

1SMAL5912B - 1SMAL5956B SILICON ZENER DIODES

V_Z : 3.0 - 200 Volts

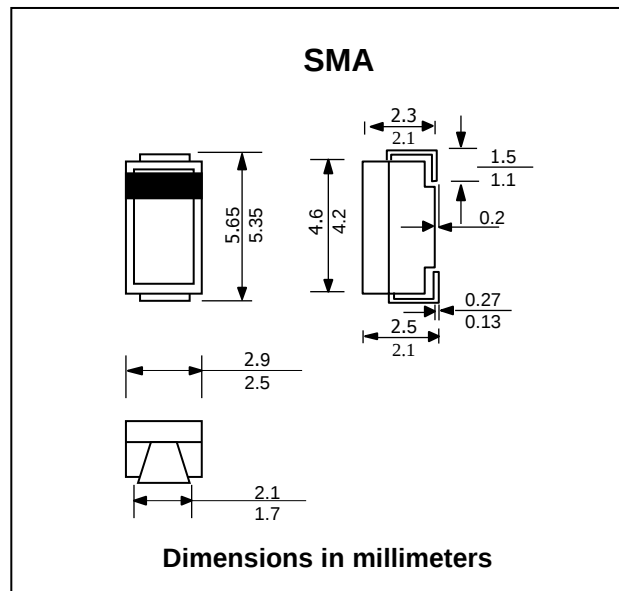
P_D : 3.0 Watts

FEATURES :

- * Complete Voltage Range 3.0 to 200 Volts
- * High peak reverse power dissipation
- * Flat handling surface for accurate placement
- * Low leakage current
- * Pb / RoHS Free

MECHANICAL DATA

- * Case : SMA 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°C, Measured at Zero Lead Length Derate Above 75 °C	P _D	3.0	W
Thermal Resistance From Junction to Lead	R _{θJL}	40	mW/°C
		25	°C/W
Maximum Steady State Power Dissipation at Ta = 25 °C Measured at Zero Lead Length Derate Above 25 °C	P _D	550	mW
Thermal Resistance From Junction to Ambient	R _{θJA}	4.4	mW/°C
		226	°C/W
Maximum Forward Voltage at I _F = 200 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	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)
1SMAL5912B	3.0	125.0	10	500	1.0	100	1.0	500
1SMAL5913B	3.3	113.6	10	500	1.0	100	1.0	454
1SMAL5914B	3.6	104.2	9.0	500	1.0	75	1.0	416
1SMAL5915B	3.9	96.1	7.5	500	1.0	25	1.0	384
1SMAL5916B	4.3	87.2	6.0	500	1.0	5.0	1.0	348
1SMAL5917B	4.7	79.8	5.0	500	1.0	5.0	1.5	319
1SMAL5918B	5.1	73.5	4.0	400	1.0	5.0	2.0	294
1SMAL5919B	5.6	66.9	2.0	300	1.0	5.0	3.0	267
1SMAL5920B	6.2	60.5	2.0	200	1.0	5.0	4.0	241
1SMAL5921B	6.8	55.1	2.5	200	1.0	5.0	5.2	220
1SMAL5922B	7.5	50.0	3.0	400	0.5	5.0	6.0	200
1SMAL5923B	8.2	45.7	3.5	400	0.5	5.0	6.5	182
1SMAL5924B	9.1	41.2	4.0	500	0.5	5.0	7.0	164
1SMAL5925B	10	37.5	4.5	500	0.25	5.0	8.0	150
1SMAL5926B	11	34.1	5.5	550	0.25	1.0	8.4	136
1SMAL5927B	12	31.2	6.5	550	0.25	1.0	9.1	125
1SMAL5928B	13	28.8	7.0	550	0.25	1.0	9.9	115
1SMAL5929B	15	25.0	9.0	600	0.25	1.0	11.4	100
1SMAL5930B	16	23.4	10	600	0.25	1.0	12.2	93
1SMAL5931B	18	20.8	12	650	0.25	1.0	13.7	83
1SMAL5932B	20	18.7	14	650	0.25	1.0	15.2	75
1SMAL5933B	22	17.0	17.5	650	0.25	1.0	16.7	68
1SMAL5934B	24	15.6	19	700	0.25	1.0	18.2	62
1SMAL5935B	27	13.9	23	700	0.25	1.0	20.6	55
1SMAL5936B	30	12.5	26	750	0.25	1.0	22.8	50
1SMAL5937B	33	11.4	33	800	0.25	1.0	25.1	45
1SMAL5938B	36	10.4	38	850	0.25	1.0	27.4	41
1SMAL5939B	39	9.6	45	900	0.25	1.0	29.7	38
1SMAL5940B	43	8.7	53	950	0.25	1.0	32.7	34
1SMAL5941B	47	8.0	67	1000	0.25	1.0	35.8	31
1SMAL5942B	51	7.3	70	1100	0.25	1.0	38.8	29
1SMAL5943B	56	6.7	86	1300	0.25	1.0	42.6	26
1SMAL5944B	62	6.0	100	1500	0.25	1.0	47.1	24
1SMAL5945B	68	5.5	120	1700	0.25	1.0	51.7	22
1SMAL5946B	75	5.0	140	2000	0.25	1.0	56.0	20
1SMAL5947B	82	4.6	160	2500	0.25	1.0	62.2	18
1SMAL5948B	91	4.1	200	3000	0.25	1.0	69.2	16
1SMAL5949B	100	3.7	250	3100	0.25	1.0	76.0	15
1SMAL5950B	110	3.4	300	4000	0.25	1.0	83.6	13
1SMAL5951B	120	3.1	380	4500	0.25	1.0	91.2	12
1SMAL5952B	130	2.9	450	5000	0.25	1.0	98.8	11
1SMAL5953B	150	2.5	600	6000	0.25	1.0	114.0	10
1SMAL5954B	160	2.3	700	6500	0.25	1.0	121.6	9.0
1SMAL5955B	180	2.1	900	7000	0.25	1.0	136.8	8.0
1SMAL5956B	200	1.9	1900	9990	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 (1SMAL5912B - 1SMAL5956B)

FIG. 1 - POWER TEMPERATURE DERATING CURVE

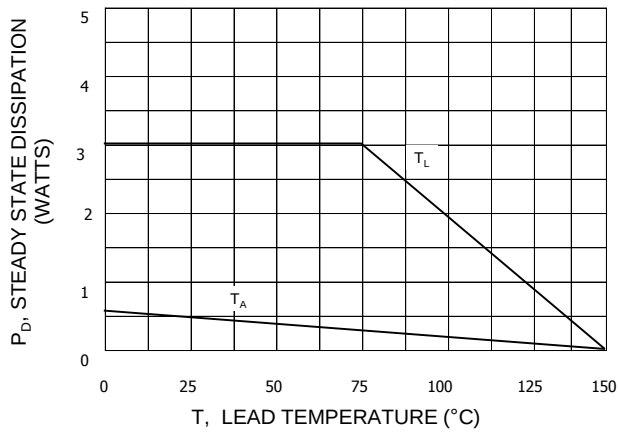


FIG. 3 - MAXIMUM SURGE POWER

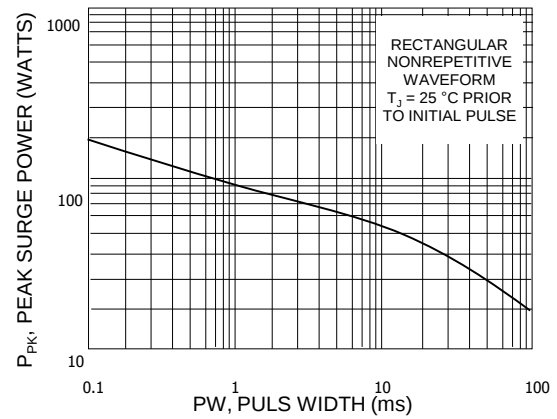


FIG. 5 - TEMPERATURE COEFFICIENT RANGES UNITS TO 12 VOLTS

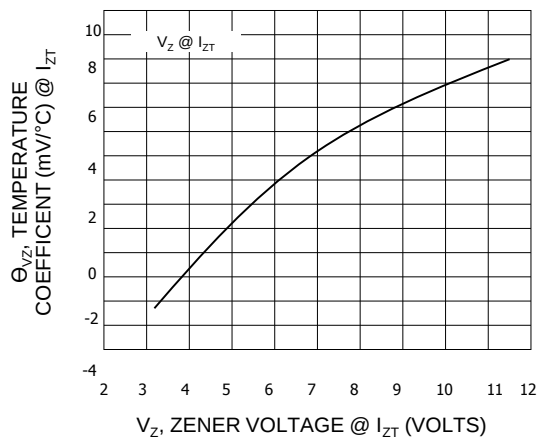


FIG. 6 - TEMPERATURE COEFFICIENT RANGES UNITS 10 TO 400 VOLTS

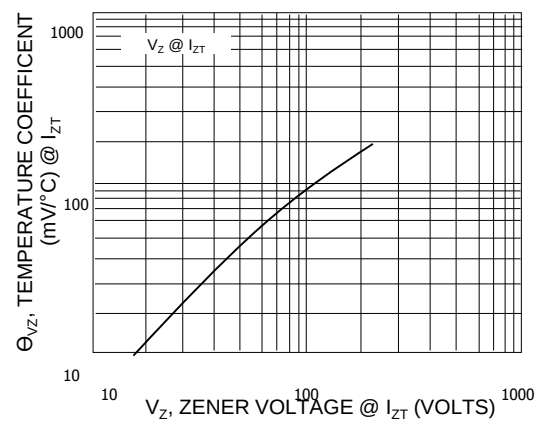


FIG. 7 - ZENER VOLTAGE VS. ZENER CURRENT $V_Z = 3.3$ thru 10 VOLTS

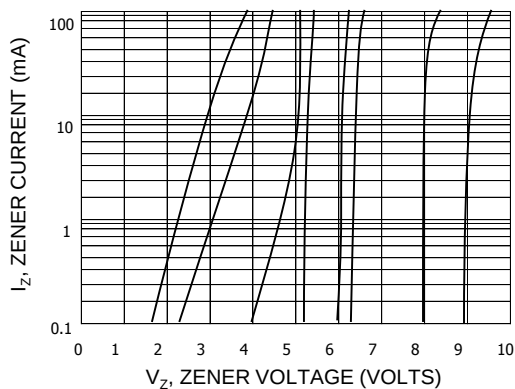


FIG. 8 - ZENER VOLTAGE VS. ZENER CURRENT $V_Z = 12$ thru 82 VOLTS

