

**SMBG5913 thru  
SMBG5956B  
and  
SMBJ5913 thru  
SMBJ5956B**

SILICON  
1.5 WATT  
ZENER DIODES  
SURFACE MOUNT

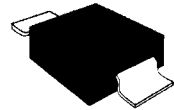
**Features**

- SURFACE MOUNT EQUIVALENT TO 1N5913 THRU 1N5956B
- IDEAL FOR HIGH DENSITY, LOW PROFILE MOUNTING
- ZENER VOLTAGE 3.3V TO 200V
- WITHSTANDS LARGE SURGE STRESSES

**Maximum Ratings**

Junction and Storage: -55°C to +200°C  
DC Power Dissipation: 1.5 Watt  
12mW/C above 75°C  
Forward Voltage @ 200 mA: 1.2 Volts

**DO-215AA**



**DO-214AA**

NOTE: All SMB series are equivalent to prior SMS package identifications.

**Electrical Characteristics @ T<sub>L</sub> = 30° C**

MICROSEMI PART NUMBER		ZENER VOLTAGE V <sub>Z</sub>	TEST CURRENT I <sub>ZT</sub>	DYNAMIC IMPEDANCE Z <sub>DT</sub>	KNEE CURRENT I <sub>ZK</sub>	KNEE IMPEDANCE Z <sub>ZK</sub>	REVERSE CURRENT I <sub>R</sub>	REVERSE VOLTAGE V <sub>R</sub>	MAX. DC CURRENT I <sub>ZM</sub>
Gull-Wing Lead	C-Bend (Mod.-I)	Volts	mA	Ω	mA	Ω	μA dc	Volts	mA
		SMBG5913	SMBJ5913	3.3	113.6	10.0	1.0	500	100.0
SMBG5914	SMBJ5914	3.6	104.2	9.0	1.0	500	75.0	1.0	416
SMBG5915	SMBJ5915	3.9	96.1	7.5	1.0	500	25.0	1.0	384
SMBG5916	SMBJ5916	4.3	87.2	6.0	1.0	500	5.0	1.0	348
SMBG5917	SMBJ5917	4.7	79.8	5.0	1.0	500	5.0	1.5	319
SMBG5918	SMBJ5918	5.1	73.5	4.0	1.0	350	5.0	2.0	294
SMBG5919	SMBJ5919	5.6	66.9	2.0	1.0	250	5.0	3.0	267
SMBG5920	SMBJ5920	6.2	60.5	2.0	1.0	200	5.0	4.0	241
SMBG5921	SMBJ5921	6.8	55.1	2.5	1.0	200	5.0	5.2	220
SMBG5922	SMBJ5922	7.5	50.0	3.0	0.5	400	5.0	6.0	200
SMBG5923	SMBJ5923	8.2	45.7	3.5	0.5	400	5.0	6.5	182
SMBG5924	SMBJ5924	9.1	41.2	4.0	0.5	500	5.0	7.0	164
SMBG5925	SMBJ5925	10	37.5	4.5	0.25	500	5.0	8.0	150
SMBG5926	SMBJ5926	11	34.1	5.5	0.25	550	1.0	8.4	136
SMBG5927	SMBJ5927	12	31.2	6.5	0.25	550	1.0	9.1	125
SMBG5928	SMBJ5928	13	28.8	7.0	0.25	550	1.0	9.9	115
SMBG5929	SMBJ5929	15	25.0	9.0	0.25	600	1.0	11.4	100
SMBG5930	SMBJ5930	16	23.4	10.0	0.25	600	1.0	12.2	93
SMBG5931	SMBJ5931	18	20.8	12.0	0.25	650	1.0	13.7	83
SMBG5932	SMBJ5932	20	18.7	14.0	0.25	650	1.0	15.2	75
SMBG5933	SMBJ5933	22	17.0	17.5	0.25	650	1.0	16.7	68
SMBG5934	SMBJ5934	24	15.6	19.0	0.25	700	1.0	18.2	62
SMBG5935	SMBJ5935	27	13.9	23.0	0.25	700	1.0	20.6	55
SMBG5936	SMBJ5936	30	12.5	28.0	0.25	750	1.0	22.8	50
SMBG5937	SMBJ5937	33	11.4	33.0	0.25	800	1.0	25.1	45
SMBG5938	SMBJ5938	36	10.4	38.0	0.25	850	1.0	27.4	41
SMBG5939	SMBJ5939	39	9.6	45.0	0.25	900	1.0	29.7	38
SMBG5940	SMBJ5940	43	8.7	53.0	0.25	950	1.0	32.7	34
SMBG5941	SMBJ5941	47	8.0	67.0	0.25	1000	1.0	35.8	31
SMBG5942	SMBJ5942	51	7.3	70.0	0.25	1100	1.0	38.8	29
SMBG5943	SMBJ5943	56	6.7	86.0	0.25	1300	1.0	42.6	26
SMBG5944	SMBJ5944	62	6.0	100.0	0.25	1500	1.0	47.1	24
SMBG5945	SMBJ5945	68	5.5	120.0	0.25	1700	1.0	51.2	22
SMBG5946	SMBJ5946	75	5.0	140.0	0.25	2000	1.0	56.0	20
SMBG5947	SMBJ5947	82	4.6	160.0	0.25	2500	1.0	62.2	18
SMBG5948	SMBJ5948	91	4.1	200.0	0.25	3000	1.0	69.2	16
SMBG5949	SMBJ5949	100	3.7	250.0	0.25	3100	1.0	76.0	15
SMBG5950	SMBJ5950	110	3.4	300.0	0.25	4000	1.0	83.6	13
SMBG5951	SMBJ5951	120	3.1	380.0	0.25	4500	1.0	91.2	12
SMBG5952	SMBJ5952	130	2.9	450.0	0.25	5000	1.0	98.8	11
SMBG5953	SMBJ5953	150	2.5	600.0	0.25	6000	1.0	114.0	10
SMBG5954	SMBJ5954	160	2.3	700.0	0.25	6500	1.0	121.6	9
SMBG5955	SMBJ5955	180	2.1	900.0	0.25	7000	1.0	136.8	8
SMBG5956	SMBJ5956	200	1.9	1200.0	0.25	8000	1.0	152.0	7

**Mechanical Characteristics**

**CASE:** Molded Surface Mountable.

**TERMINALS:** Gull-wing or C-bend (modified J-bend) leads, tin lead plated.

**POLARITY:** Cathode indicated by band.

**PACKAGING:** Standard 12mm tape (see EIA Std. RS-481).

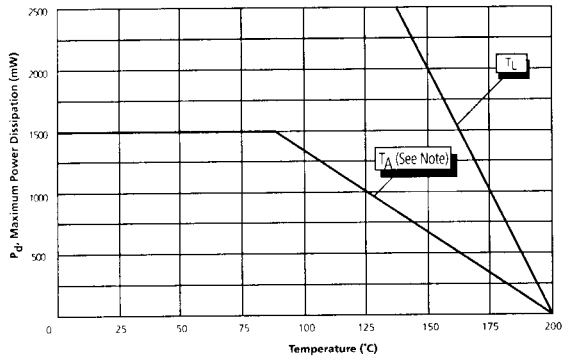
**THERMAL RESISTANCE:** 25°C/Watt (typical) junction to lead (tab) at mounting plane.

# SMB (G or J) 5913 thru SMB (G or J) 5956B

**NOTE 1** No suffix indicates a  $\pm 20\%$  tolerance on nominal  $V_Z$ . Suffix A denotes a  $\pm 10\%$  tolerance, B denotes a  $\pm 5\%$  tolerance, C denotes a  $\pm 2\%$  tolerance, and D denotes a  $\pm 1\%$  tolerance.

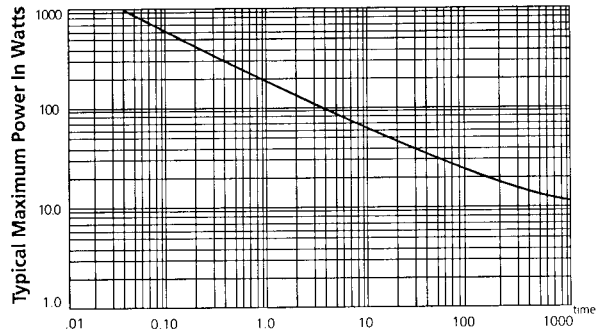
**NOTE 2** Zener voltage ( $V_Z$ ) is measured at  $T_L = 30^\circ\text{C}$ . Voltage measurement to be performed 90 seconds after application of dc current.

**NOTE 3** The zener impedance is derived from the 60 Hz ac voltage, which results when an ac current having an rms value equal to 10% of the dc zener current ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed on  $I_{ZT}$  or  $I_{ZK}$ .

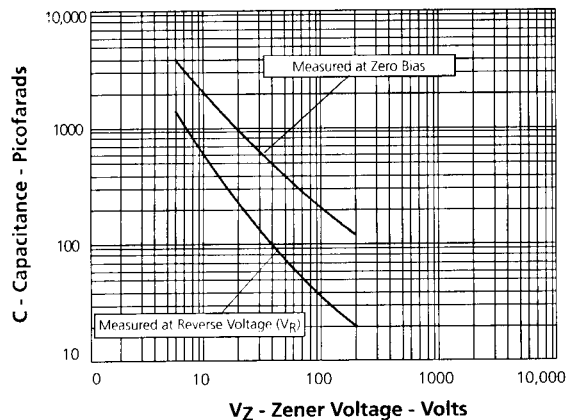


**FIGURE 2** Power Derating Curve

Note: Lead temperature ( $T_L$ ) at mounting plane for typical pc board thermal resistance design of  $50^\circ\text{C}/\text{w}$  will result in  $75^\circ\text{C}$  lead temperatures above ambient ( $T_A$ ), if operating at the full rated 1.5 watts.

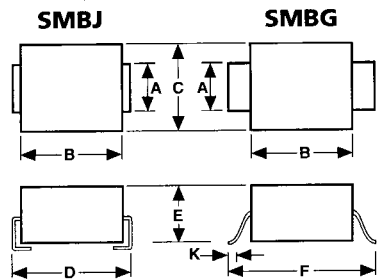


**FIGURE 3** Transient Surge Capability Square Wave Pulse Width (Non-Repetitive) In Milliseconds



**FIGURE 4** Typical Capacitance Vs. Zener Voltage

## PACKAGE DIMENSIONS



DIMENSIONS IN INCHES

	A	B	C	D	E	F	K	L
MIN.	.077	.160	.130	.205	.075	.235	.015	.030
MAX.	.083	.180	.155	.220	.095	.255	.030	.060
DIMENSIONS IN MILLIMETERS								
MIN.	1.96	4.06	3.30	5.21	1.90	5.97	0.381	0.760
MAX.	2.10	4.57	3.94	5.59	2.41	6.48	0.762	1.520