

1SMB5913C - 1SMB5956C

SILICON ZENER DIODES

V_Z : 3.3 - 200 Volts

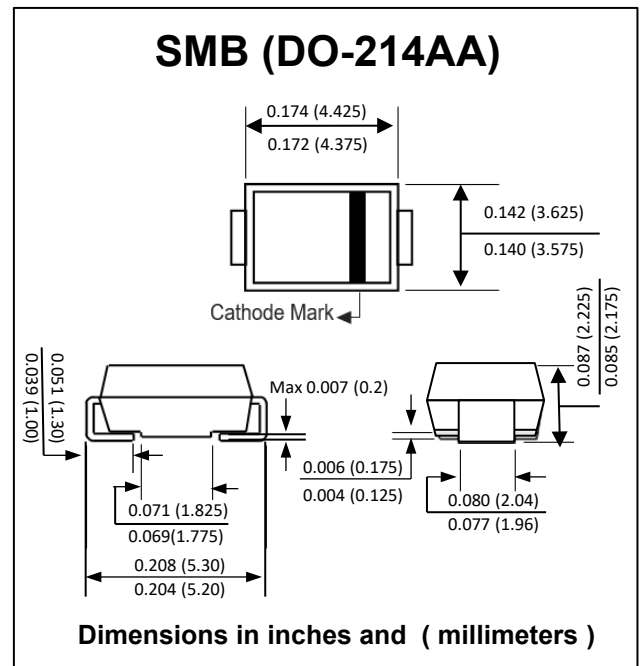
P_D : 3.0 Watts

FEATURES :

- * Complete Voltage Range 3.3 to 200 Volts
- * High peak reverse power dissipation
- * Flat handling surface for accurate placement
- * Low leakage current
- * **Pb / RoHS Free**

MECHANICAL DATA

- * Case : SMB Molded plastic
- * Epoxy : UL94V-0 rate flame retardant
- * Lead : Lead Formed for Surface Mount
- * Polarity : Color band denotes cathode end
- * Mounting position : Any
- * Weight : 0.108 gram



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Maximum Steady State Power Dissipation at $T_L = 75^\circ\text{C}$, Measured at Zero Lead Length Derate Above 75°C	P_D	3.0	W
Thermal Resistance From Junction to Lead	$R_{\theta JL}$	25	$^\circ\text{C/W}$
Maximum Steady State Power Dissipation at $T_a = 25^\circ\text{C}$ Measured at Zero Lead Length Derate Above 25°C	P_D	550	mW
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	4.4	$\text{mW}/^\circ\text{C}$
Maximum Forward Voltage at $I_F = 200\text{ mA}$	V_F	1.5	Volts
Junction Temperature Range	T_J	- 65 to + 150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	- 65 to + 150	$^\circ\text{C}$



ELECTRICAL CHARACTERISTICS

Rating at $T_L = 30\text{ }^\circ\text{C}$ 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)
1SMB5913C	3.3	113.6	10	500	1.0	100	1.0	454
1SMB5914C	3.6	104.2	9.0	500	1.0	75	1.0	416
1SMB5915C	3.9	96.1	7.5	500	1.0	25	1.0	384
1SMB5916C	4.3	87.2	6.0	500	1.0	5.0	1.0	348
1SMB5917C	4.7	79.8	5.0	500	1.0	5.0	1.5	319
1SMB5918C	5.1	73.5	4.0	400	1.0	5.0	2.0	294
1SMB5919C	5.6	66.9	2.0	300	1.0	5.0	3.0	267
1SMB5920C	6.2	60.5	2.0	200	1.0	5.0	4.0	241
1SMB5921C	6.8	55.1	2.5	200	1.0	5.0	5.2	220
1SMB5922C	7.5	50.0	3.0	400	0.5	5.0	6.0	200
1SMB5923C	8.2	45.7	3.5	400	0.5	5.0	6.5	182
1SMB5924C	9.1	41.2	4.0	500	0.5	5.0	7.0	164
1SMB5925C	10	37.5	4.5	500	0.25	5.0	8.0	150
1SMB5926C	11	34.1	5.5	550	0.25	1.0	8.4	136
1SMB5927C	12	31.2	6.5	550	0.25	1.0	9.1	125
1SMB5928C	13	28.8	7.0	550	0.25	1.0	9.9	115
1SMB5929C	15	25.0	9.0	600	0.25	1.0	11.4	100
1SMB5930C	16	23.4	10	600	0.25	1.0	12.2	93
1SMB5931C	18	20.8	12	650	0.25	1.0	13.7	83
1SMB5932C	20	18.7	14	650	0.25	1.0	15.2	75
1SMB5933C	22	17.0	17.5	650	0.25	1.0	16.7	68
1SMB5934C	24	15.6	19	700	0.25	1.0	18.2	62
1SMB5935C	27	13.9	23	700	0.25	1.0	20.6	55
1SMB5936C	30	12.5	26	750	0.25	1.0	22.8	50
1SMB5937C	33	11.4	33	800	0.25	1.0	25.1	45
1SMB5938C	36	10.4	38	850	0.25	1.0	27.4	41
1SMB5939C	39	9.6	45	900	0.25	1.0	29.7	38
1SMB5940C	43	8.7	53	950	0.25	1.0	32.7	34
1SMB5941C	47	8.0	67	1000	0.25	1.0	35.8	31
1SMB5942C	51	7.3	70	1100	0.25	1.0	38.8	29
1SMB5943C	56	6.7	86	1300	0.25	1.0	42.6	26
1SMB5944C	62	6.0	100	1500	0.25	1.0	47.1	24
1SMB5945C	68	5.5	120	1700	0.25	1.0	51.7	22
1SMB5946C	75	5.0	140	2000	0.25	1.0	56.0	20
1SMB5947C	82	4.6	160	2500	0.25	1.0	62.2	18
1SMB5948C	91	4.1	200	3000	0.25	1.0	69.2	16
1SMB5949C	100	3.7	250	3100	0.25	1.0	76.0	15
1SMB5950C	110	3.4	300	4000	0.25	1.0	83.6	13
1SMB5951C	120	3.1	380	4500	0.25	1.0	91.2	12
1SMB5952C	130	2.9	450	5000	0.25	1.0	98.8	11
1SMB5953C	150	2.5	600	6000	0.25	1.0	114.0	10
1SMB5954C	160	2.3	700	6500	0.25	1.0	121.6	9.0
1SMB5955C	180	2.1	900	7000	0.25	1.0	136.8	8.0
1SMB5956C	200	1.9	1900	9900	0.25	1.0	152.0	7.0

Note :

(1) Suffix " C " indicates $\pm 2\%$ tolerance, Suffix " B " indicates $\pm 5\%$ tolerance, suffix " A " indicates $\pm 10\%$ tolerance.

RATING AND CHARACTERISTIC CURVES (1SMB5913C - 1SMB5956C

FIG. 1 - POWER TEMPERATURE DERATING CURVE

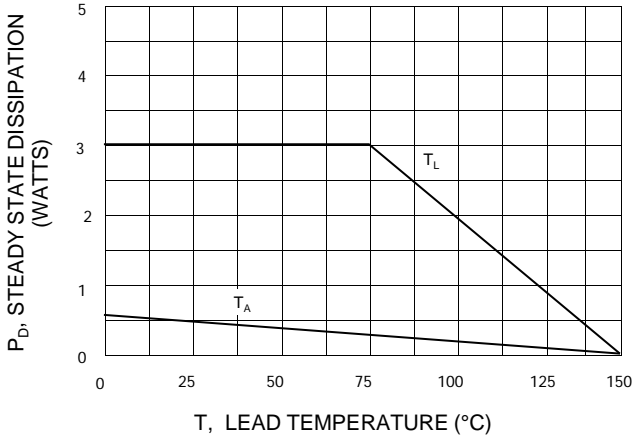


FIG. 3 - MAXIMUM SURGE POWER

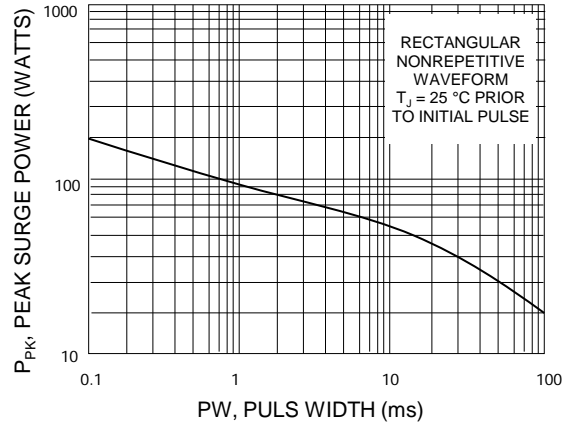


FIG. 5 - TEMPERATURE COEFFICIENT RANGES UNITS TO 12 VOLTS

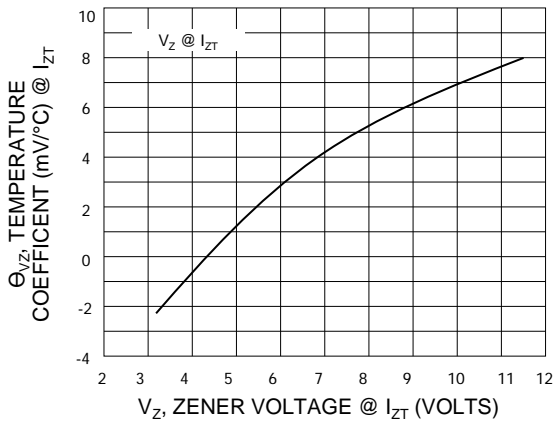


FIG. 6 - TEMPERATURE COEFFICIENT RANGES UNITS 10 TO 400 VOLTS

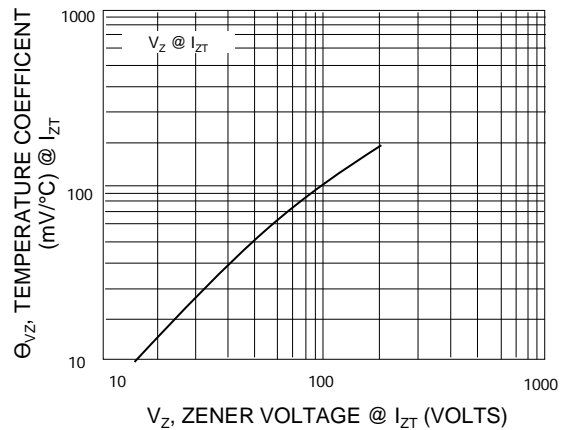


FIG. 7 - ZENER VOLTAGE VS. ZENER CURRENT V_Z = 3.3 thru 10 VOLTS

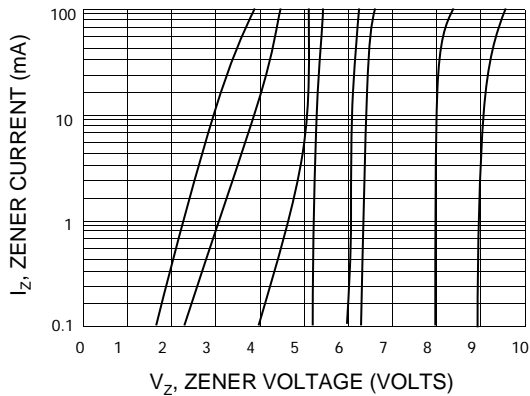


FIG. 8 - ZENER VOLTAGE VS. ZENER CURRENT V_Z = 12 thru 82 VOLTS

