

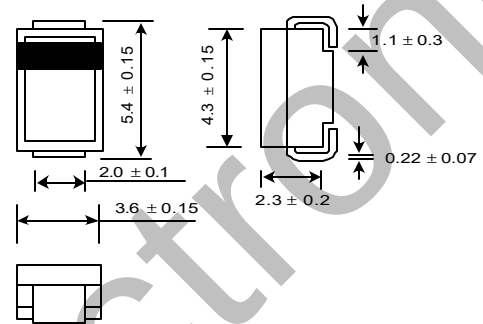

V_z : 3.3 - 240 Volts
P_D : 3.0 Watts
SMB (DO-214AA)

Features

- * Complete Voltage Range 3.3 to 240 Volts
- * High peak reverse power dissipation
- * High reliability
- * Low leakage current
- * ESD Rating of Class 3 (> 16 kV) per Human Body Model

Mechanical Data

- * Case : SMB (DO-214AA) Molded plastic
- * Epoxy : UL94V-0 rate flame retardant
- * Lead : Lead formed for Surface mount
- * Polarity : Color band denotes cathode end
- * Mounting position : Any
- * Weight : 0.093 gram


Dimensions in millimeter

Rating	Symbol	Value	Unit
DC Power Dissipation at T _L = 75 °C (Note1)	P _D	3.0	Watts
Maximum Forward Voltage at I _F = 200 mA	V _F	0.85	Volts
Junction Temperature Range	T _J	- 65 to + 150	°C
Storage Temperature Range	T _s	- 65 to + 150	°C
Typical Thermal Resistance Junction to Ambient(Note2)	R _{θJA}	226	°C/W
Typical Thermal Resistance Junction to Lead	R _{θJL}	25	°C/W

Note :

- (1) T_L = Lead temperature at 5.0 mm² (0.013 mm thick) copper land areas.
- (2)FR-4 board,using recommended footprint.

ELECTRICAL CHARACTERISTICS

Rating at = 25 C ambient temperature unless otherwise specified

TYPE	Nominal Zener				Maximum Zener			Maximum Reverse Leakage		Maximum DC
	Voltage			IZT	Impedance		Current		Zener Current	
	VZ @ I ZT				ZZT @ I ZT	ZZK @ IZK	IZK	IR @ V R	IZM	
	(V)			(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	(mA)
3SMB5913B	3.13	3.3	3.47	113.6	10	500	1	100	1	454
3SMB5914B	3.42	3.6	3.78	104.2	9	500	1	75	1	416
3SMB5915B	3.7	3.9	4.1	96.1	7.5	500	1	25	1	384
3SMB5916B	4.08	4.3	4.52	87.2	6	500	1	5	1	348
3SMB5917B	4.46	4.7	4.94	79.8	5	500	1	5	1.5	319
3SMB5918B	4.84	5.1	5.36	73.5	4	500	1	5	2	294
3SMB5919B	5.32	5.6	5.88	66.9	2	250	1	5	3	267
3SMB5920B	5.89	6.2	6.51	60.5	2	200	1	5	4	241
3SMB5921B	6.46	6.8	7.14	55.1	2.5	200	1	5	5.2	220
3SMB5922B	7.12	7.5	7.88	50	3	400	0.5	5	6	200
3SMB5923B	7.79	8.2	8.61	45.7	3.5	400	0.5	5	6.5	182
3SMB5924B	8.64	9.1	9.56	41.2	4	500	0.5	5	7	164
3SMB5925B	9.5	10	10.5	37.5	4.5	500	0.25	5	8	150
3SMB5926B	10.45	11	11.55	34.1	5.5	550	0.25	1	8.4	136
3SMB5927B	11.4	12	12.6	31.2	6.5	550	0.25	1	9.1	125
3SMB5928B	12.35	13	13.65	28.8	7	550	0.25	1	9.9	115
3SMB5929B	14.25	15	15.75	25	9	600	0.25	1	11.4	100
3SMB5930B	15.2	16	16.8	23.4	10	600	0.25	1	12.2	93
3SMB5931B	17.1	18	18.9	20.8	12	650	0.25	1	13.7	83
3SMB5932B	19	20	21	18.7	14	650	0.25	1	15.2	75
3SMB5933B	20.9	22	23.1	17	17.5	650	0.25	1	16.7	68
3SMB5934B	22.8	24	25.2	15.6	19	700	0.25	1	18.2	62
3SMB5935B	25.65	27	28.35	13.9	23	700	0.25	1	20.6	55
3SMB5936B	28.5	30	31.5	12.5	28	750	0.25	1	22.8	50
3SMB5937B	31.35	33	34.65	11.4	33	800	0.25	1	25.1	45
3SMB5938B	34.2	36	37.8	10.4	38	850	0.25	1	27.4	41
3SMB5939B	37.05	39	40.95	9.6	45	900	0.25	1	29.7	38
3SMB5940B	40.85	43	45.15	8.7	53	950	0.25	1	32.7	34
3SMB5941B	44.65	47	49.35	8	67	1000	0.25	1	35.8	31
3SMB5942B	48.45	51	53.55	7.3	70	1100	0.25	1	38.8	29
3SMB5943B	53.2	56	58.8	6.7	86	1300	0.25	1	42.6	26
3SMB5944B	58.9	62	65.1	6	100	1500	0.25	1	47.1	24
3SMB5945B	64.6	68	71.4	5.5	80	1700	0.25	0.1	51.7	22
3SMB5946B	71.25	75	78.75	5	140	2000	0.25	1	56	20
3SMB5947B	77.9	82	86.1	4.6	160	2500	0.25	1	62.2	18
3SMB5948B	86.45	91	95.55	4.1	200	3000	0.25	1	69.2	16
3SMB5949B	95	100	105	3.7	250	3100	0.25	1	76	15
3SMB5950B	104.5	110	115.5	3.4	300	4000	0.25	1	83.6	13
3SMB5951B	114	120	126	3.1	380	4500	0.25	1	91.2	12
3SMB5952B	123.5	130	136.5	2.9	450	5000	0.25	1	98.8	11
3SMB5953B	142.5	150	157.5	2.5	600	6000	0.25	1	114	10
3SMB5954B	152	160	168	2.3	700	6500	0.25	1	121.6	9
3SMB5955B	171	180	189	2.1	900	7000	0.25	1	136.8	8
3SMB5956B	190	200	210	1.9	1200	8000	0.25	1	152	7
3SMB5957B	228	240	252	1.5	1600	9000	0.25	1	182.4	6

Note :

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

RATING AND CHARACTERISTICS CURVES

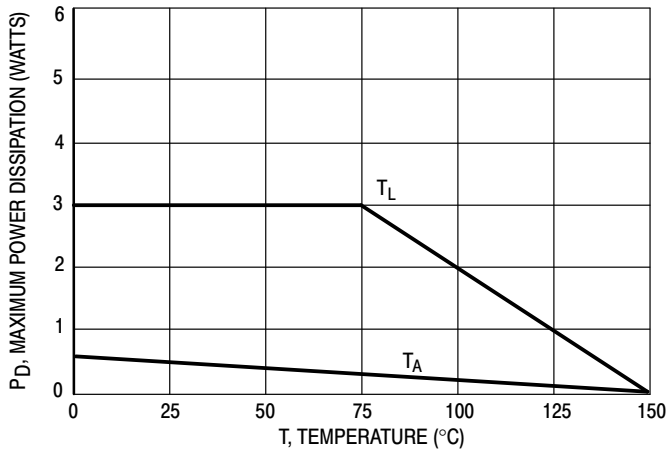


Figure 1. Steady State Power Derating

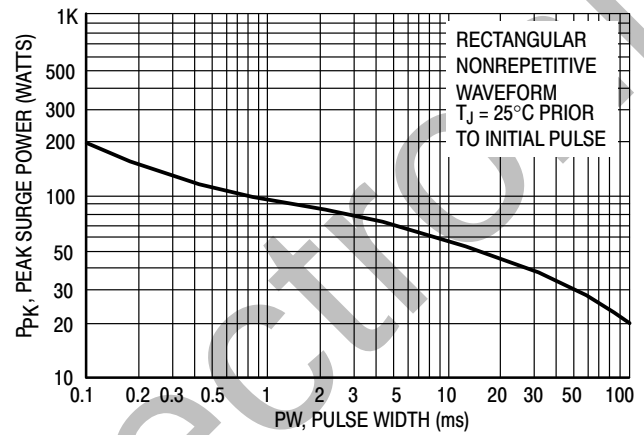


Figure 2. Maximum Surge Power

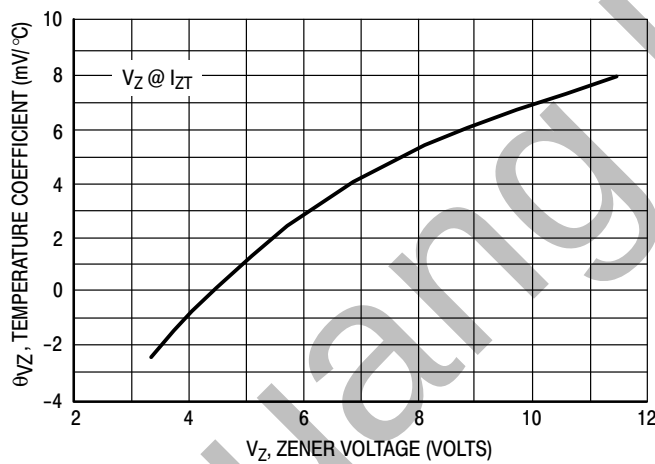


Figure 3. Zener Voltage - To 12 Volts

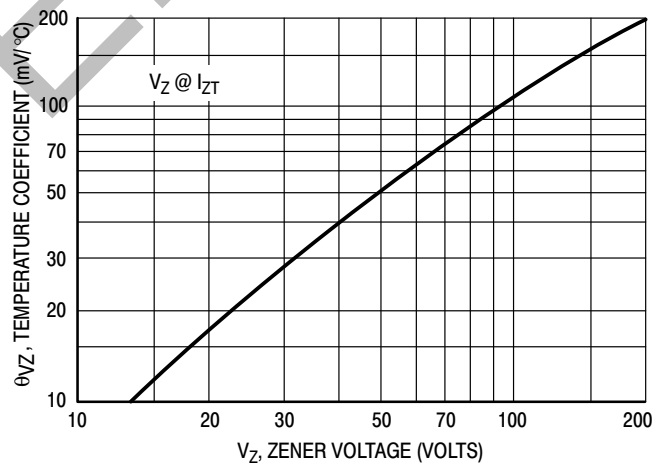


Figure 4. Zener Voltage - 14 To 200 Volts

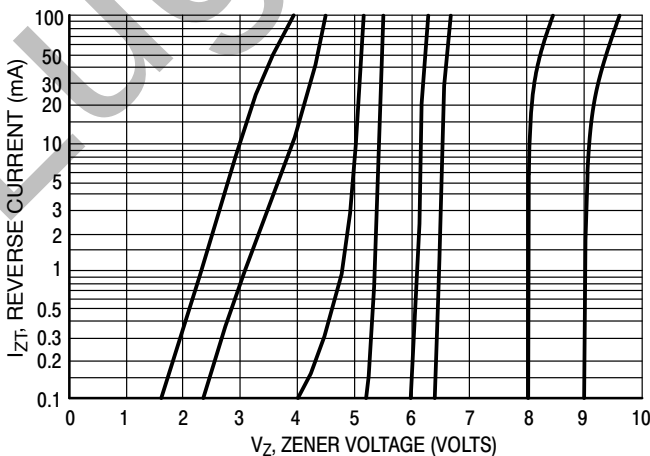


Figure 5. $V_Z = 3.3$ thru 10 Volts

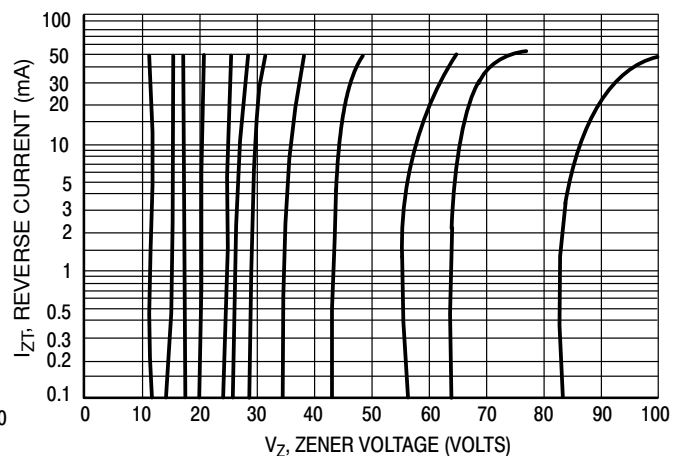


Figure 6. $V_Z = 12$ thru 82 Volts

RATING AND CHARACTERISTICS CURVES

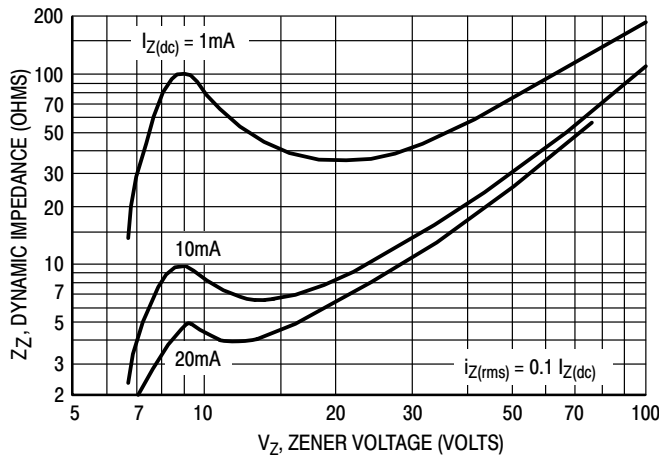


Figure 7. Effect of Zener Voltage

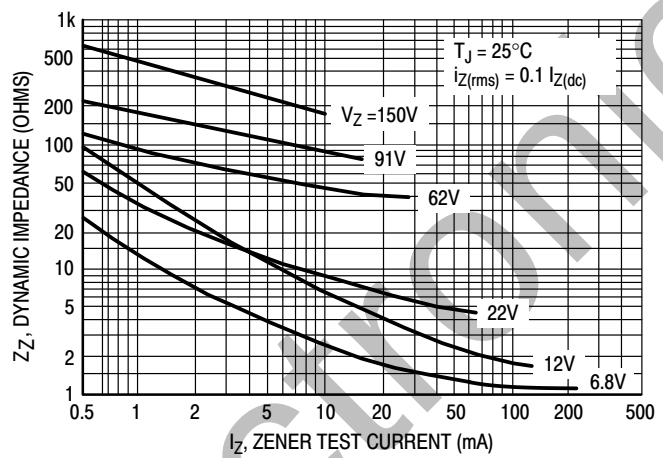


Figure 8. Effect of Zener Current

Rating and Typical Characteristic Curves ($T_A = 25^\circ\text{C}$)

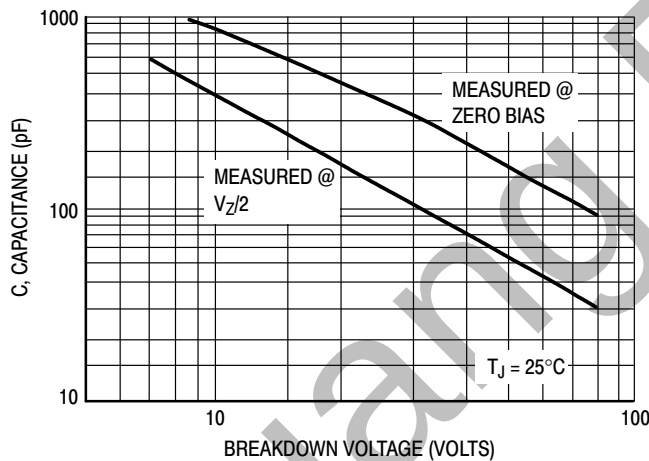


Figure 9. Capacitance Curve

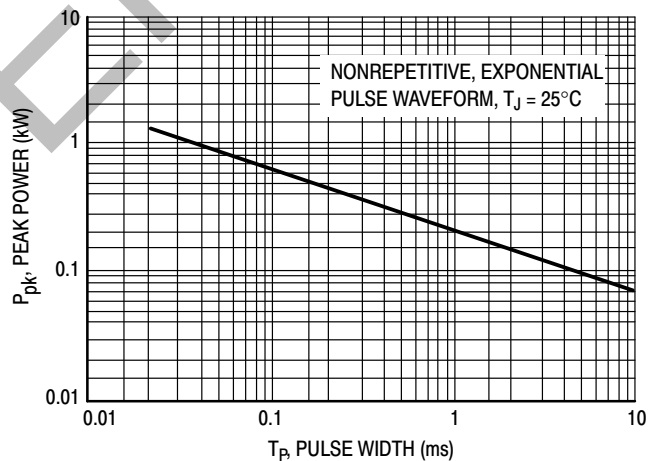


Figure 10. Typical Pulse Rating Curve

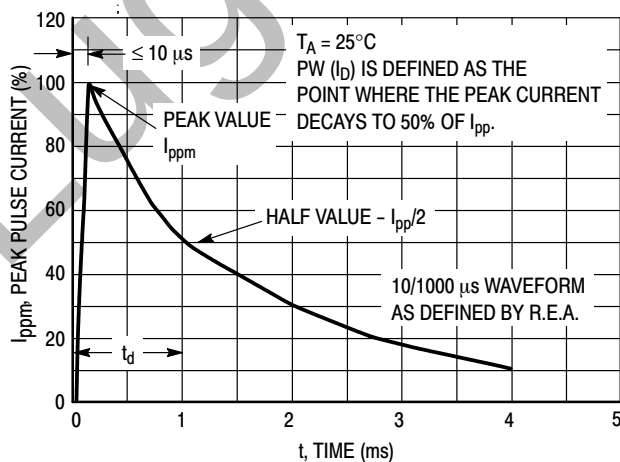


Figure 11. Pulse Waveform

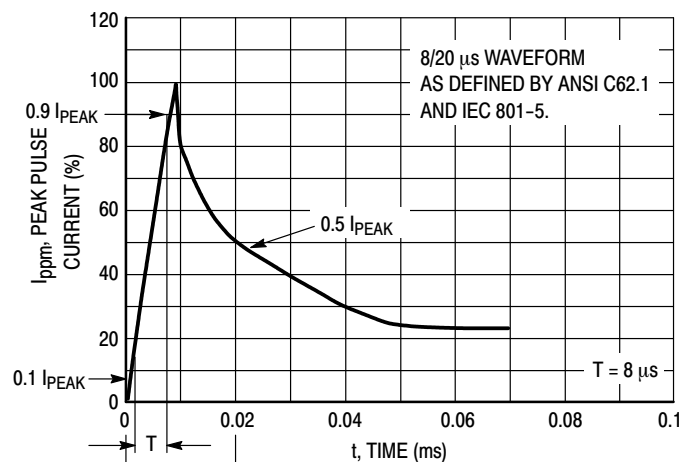
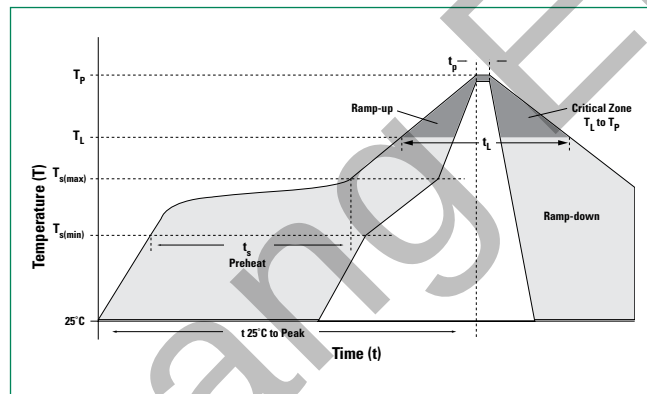


Figure 12. Pulse Waveform

SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (t_s)	60 – 180 secs
Average ramp up rate (Liquidus Temp (T_A) to peak		3°C/second max
$T_{s(max)}$ to T_A - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_A) (Liquidus)	217°C
	- Time (min to max) (t_s)	60 – 150 seconds
Peak Temperature (T_p)		260 ^{+0/-5} °C
Time within 5°C of actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes Max.
Do not exceed		260°C



MOUNTING PAD LAYOUT

