1SMB5913B-1SMB5957B

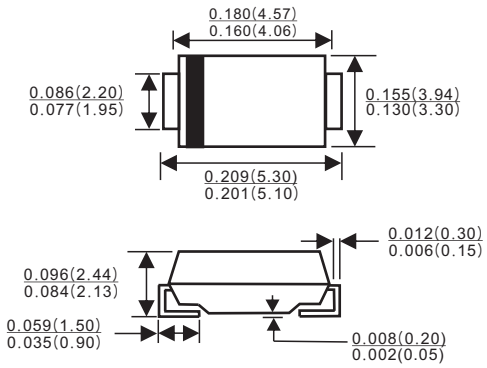
Surface Mount Zener Diodes

V_Z : 3.3 - 240 Volts
P_D : 1.5 Watts

SMB/DO-214AA

Features

- ✧ Complete Voltage Range 3.3 to 240 Volts
- ✧ High peak reverse power dissipation
- ✧ High reliability
- ✧ Low leakage current



Dimensions in inches and(millimeters)

Mechanical Data

- ✧ Case : SMA (DO-214AC) Molded plastic
- ✧ Epoxy : UL94V-O rate flame retardant
- ✧ Lead : Lead formed for Surface mount
- ✧ Polarity : Color band denotes cathode end
- ✧ Mounting position : Any
- ✧ Weight : 0.093 gram

MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified

Rating	Symbol	Value	Unit
DC Power Dissipation at T_L = 75 °C (Note1)	P_D	1.5	Watts
Maximum Forward Voltage at I_F = 200 mA	V_F	1.5	Volts
Junction Temperature Range	T_J	- 65 to + 150	°C
Storage Temperature Range	Ts	- 65 to + 150	°C
Thermal Resistance, Junction−to−Lead（Note2)	$R_{\theta JL}$	50	°C/W
Thermal Resistance, Junction−to−Ambient(Note3)	$R_{\theta JA}$	250	°C/W

Note :

(1) T_L = Lead temperature at 5.0 mm^2 (0.013 mm thick) copper land areas.

(2) 1 in square copper pad,FR-4 boa

(3) FR-4 Board,using recommended footpri

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ELECTRICAL CHARACTERISTICS

Rating at = 25 °C ambient temperature unless otherwise specified

Type	Marking	Nominal Zener Voltage		Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
		VZ @ I ZT	IZT	ZZT @ IZT	ZZK @ IZK	IZK	IR @ VR		IZM
		(V)	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	(mA)
1SMB5913B	**913B**	3.3	113.6	10	500	1.0	100	1.0	454
1SMB5914B	**914B**	3.6	104.2	9.0	500	1.0	75	1.0	416
1SMB5915B	**915B**	3.9	96.1	7.5	500	1.0	25	1.0	384
1SMB5916B	**916B**	4.3	87.2	6.0	500	1.0	5.0	1.0	348
1SMB5917B	**917B**	4.7	79.8	5.0	500	1.0	5.0	1.5	319
1SMB5918B	**918B**	5.1	73.5	4.0	500	1.0	5.0	2.0	294
1SMB5919B	**919B**	5.6	66.9	2.0	250	1.0	5.0	3.0	267
1SMB5920B	**920B**	6.2	60.5	2.0	200	1.0	5.0	4.0	241
1SMB5921B	**921B**	6.8	55.1	2.5	200	1.0	5.0	5.2	220
1SMB5922B	**922B**	7.5	50.0	3.0	400	0.5	5.0	6.0	200
1SMB5923B	**923B**	8.2	45.7	3.5	400	0.5	5.0	6.5	182
1SMB5924B	**924B**	9.1	41.2	4.0	500	0.5	5.0	7.0	164
1SMB5925B	**925B**	10	37.5	4.5	500	0.25	5.0	8.0	150
1SMB5926B	**926B**	11	34.1	5.5	550	0.25	5.0	8.4	136
1SMB5927B	**927B**	12	31.2	6.5	550	0.25	0.0	9.1	125
1SMB5928B	**928A**	13	28.8	7.0	550	0.25	1.0	9.9	115
1SMB5929B	**929B**	15	25.0	9.0	600	0.25	1.0	11.4	100
1SMB5930B	**930B**	16	23.4	10	600	0.25	1.0	12.2	93
1SMB5931B	**931B**	18	20.8	12	650	0.25	1.0	13.7	83
1SMB5932B	**932B**	20	18.7	14	650	0.25	1.0	15.2	75
1SMB5933B	**933B**	22	17.0	17.5	650	0.25	1.0	16.7	68
1SMB5934B	**934B**	24	15.6	19	700	0.25	1.0	18.2	62
1SMB5935B	**935B**	27	13.9	23	700	0.25	1.0	20.6	55
1SMB5936B	**936B**	30	12.5	26	750	0.25	1.0	22.8	50
1SMB5937B	**937B**	33	11.4	33	800	0.25	1.0	25.1	45
1SMB5938B	**938B**	36	10.4	38	850	0.25	1.0	27.4	41
1SMB5939B	**939B**	39	9.6	45	900	0.25	1.0	29.7	38
1SMB5940B	**940B**	43	8.7	53	950	0.25	1.0	32.7	34
1SMB5941B	**941B**	47	8.0	67	1000	0.25	1.0	35.8	31
1SMB5942B	**942B**	51	7.3	70	1100	0.25	1.0	38.8	29
1SMB5943B	**943B**	56	6.7	86	1300	0.25	1.0	42.6	26
1SMB5944B	**944B**	62	6.0	100	1500	0.25	1.0	47.1	24
1SMB5945B	**945B**	68	5.5	120	1700	0.25	1.0	51.7	22
1SMB5946B	**946B**	75	5.0	140	2000	0.25	1.0	56.0	20
1SMB5947B	**947B**	82	4.6	160	2500	0.25	1.0	62.2	18
1SMB5948B	**948B**	91	4.1	200	3000	0.25	1.0	69.2	16
1SMB5949B	**949B**	100	3.7	250	3100	0.25	1.0	76.0	15
1SMB5950B	**950B**	110	3.4	300	4000	0.25	1.0	83.6	13
1SMB5951B	**951B**	120	3.1	380	4500	0.25	1.0	91.2	12
1SMB5952B	**952B**	130	2.9	450	5000	0.25	1.0	98.8	11
1SMB5953B	**953B**	150	2.5	600	6000	0.25	1.0	114.0	10
1SMB5954B	**954B**	160	2.3	700	6500	0.25	1.0	121.6	9.0
1SMB5955B	**955B**	180	2.1	900	7000	0.25	1.0	136.8	8.0
1SMB5956A	**956B**	200	1.9	1200	8000	0.25	1.0	152.0	7.0
1SMB5957B	**957B**	240	1.5	1600	9000	0.25	1.0	182.4	6.0

Note :

(1) Suffix " A " indicates ± 10% tolerance, suffix " B " indicates ± 5.0% tolerance.

RATING AND TYPICAL CHARACTERISTIC CURVES (T_A = 25°C)

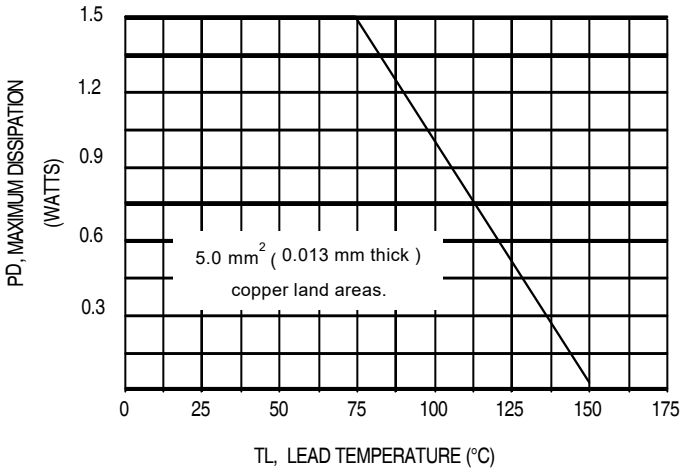

Figure 1. POWER TEMPERATURE DERATING CURVE

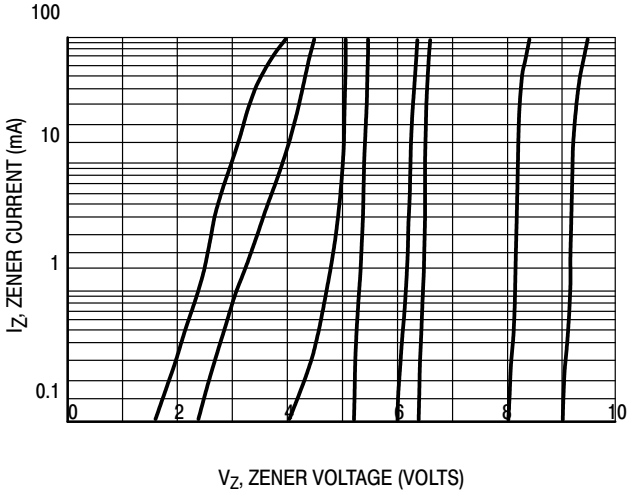

Figure 2. V_Z – 3.3 thru 10 Volts

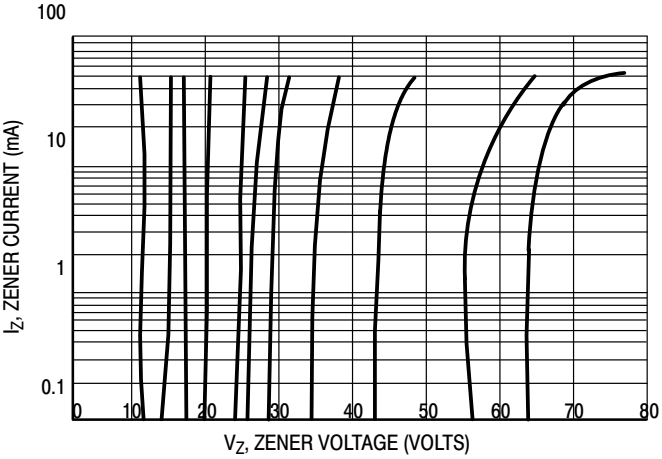

Figure 3. V_Z = 12 thru 68 Volts

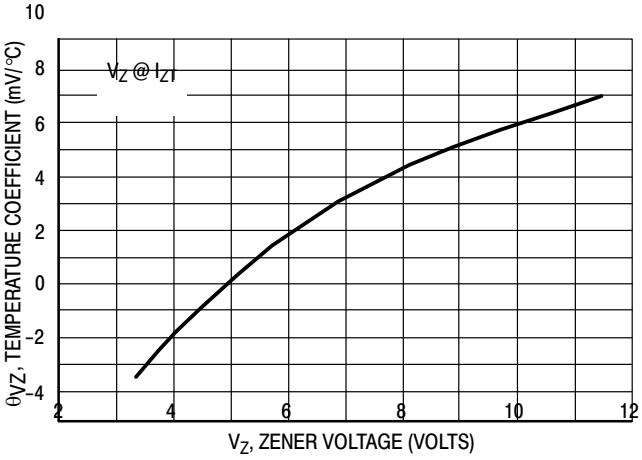

Figure 4. Zener Voltage – 3.3 to 12 Volts

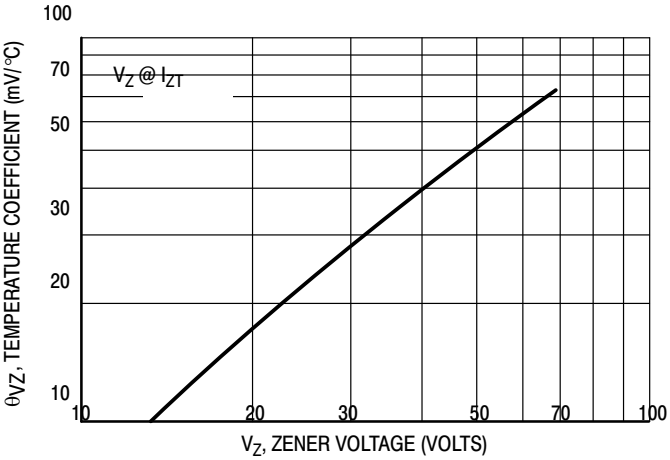

Figure 5. Zener Voltage – 12 to 68 Volts

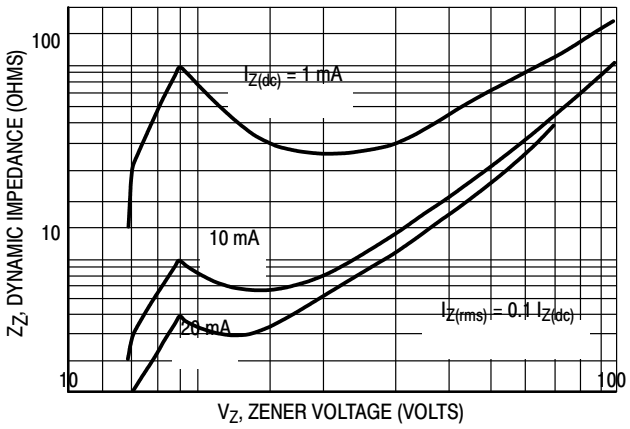

Figure 6. Effect of Zener Voltage

RATING AND TYPICAL CHARACTERISTIC CURVES (T_A = 25°C)

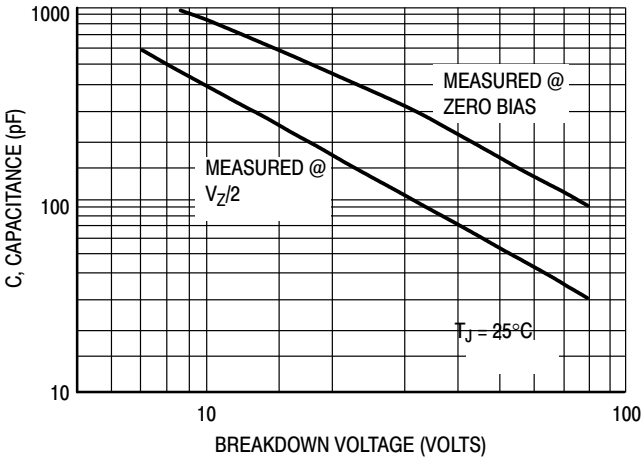

Figure 7. Capacitance Curve

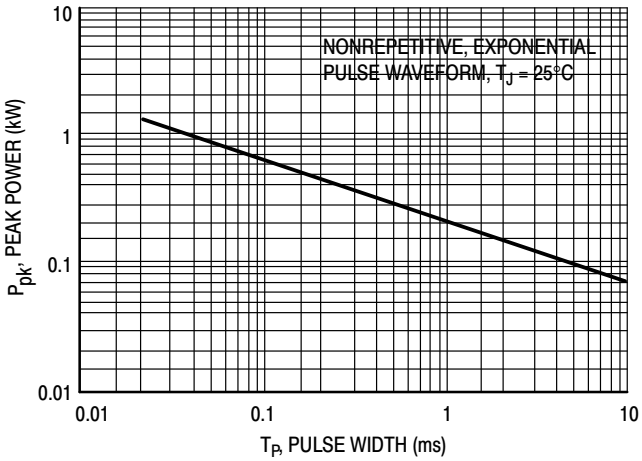

Figure 8. Typical Pulse Rating Curve

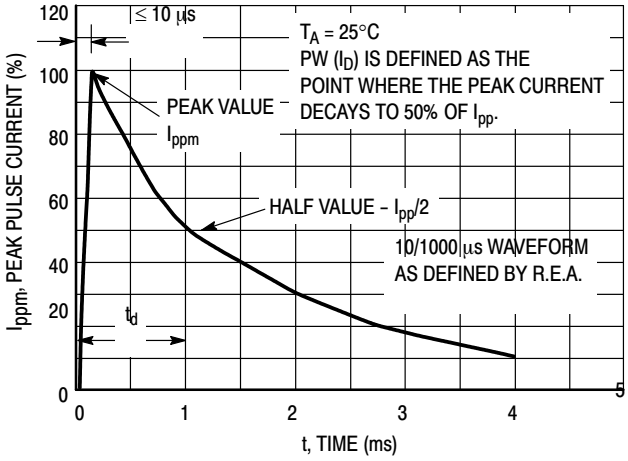

Figure 9. Pulse Waveform

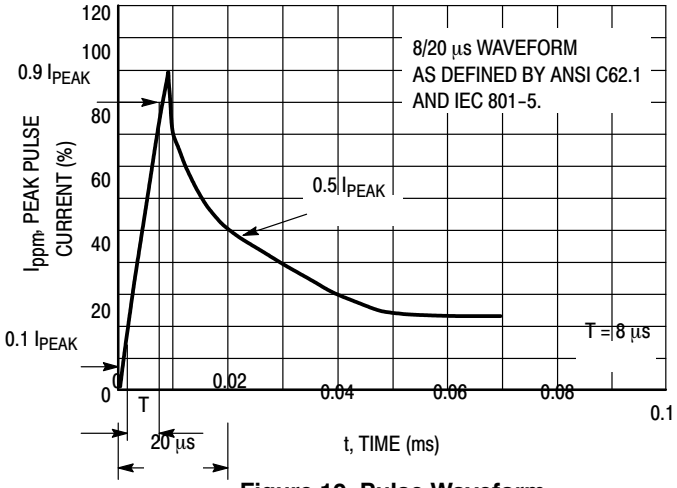

Figure 10. Pulse Waveform

PACKAGE	SPQ/PCS	CARTON SPQ/PCS	CARTON SIZE/CM	CARTON GW/KG	CARTON NW/KG
SMB	3000/REEL	48000	36X35.8X36.5	12.00	11.00