

1SMA5913B - 1SMA5956B

SURFACE MOUNT SILICON ZENER DIODES

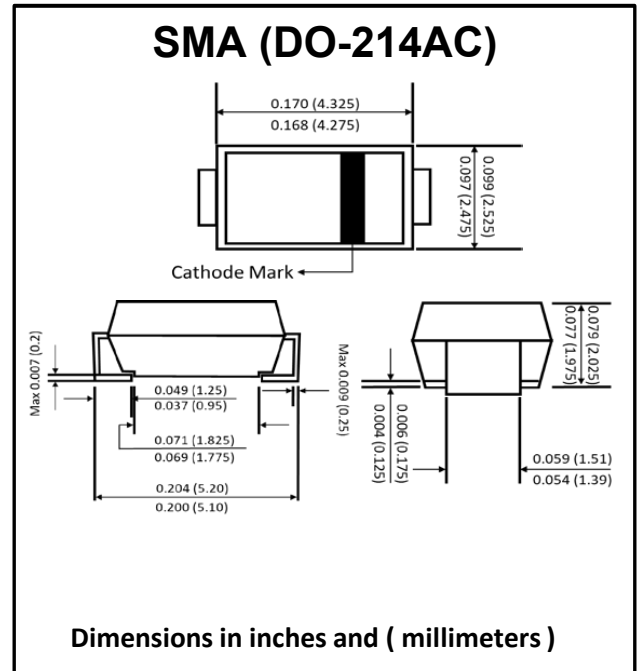
V_Z : 3.3 - 200 Volts
 P_D : 1.5 Watts

FEATURES :

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

MECHANICAL DATA :

- * Case : SMA Molded plastic
- * Epoxy : UL94V-O rate flame retardant
- * Polarity : Color band denotes cathode end
- * Mounting position : Any
- * Weight : 0.060 gram (Approximately)

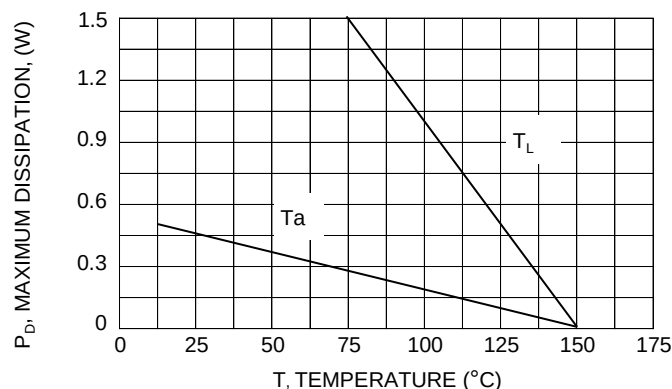


MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified

Rating	Symbol	Value	Unit
DC Power Dissipation @ $T_L = 75\text{ }^{\circ}\text{C}$	P_D	1.5	W
Measured zero lead length(1" square copper pad, FR-4 board)		20	mW/ $^{\circ}\text{C}$
Derate above 75 °C			
Thermal Resistance Junction to Lead	$R_{\theta JL}$	50	$^{\circ}\text{C/W}$
DC Power Dissipation @ $T_a = 25\text{ }^{\circ}\text{C}$	P_D	0.5	W
(FR-4 board) Derate above 25 °C		4.0	mW/ $^{\circ}\text{C}$
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	250	$^{\circ}\text{C/W}$
Maximum Forward Voltage at $I_F = 200\text{ mA}$	V_F	1.5	V
Operating Junction and Storage Temperature Range	T_J, T_{STG}	- 65 to + 150	$^{\circ}\text{C}$

Fig. 1 POWER TEMPERATURE DERATING CURVE





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	Maximum Surge Current
	V _Z @ I _{ZT}	I _{ZT}	Z _{ZT} @ I _{ZT}	Z _{ZK} @ I _{ZK}	I _{ZK}	I _R @ V _R		I _{ZM}	I _{ZSM}
	(V)	(mA)	(Ω)	(Ω)	(mA)	(μA)	(V)	(mA)	(A)
1SMA5913B	3.3	113.6	10	500	1.0	100	1.0	454	4.329
1SMA5914B	3.6	104.2	9.0	500	1.0	75	1.0	416	3.968
1SMA5915B	3.9	96.1	7.5	500	1.0	25	1.0	384	3.663
1SMA5916B	4.3	87.2	6.0	500	1.0	5.0	1.0	348	3.322
1SMA5917B	4.7	79.8	5.0	500	1.0	5.0	1.5	319	3.040
1SMA5918B	5.1	73.5	4.0	400	1.0	5.0	2.0	294	2.801
1SMA5919B	5.6	66.9	2.0	300	1.0	5.0	3.0	267	2.551
1SMA5920B	6.2	60.5	2.0	200	1.0	5.0	4.0	241	2.304
1SMA5921B	6.8	55.1	2.5	200	1.0	5.0	5.2	220	2.101
1SMA5922B	7.5	50.0	3.0	400	0.5	5.0	6.0	200	1.905
1SMA5923B	8.2	45.7	3.5	400	0.5	5.0	6.5	182	1.742
1SMA5924B	9.1	41.2	4.0	500	0.5	5.0	7.0	164	1.570
1SMA5925B	10	37.5	4.5	500	0.25	5.0	8.0	150	1.429
1SMA5926B	11	34.1	5.5	550	0.25	1.0	8.4	136	1.299
1SMA5927B	12	31.2	6.5	550	0.25	1.0	9.1	125	1.190
1SMA5928B	13	28.8	7.0	550	0.25	1.0	9.9	115	1.099
1SMA5929B	15	25.0	9.0	600	0.25	1.0	11.4	100	0.952
1SMA5930B	16	23.4	10	600	0.25	1.0	12.2	93	0.893
1SMA5931B	18	20.8	12	650	0.25	1.0	13.7	83	0.794
1SMA5932B	20	18.7	14	650	0.25	1.0	15.2	75	0.714
1SMA5933B	22	17.0	17.5	650	0.25	1.0	16.7	68	0.649
1SMA5934B	24	15.6	19	700	0.25	1.0	18.2	62	0.595
1SMA5935B	27	13.9	23	700	0.25	1.0	20.6	55	0.529
1SMA5936B	30	12.5	26	750	0.25	1.0	22.8	50	0.476
1SMA5937B	33	11.4	33	800	0.25	1.0	25.1	45	0.433
1SMA5938B	36	10.4	38	850	0.25	1.0	27.4	41	0.397
1SMA5939B	39	9.6	45	900	0.25	1.0	29.7	38	0.366
1SMA5940B	43	8.7	53	950	0.25	1.0	32.7	34	0.332
1SMA5941B	47	8.0	67	1000	0.25	1.0	35.8	31	0.304
1SMA5942B	51	7.3	70	1100	0.25	1.0	38.8	29	0.280
1SMA5943B	56	6.7	86	1300	0.25	1.0	42.6	26	0.255
1SMA5944B	62	6.0	100	1500	0.25	1.0	47.1	24	0.230
1SMA5945B	68	5.5	120	1700	0.25	1.0	51.7	22	0.210
1SMA5946B	75	5.0	140	2000	0.25	1.0	56.0	20	0.190
1SMA5947B	82	4.6	160	2500	0.25	1.0	62.2	18	0.174
1SMA5948B	91	4.1	200	3000	0.25	1.0	69.2	16	0.157
1SMA5949B	100	3.7	250	3100	0.25	1.0	76.0	15	0.143
1SMA5950B	110	3.4	300	4000	0.25	1.0	83.6	13	0.130
1SMA5951B	120	3.1	380	4500	0.25	1.0	91.2	12	0.119
1SMA5952B	130	2.9	450	5000	0.25	1.0	98.8	11	0.110
1SMA5953B	150	2.5	600	6000	0.25	1.0	114.0	10	0.095
1SMA5954B	160	2.3	700	6500	0.25	1.0	121.6	9.0	0.089
1SMA5955B	180	2.1	900	7000	0.25	1.0	136.8	8.0	0.079
1SMA5956B	200	1.9	1900	9990	0.25	1.0	152.0	7.0	0.071

Note :

- (1) Suffix " B " indicates $\pm 5\%$ tolerance, suffix " A " indicates $\pm 10\%$ tolerance.
- (2) The surge current (I_{ZSM}) is specified as the maximum peak of a non- recurrent half-sin wave of 8.3 ms duration.

RATING AND CHARACTERISTIC CURVES (1SMA5913B - 1SMA5956B)

Fig. 2 V_Z - 3.3 thru 10 Volts

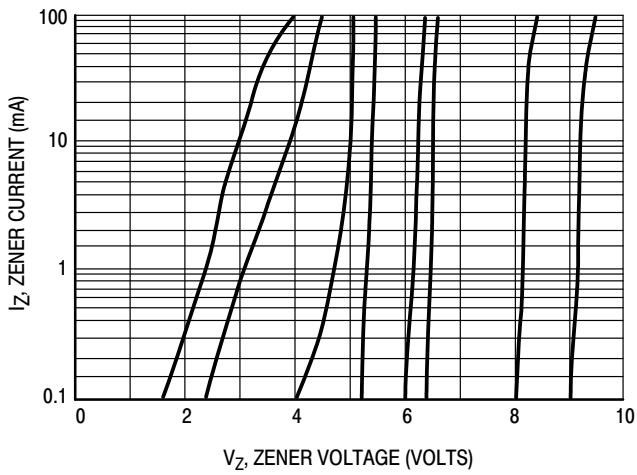


Fig. 3 V_Z = 12 thru 68 Volts

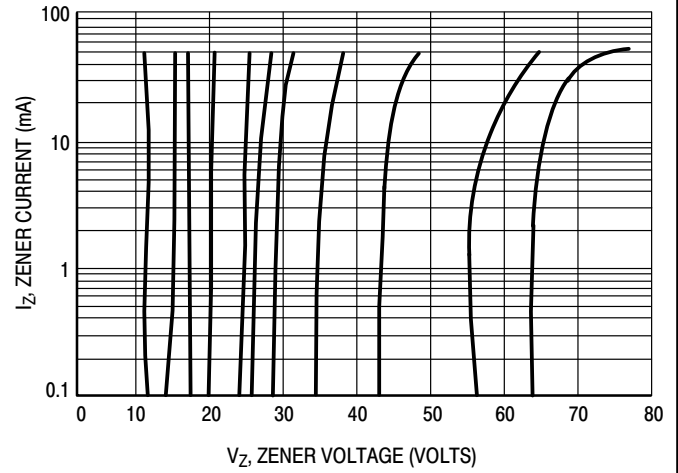


Fig. 4 Typical Pulse Rating Curve

