



V_Z : 3.3 - 240 Volts
P_D : 3.0 Watts

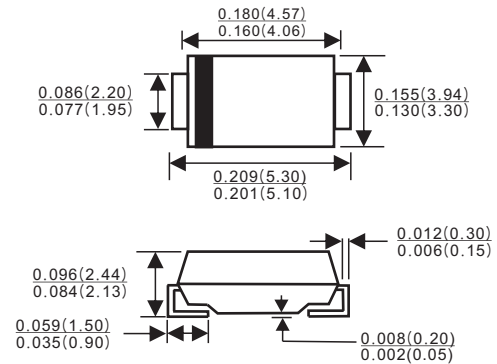
Features

- * Complete Voltage Range 3.3 to 200 Volts
- * High peak reverse power dissipation
- * High reliability
- * Low leakage current

Mechanical Data

- * Case : SMB (DO-214AA) 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

SMB (DO-214AA)



Dimensions in millimeter

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	3.0	Watts
Maximum Forward Voltage at I _F = 200 mA	V _F	1.5	Volts
Junction Temperature Range	T _J	- 55 to + 150	°C
Storage Temperature Range	T _s	- 55 to + 150	°C

Note :

(1) T_L = Lead temperature at 5.0 mm² (0.013 mm thick) copper land areas.



ELECTRICAL CHARACTERISTICS

Rating at = 25 °C ambient temperature unless otherwise specified

TYPE	Nominal Zener Voltage		Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current
	V _Z @ I _{ZT}	I _{ZT}	Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	I _{ZK}	I _R @ V _R	I _{ZM}	
	(V)	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	(mA)
3SMB5913A	3.3	113.6	10	500	1.0	100	1.0	454
3SMB5914A	3.6	104.2	9.0	500	1.0	75	1.0	416
3SMB5915A	3.9	96.1	7.5	500	1.0	25	1.0	384
3SMB5916A	4.3	87.2	6.0	500	1.0	5.0	1.0	348
3SMB5917A	4.7	79.8	5.0	500	1.0	5.0	1.5	319
3SMB5918A	5.1	73.5	4.0	500	1.0	5.0	2.0	294
3SMB5919A	5.6	66.9	2.0	250	1.0	5.0	3.0	267
3SMB5920A	6.2	60.5	2.0	200	1.0	5.0	4.0	241
3SMB5921A	6.8	55.1	2.5	200	1.0	5.0	5.2	220
3SMB5922A	7.5	50.0	3.0	400	0.5	5.0	6.0	200
3SMB5923A	8.2	45.7	3.5	400	0.5	5.0	6.5	182
3SMB5924A	9.1	41.2	4.0	500	0.5	5.0	7.0	164
3SMB5925A	10	37.5	4.5	500	0.25	5.0	8.0	150
3SMB5926A	11	34.1	5.5	550	0.25	1.0	8.4	136
3SMB5927A	12	31.2	6.5	550	0.25	1.0	9.1	125
3SMB5928A	13	28.8	7.0	550	0.25	1.0	9.9	115
3SMB5929A	15	25.0	9.0	600	0.25	1.0	11.4	100
3SMB5930A	16	23.4	10	600	0.25	1.0	12.2	93
3SMB5931A	18	20.8	12	650	0.25	1.0	13.7	83
3SMB5932A	20	18.7	14	650	0.25	1.0	15.2	75
3SMB5933A	22	17.0	17.5	650	0.25	1.0	16.7	68
3SMB5934A	24	15.6	19	700	0.25	1.0	18.2	62
3SMB5935A	27	13.9	23	700	0.25	1.0	20.6	55
3SMB5936A	30	12.5	28	750	0.25	1.0	22.8	50
3SMB5937A	33	11.4	33	800	0.25	1.0	25.1	45
3SMB5938A	36	10.4	38	850	0.25	1.0	27.4	41
3SMB5939A	39	9.6	45	900	0.25	1.0	29.7	38
3SMB5940A	43	8.7	53	950	0.25	1.0	32.7	34
3SMB5941A	47	8.0	67	1000	0.25	1.0	35.8	31
3SMB5942A	51	7.3	70	1100	0.25	1.0	38.8	29
3SMB5943A	56	6.7	86	1300	0.25	1.0	42.6	26
3SMB5944A	62	6.0	100	1500	0.25	1.0	47.1	24
3SMB5945A	68	5.5	120	1700	0.25	1.0	51.7	22
3SMB5946A	75	5.0	140	2000	0.25	1.0	56.0	20
3SMB5947A	82	4.6	160	2500	0.25	1.0	62.2	18
3SMB5948A	91	4.1	200	3000	0.25	1.0	69.2	16
3SMB5949A	100	3.7	250	3100	0.25	1.0	76.0	15
3SMB5950A	110	3.4	300	4000	0.25	1.0	83.6	13
3SMB5951A	120	3.1	380	4500	0.25	1.0	91.2	12
3SMB5952A	130	2.9	450	5000	0.25	1.0	98.8	11
3SMB5953A	150	2.5	600	6000	0.25	1.0	114.0	10
3SMB5954A	160	2.3	700	6500	0.25	1.0	121.6	9.0
3SMB5955A	180	2.1	900	7000	0.25	1.0	136.8	8.0
3SMB5956A	200	1.9	1200	8000	0.25	1.0	152.0	7.0
3SMB5957A	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 CHARACTERISTICS CURVES

3SMB5913A-3SMB5957A

Silicon Zener Diodes

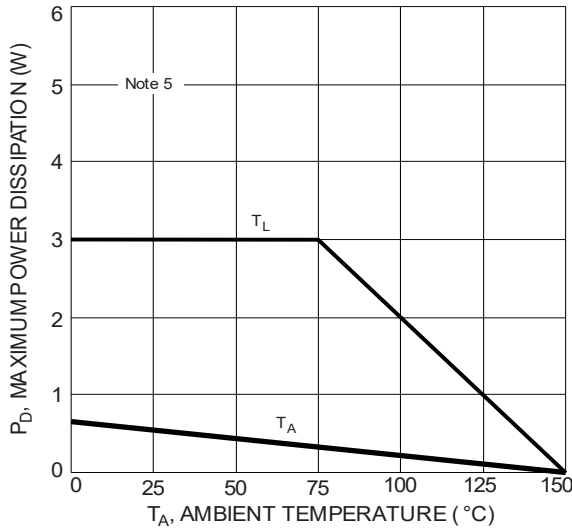


Figure 1 Power Dissipation vs. Ambient Temperature

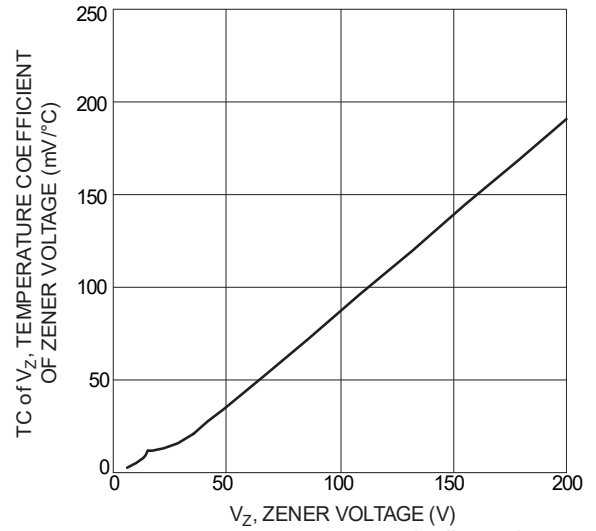


Figure 2 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage

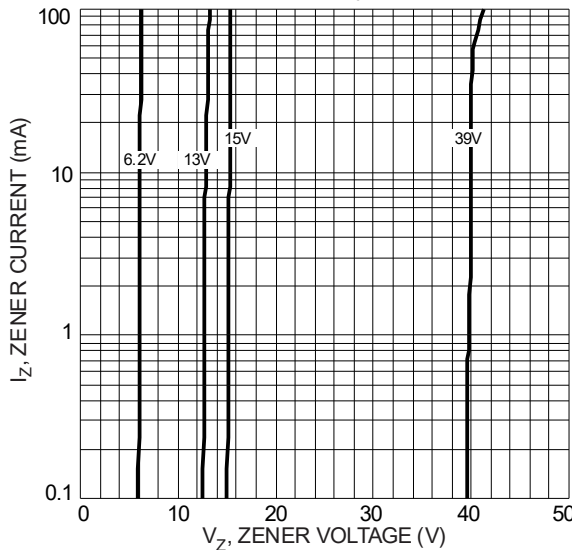


Figure 3 Typical Zener Breakdown Characteristics

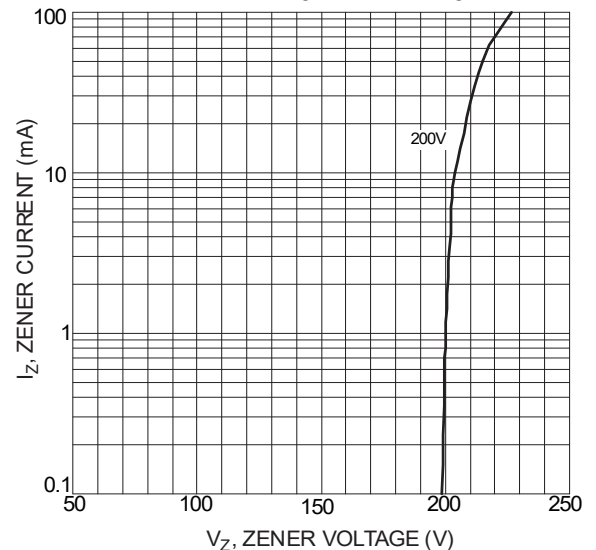


Figure 4 Typical Zener Breakdown Characteristics

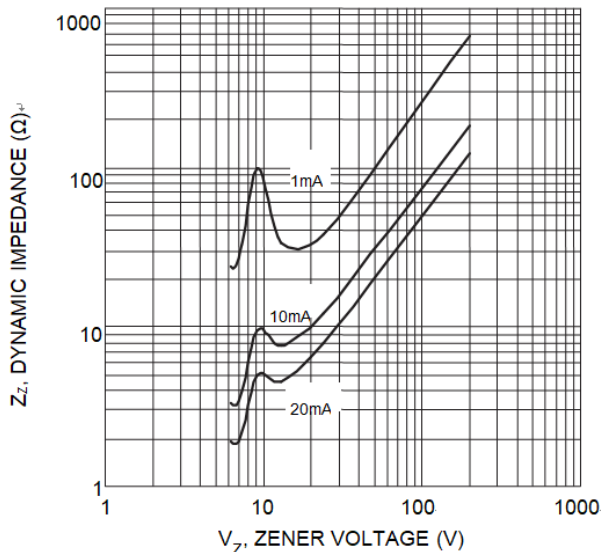


Figure 5 Effect of Zener Voltage

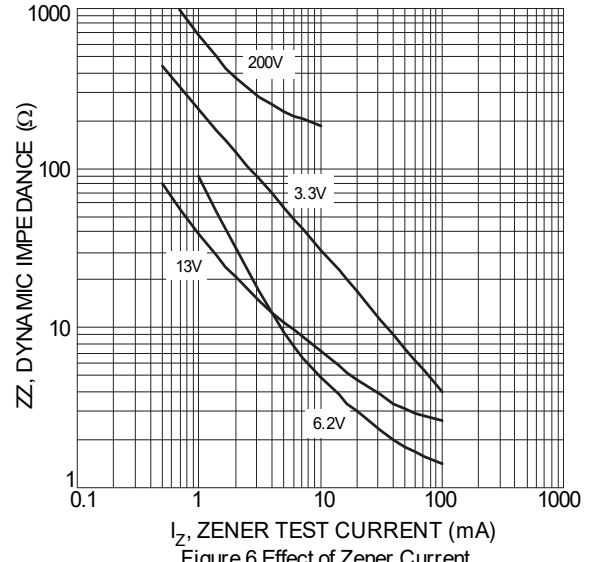
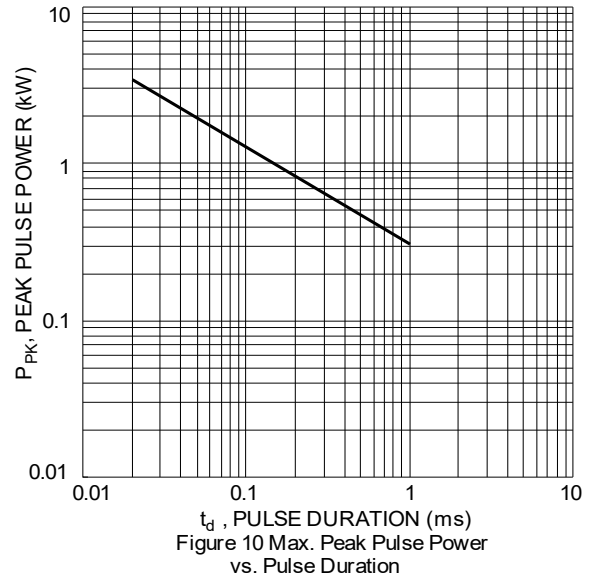
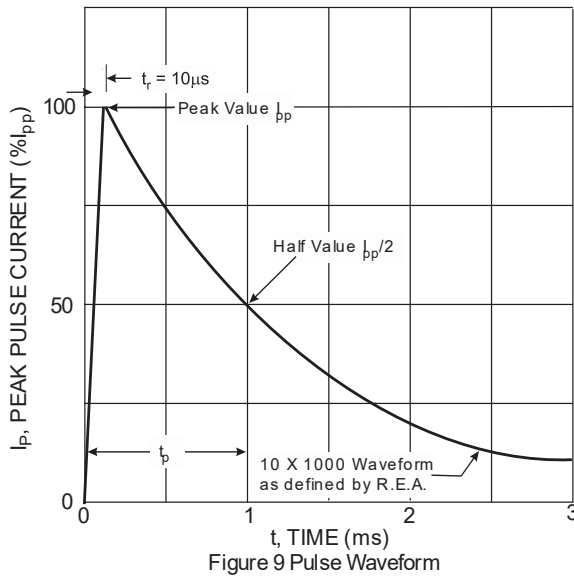
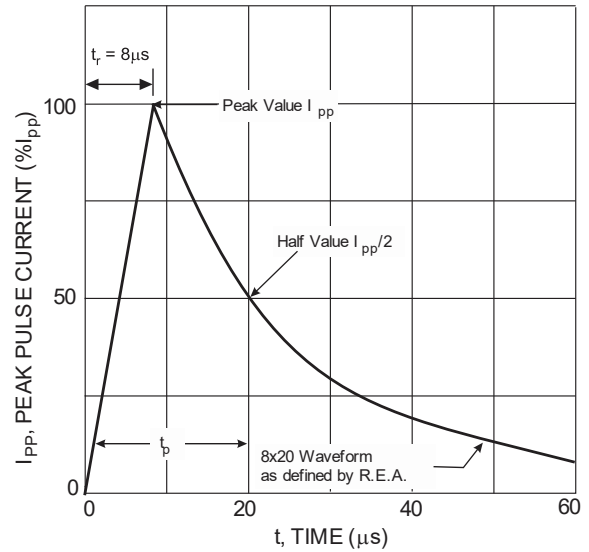
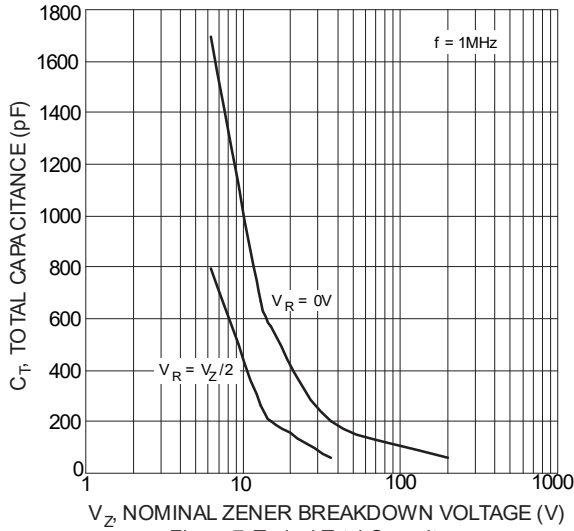


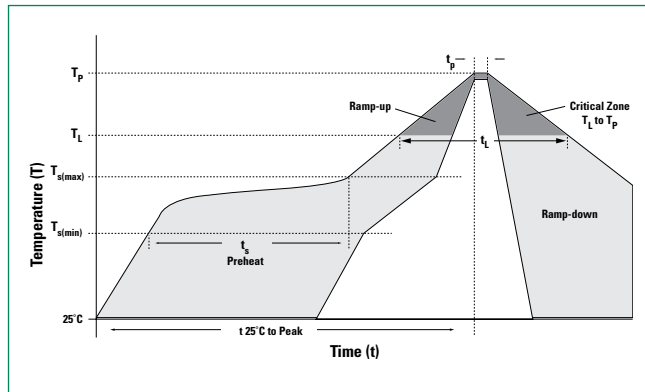
Figure 6 Effect of Zener Current



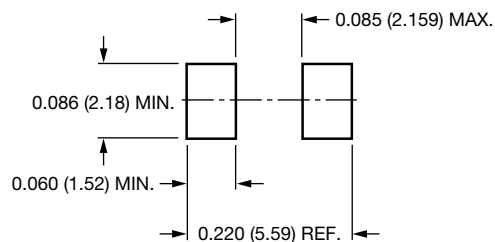


SOLDERING PARAMETERS

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



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