114.0	10
1SMB5954	954B	160	152	168	2.3	700	6500	0.25	1.0	121.6	9
1SMB5955	955B	180	171	189	2.1	900	7000	0.25	1.0	137	8
1SMB5956	956B	200	190	210	1.9	1200	8000	0.25	1.0	152	7

- Notes: 1. Tolerance and type number designation the type numbers listed indicate a tolerance of $\pm 5\%$.
2. Zener voltage (V_Z) measurement
Nominal Zener voltage is measured with the device junction in thermal equilibrium with ambient temperature at 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

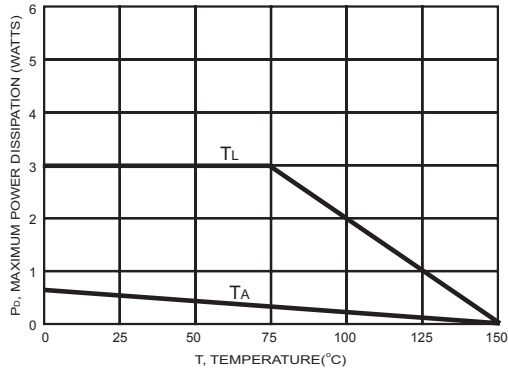


FIG.2- MAXIMUM SURGE POWER

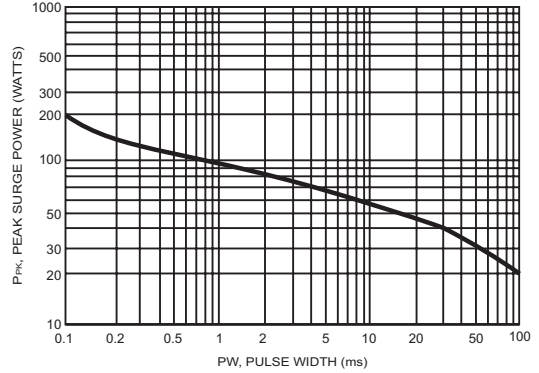


FIG.3- ZENER VOLTAGE - TO 12 VOLTS

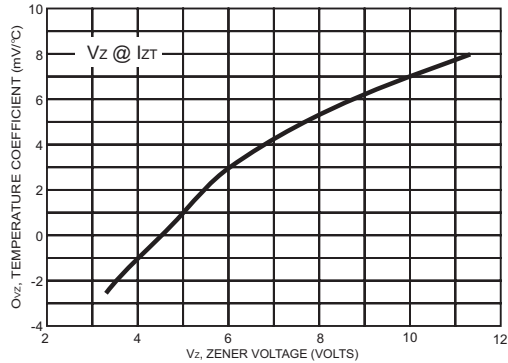


FIG.4- ZENER VOLTAGE - 14 TO 200 VOLTS

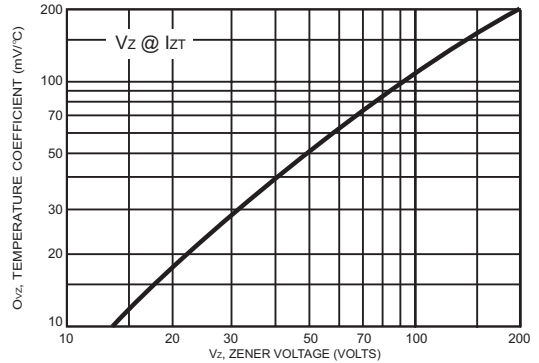


FIG.5- $V_Z = 3.3$ THRU 10 VOLTS

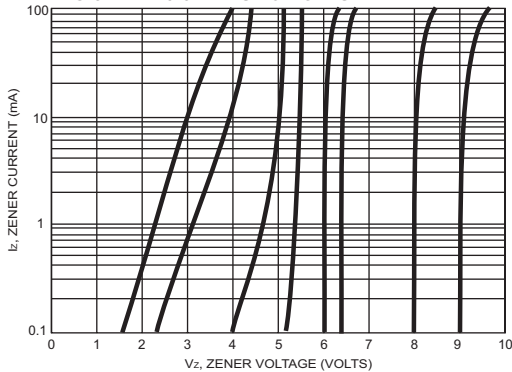
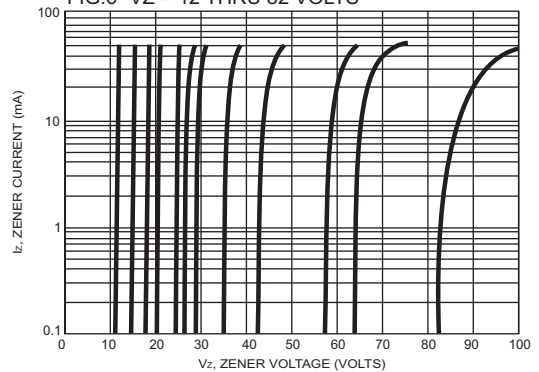


FIG.6- $V_Z = 12$ THRU 82 VOLTS



RATINGS AND CHARACTERISTIC CURVES (1SMB5926 THRU 1SMB5956)

FIG.7- EFFECT OF ZENER VOLTAGE

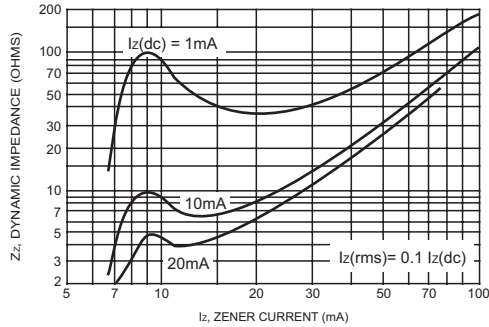


FIG.8- EFFECT OF ZENER CURRENT

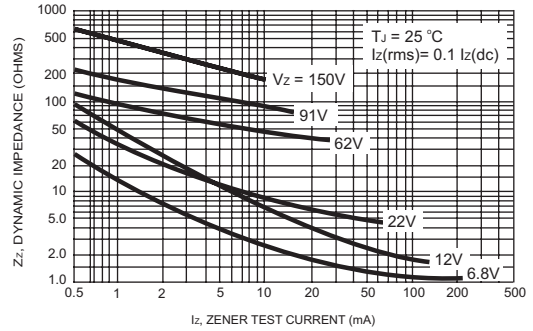


FIG.9- CAPACITANCE CURVE

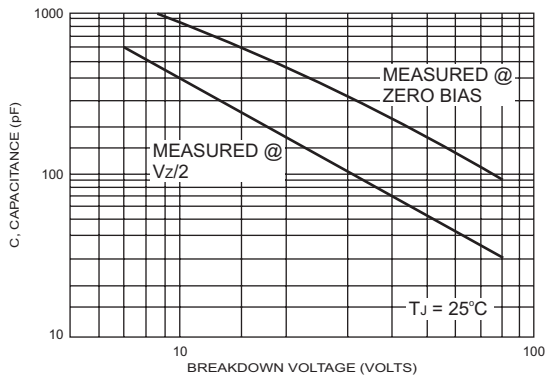


FIG.10- TYPICAL PULSE RATING CURVE

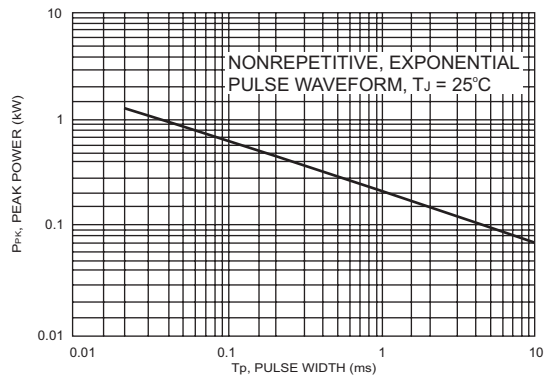


FIG.11- PULSE WAVEFORM

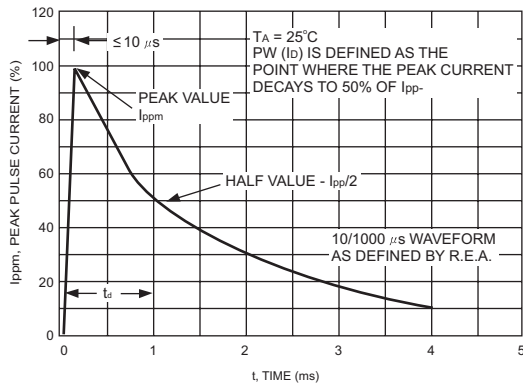


FIG.12- PULSE WAVEFORM

