

1SMB5913B - 1SMB5956B

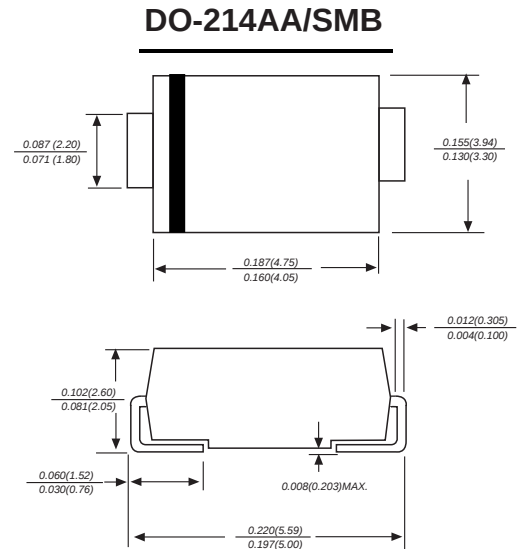
SILICON ZENER DIODES

FEATURES

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

MECHANICAL DATA

- * Case : SMB (DO-214AA) Molded plastic
- * Epoxy : UL94V-O rate flame retardant
- * Maximum Lead Temperature for Soldering Purposes :
260 °C for 10 Seconds
- * Leads : Modified L-Bend providing more contact area to bond pads.
- * Polarity : Cathode indicated by polarity band.
- * Mounting position : Any
- * Weight : 0.093 gram



Dimensions in inches and (millimeters)

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	$R_{\theta JL}$	40	mW/°C
		25	°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	mW/°C
		226	°C/W
Maximum Forward Voltage at $I_F = 200\text{ mA}$	V_F	1.5	Volts
Junction Temperature Range	T_J	- 65 to + 150	°C
Storage Temperature Range	T_{stg}	- 65 to + 150	°C

ELECTRICAL CHARACTERISTICS

Rating at $T_L = 30^\circ\text{C}$ unless otherwise specified

TYPE	MARKING	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)
1SMB5913B	B913	3.3	113.6	10	500	1.0	100	1.0	454
1SMB5914B	B914	3.6	104.2	9.0	500	1.0	75	1.0	416
1SMB5915B	B915	3.9	96.1	7.5	500	1.0	25	1.0	384
1SMB5916B	B916	4.3	87.2	6.0	500	1.0	5.0	1.0	348
1SMB5917B	B917	4.7	79.8	5.0	500	1.0	5.0	1.5	319
1SMB5918B	B918	5.1	73.5	4.0	350	1.0	5.0	2.0	294
1SMB5919B	B919	5.6	66.9	2.0	250	1.0	5.0	3.0	267
1SMB5920B	B920	6.2	60.5	2.0	200	1.0	5.0	4.0	241
1SMB5921B	B921	6.8	55.1	2.5	200	1.0	5.0	5.2	220
1SMB5922B	B922	7.5	50.0	3.0	400	0.5	5.0	6.0	200
1SMB5923B	B923	8.2	45.7	3.5	400	0.5	5.0	6.5	182
1SMB5924B	B924	9.1	41.2	4.0	500	0.5	5.0	7.0	164
1SMB5925B	B925	10	37.5	4.5	500	0.25	5.0	8.0	150
1SMB5926B	B926	11	34.1	5.5	550	0.25	1.0	8.4	136
1SMB5927B	B927	12	31.2	6.5	550	0.25	1.0	9.1	125
1SMB5928B	B928	13	28.8	7.0	550	0.25	1.0	9.9	115
1SMB5929B	B929	15	25.0	9.0	600	0.25	1.0	11.4	100
1SMB5930B	B930	16	23.4	10	600	0.25	1.0	12.2	93
1SMB5931B	B931	18	20.8	12	650	0.25	1.0	13.7	83
1SMB5932B	B932	20	18.7	14	650	0.25	1.0	15.2	75
1SMB5933B	B933	22	17.0	17.5	650	0.25	1.0	16.7	68
1SMB5934B	B934	24	15.6	19	700	0.25	1.0	18.2	62
1SMB5935B	B935	27	13.9	23	700	0.25	1.0	20.6	55
1SMB5936B	B936	30	12.5	26	750	0.25	1.0	22.8	50
1SMB5937B	B937	33	11.4	33	800	0.25	1.0	25.1	45
1SMB5938B	B938	36	10.4	38	850	0.25	1.0	27.4	41
1SMB5939B	B939	39	9.6	45	900	0.25	1.0	29.7	38
1SMB5940B	B940	43	8.7	53	950	0.25	1.0	32.7	34
1SMB5941B	B941	47	8.0	67	1000	0.25	1.0	35.8	31
1SMB5942B	B942	51	7.3	70	1100	0.25	1.0	38.8	29
1SMB5943B	B943	56	6.7	86	1300	0.25	1.0	42.6	26
1SMB5944B	B944	62	6.0	100	1500	0.25	1.0	47.1	24
1SMB5945B	B945	68	5.5	120	1700	0.25	1.0	51.7	22
1SMB5946B	B946	75	5.0	140	2000	0.25	1.0	56.0	20
1SMB5947B	B947	82	4.6	160	2500	0.25	1.0	62.2	18
1SMB5948B	B948	91	4.1	200	3000	0.25	1.0	69.2	16
1SMB5949B	B949	100	3.7	250	3100	0.25	1.0	76.0	15
1SMB5950B	B950	110	3.4	300	4000	0.25	1.0	83.6	13
1SMB5951B	B951	120	3.1	380	4500	0.25	1.0	91.2	12
1SMB5952B	B952	130	2.9	450	5000	0.25	1.0	98.8	11
1SMB5953B	B953	150	2.5	600	6000	0.25	1.0	114.0	10
1SMB5954B	B954	160	2.3	700	6500	0.25	1.0	121.6	9.0
1SMB5955B	B955	180	2.1	900	7000	0.25	1.0	136.8	8.0
1SMB5956B	B956	200	1.9	1200	8000	0.25	1.0	152.0	7.0

Note : (1) Suffix " B " indicates $\pm 5\%$ tolerance, suffix " A " indicates $\pm 10\%$ tolerance

RATING AND CHARACTERISTIC CURVES

FIG. 1 - POWER TEMPERATURE DERATING CURVE

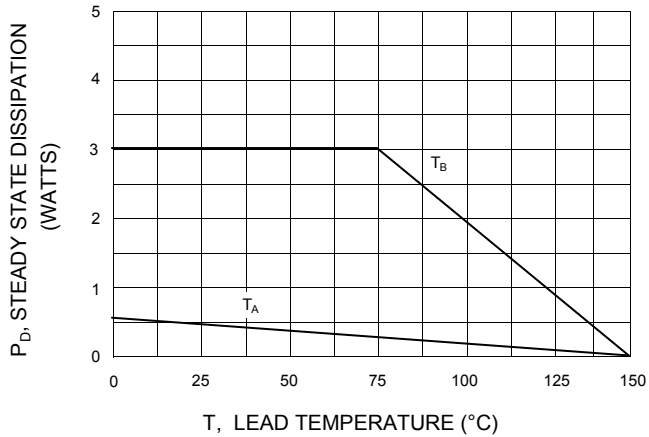


FIG. 3 - MAXIMUM SURGE POWER

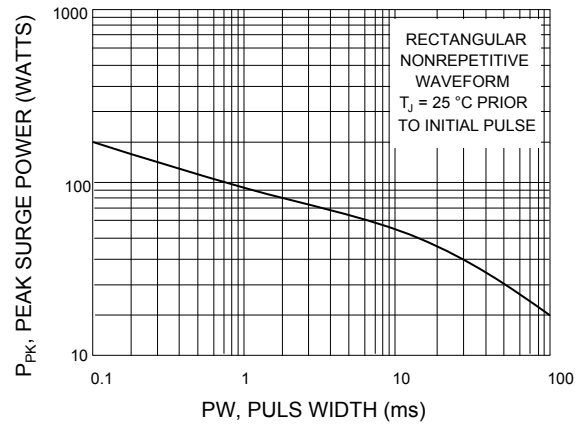


FIG. 5 - TEMPERATURE COEFFICIENT RANGES UNITS TO 12 VOLTS

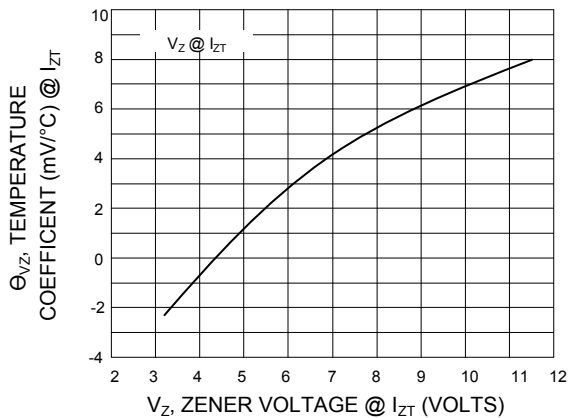


FIG. 6 - TEMPERATURE COEFFICIENT RANGES UNITS 10 TO 400 VOLTS

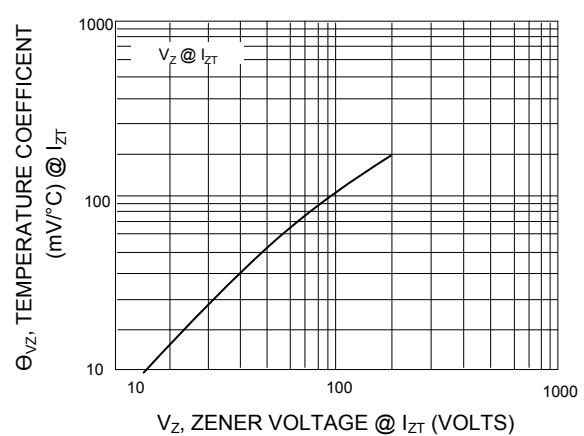


FIG. 7 - ZENER VOLTAGE VS. ZENER CURRENT $V_Z = 3.3$ thru 10 VOLTS

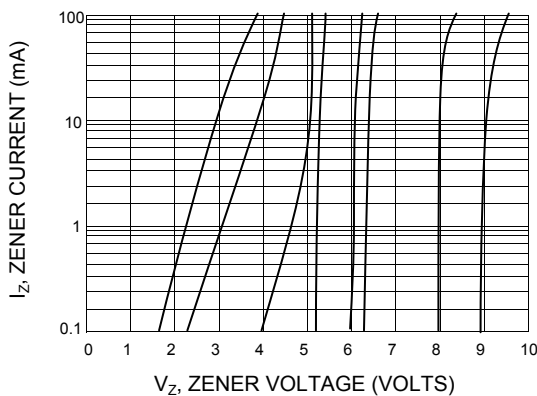


FIG. 8 - ZENER VOLTAGE VS. ZENER CURRENT $V_Z = 12$ thru 82 VOLTS

