

**SMAJ5913B  
 THRU  
 SMAJ5956B**

**SILICON  
 3.0 WATT  
 ZENER DIODES**

**Features**

- For Surface Mount Applications (flat handling surface for accurate placement)
- Zener Voltage 3.3V to 200V
- Withstands Large Surge Stresses
- Electrically Equivalent to JEDEC Registered Series IN5913 through IN5956
- Available on Tape and Reel
- High Surge Current Rating

**Mechanical Data**

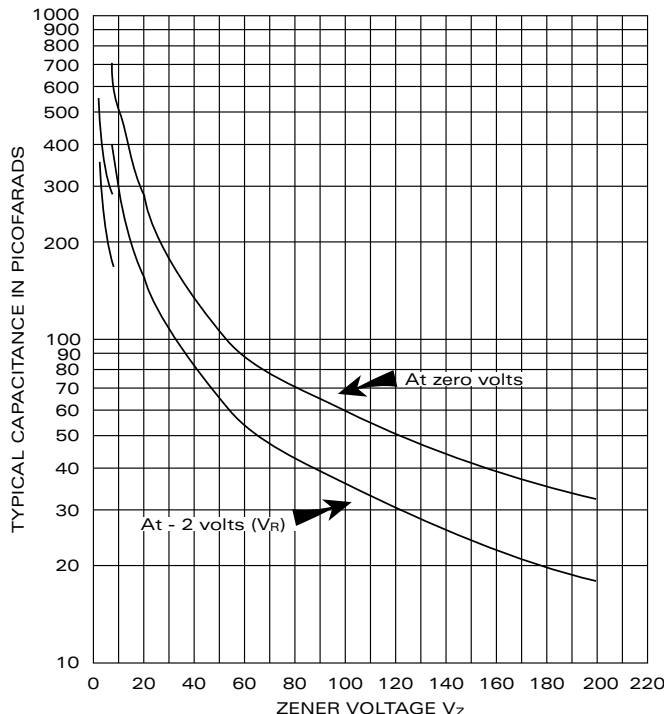
- Package similar to JEDEC DO-214AC (see dimension 'A' note)
- Terminals solderable per MIL-STD-750, Method 2026
- Polarity is indicated by cathode band
- Maximum temperature for soldering: 260°C for 10 seconds
- Plastic surface mount body meets UL94V-0 flame retardent epoxy

**Maximum Ratings @ 25°C  
 (Unless Otherwise Specified)**

Forward Voltage	V <sub>F</sub>	1.2V	Note 1
Peak Pulse Power	P <sub>PP</sub>	See Figure 3	
Steady State Power Dissipation	P <sub>(AV)</sub>	3.0W	Note 2, 3
Operating and Storage Temperatures	T <sub>J</sub> , T <sub>STG</sub>	-55°C to +150°C	
Thermal Resistance	R <sub>θJL</sub>	25°C/W	

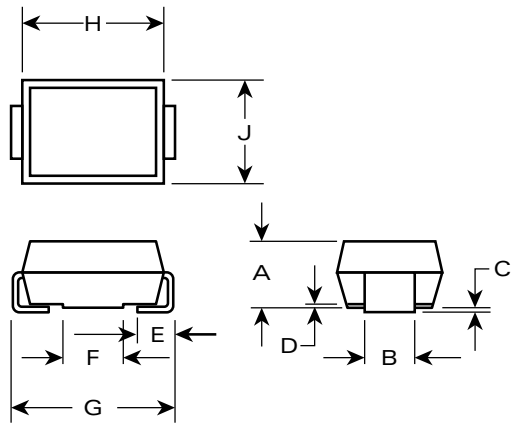
**Notes:**

1. Forward current at 200mA.
2. Mounted on 4.0mm<sup>2</sup> copper pads to each terminal.
3. Lead temperature at 75°C = T<sub>L</sub>. Derate linearly above 75°C to zero power at 150°C.



CAPACITANCE vs. V<sub>Z</sub> CURVE

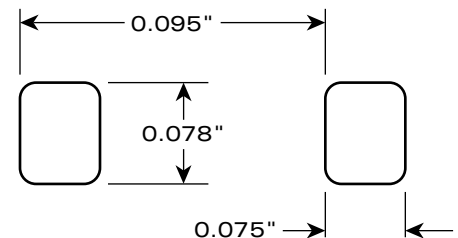
**DO-214AC  
 (SMAJ)**



DIM	INCHES MIN / MAX	MILLIMETERS MIN / MAX	NOTE
A	.078 / .115	1.98 / 2.92	1
B	.052 / .058	1.32 / 1.47	
C	- / .005	- / .127	
D	- / .02	- / .51	
E	.030 / .060	.76 / 1.52	
F	.055 / .075	1.65 / 2.13	
G	.194 / .216	4.93 / 5.48	
H	.160 / .180	3.99 / 4.50	
J	.100 / .110	2.57 / 2.79	

NOTE 1: THIS MAXIMUM DIMENSION IS LARGER THAN THE STANDARD JEDEC CALL OUT. STANDARD JEDEC IS .105 INCHES OR 2.88 MM.

**PAD LAYOUT**



# Electrical Characteristics @ 25°C

TYPE NUMBER	ZENER VOLTAGE $V_z$	TEST CURRENT $I_{zT}$	DYNAMIC IMPEDANCE $Z_{zT}$	KNEE CURRENT $I_{zK}$	KNEE IMPEDANCE $Z_{zK}$	REVERSE CURRENT $I_r(\text{MAX.})$	REVERSE VOLTAGE $V_R$	MAX.DC CURRENT $I_{zM}$
	VOLTS	mA	$\Omega$	mA	$\Omega$	$\mu\text{A}_{dc}$	VOLTS	mA
SMAJ5913	3.3	113.6	10	1.0	500	100	1.0	908
SMAJ5914	3.6	104.2	9.0	1.0	500	75	1.0	832
SMAJ5915	3.9	96.1	7.5	1.0	500	25	1.0	768
SMAJ5916	4.3	87.2	6.0	1.0	500	5.0	1.0	696
SMAJ5917	4.7	79.8	5.0	1.0	500	5.0	1.5	638
SMAJ5918	5.1	73.5	4.0	1.0	350	5.0	2.0	588
SMAJ5919	5.6	66.9	2.0	1.0	250	5.0	3.0	534
SMAJ5920	6.2	60.5	2.0	1.0	200	5.0	4.0	482
SMAJ5921	6.8	55.1	2.5	1.0	200	5.0	5.2	440
SMAJ5922	7.5	50	3.0	0.5	400	5.0	6.0	400
SMAJ5923	8.2	45.7	3.5	0.5	400	5.0	6.5	364
SMAJ5924	9.1	41.2	4.0	0.5	500	5.0	7.0	328
SMAJ5925	10	37.5	4.5	0.25	500	5.0	8.0	300
SMAJ5926	11	34.1	5.5	0.25	550	1.0	8.4	272
SMAJ5927	12	31.2	6.5	0.25	550	1.0	9.1	250
SMAJ5928	13	28.8	7.0	0.25	550	1.0	9.9	230
SMAJ5929	15	25	9.0	0.25	600	1.0	11.4	200
SMAJ5930	16	23.4	10	0.25	600	1.0	12.2	186
SMAJ5931	18	20.8	12	0.25	650	1.0	13.7	166
SMAJ5932	20	18.7	14	0.25	650	1.0	15.2	150
SMAJ5933	22	17	17.5	0.25	650	1.0	16.7	156
SMAJ5934	24	15.6	19	0.25	700	1.0	18.2	124
SMAJ5935	27	13.9	23	0.25	700	1.0	20.6	110
SMAJ5936	30	12.5	28	0.25	750	1.0	22.8	100
SMAJ5937	33	11.4	33	0.25	800	1.0	25.1	90
SMAJ5938	36	10.4	38	0.25	850	1.0	27.4	82
SMAJ5939	39	9.6	45	0.25	900	1.0	29.7	76
SMAJ5940	43	8.7	53	0.25	950	1.0	32.7	68
SMAJ5941	47	8.0	67	0.25	1000	1.0	35.8	62
SMAJ5942	51	7.3	70	0.25	1100	1.0	38.8	58
SMAJ5943	56	6.7	86	0.25	1300	1.0	42.6	52
SMAJ5944	62	6.0	100	0.25	1500	1.0	47.1	48
SMAJ5945	68	5.5	120	0.25	1700	1.0	51.2	44
SMAJ5946	75	5.0	140	0.25	2000	1.0	56	40
SMAJ5947	82	4.6	160	0.25	2500	1.0	62.2	36
SMAJ5948	91	4.1	200	0.25	3000	1.0	69.2	32
SMAJ5949	100	3.7	250	0.25	3100	1.0	76	30
SMAJ5950	110	3.4	300	0.25	4000	1.0	83.6	26
SMAJ5951	120	3.1	380	0.25	4500	1.0	91.2	24
SMAJ5952	130	2.9	450	0.25	5000	1.0	98.8	22
SMAJ5953	150	2.5	600	0.25	6000	1.0	114	20
SMAJ5954	160	2.3	700	0.25	6500	1.0	121.6	18
SMAJ5955	180	2.1	900	0.25	7000	1.0	136.8	16
SMAJ5956	200	1.9	1200	0.25	8000	1.0	152	14

- Notes:
- 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.
  - 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.
  - 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  $I_{zK}$ .

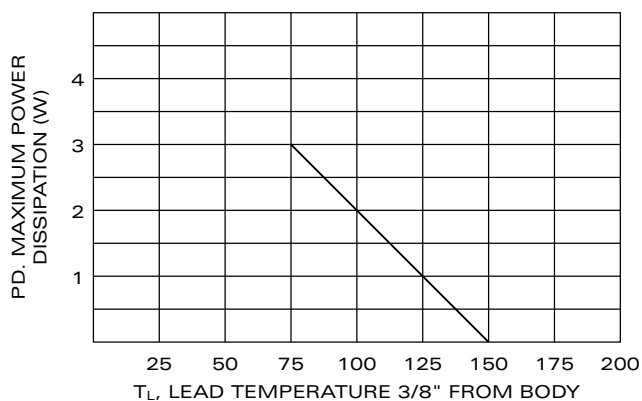


FIGURE 1.  
POWER DERATING CURVE

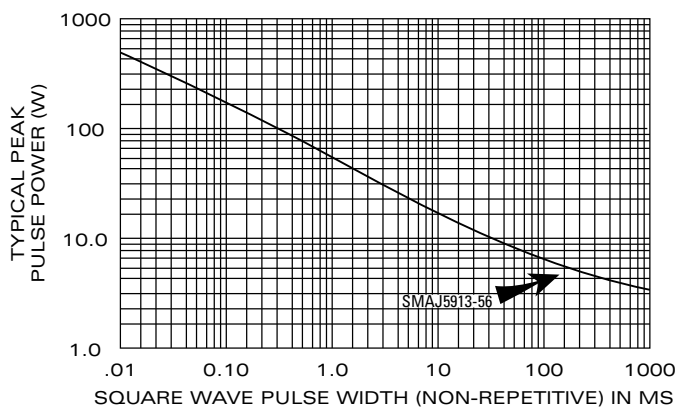


FIGURE 2.  
TRANSIENT SURGE CAPABILITY