



Micro Commercial Components™



Micro Commercial Components  
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# SMAJ5913B THRU SMAJ5956B

## Features

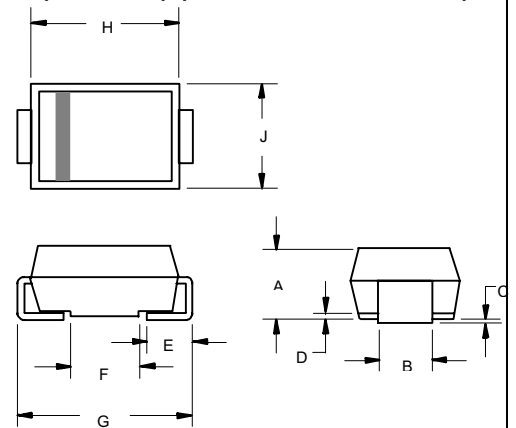
- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Low Zener Impedance
- Low Regulation Factor
- $V_z$  - tolerance:  $\pm 5\%$
- For Surface Mount Applications
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

## Maximum Ratings

- Junction Temperature: 150°C
- Storage Temperature: -65°C to +175°C
- 1.5 Watt DC Power Dissipation ( $T_L \leq 75^\circ\text{C}$ )
- Thermal Resistance Junction to Lead: 50°C/W
- Forward Voltage @ 200mA: 1.5 Volts

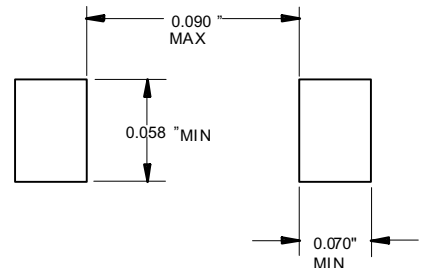
# 1.5 Watt Zener Diode 3.3 to 200 Volts

## DO-214AC (SMAJ)(LEAD FRAME)



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.079	.096	2.00	2.44	
B	.050	.064	1.27	1.63	
C	.002	.008	.05	.20	
D	---	.02	---	.51	
E	.030	.060	.76	1.52	
F	.065	.091	1.65	2.32	
G	.189	.220	4.80	5.59	
H	.157	.181	4.00	4.60	
J	.090	.115	2.25	2.92	

### SUGGESTED SOLDER PAD LAYOUT



Note: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.

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## ELECTRICAL CHARACTERISTICS @25°C

MCC PART NUMBER	ZENER VOLTAGE VZ (1)	TEST CURRENT IZT	MAXIMUM DYNAMIC IMPEDANCE ZZT @IZT	KNEE CURRENT IZK	KNEE IMPEDANCE ZZK	MAXIMUM REVERSE CURRENT IR	REVERSE VOLTAGE VR	DEVICE MARKING
	VOLTS	mA	OHMS	mA	OHMS	µA	VOLTS	
SMAJ5913B	3.3	113.6	10	1	500	50	1	13B
SMAJ5914B	3.6	104.2	9	1	500	35.5	1	14B
SMAJ5915B	3.9	96.1	7.5	1	500	12.5	1	15B
SMAJ5916B	4.3	87.2	6	1	500	2.5	1	16B
SMAJ5917B	4.7	79.8	5	1	500	2.5	1.5	17B
SMAJ5918B	5.1	73.5	4	1	350	2.5	2	18B
SMAJ5919B	5.6	66.9	2	1	250	2.5	3	19B
SMAJ5920B	6.2	60.5	2	1	200	2.5	4	20B
SMAJ5921B	6.8	55.1	2.5	1	200	2.5	5.2	21B
SMAJ5922B	7.5	50	3	0.5	400	2.5	6	22B
SMAJ5923B	8.2	45.7	3.5	0.5	400	2.5	6.5	23B
SMAJ5924B	9.1	41.2	4	0.25	500	2.5	7	24B
SMAJ5925B	10	37.5	4.5	0.25	500	0.5	8	25B
SMAJ5926B	11	34.1	5.5	0.25	550	0.5	8.4	26B
SMAJ5927B	12	31.2	6.5	0.25	550	0.5	9.1	27B
SMAJ5928B	13	28.8	7	0.25	550	0.5	9.9	28B
SMAJ5929B	15	25	9	0.25	600	0.5	11.4	29B
SMAJ5930B	16	23.4	10	0.25	600	0.5	12.2	30B
SMAJ5931B	18	20.8	12	0.25	650	0.5	13.7	31B
SMAJ5932B	20	18.7	14	0.25	650	0.5	15.2	32B
SMAJ5933B	22	17	17.5	0.25	650	0.5	16.7	33B
SMAJ5934B	24	15.6	19	0.25	700	0.5	18.2	34B
SMAJ5935B	27	13.9	23	0.25	700	0.5	20.6	35B
SMAJ5936B	30	12.5	28	0.25	750	0.5	22.8	36B
SMAJ5937B	33	11.4	33	0.25	800	0.5	25.1	37B
SMAJ5938B	36	10.4	38	0.25	850	0.5	27.4	38B
SMAJ5939B	39	9.6	45	0.25	900	0.5	29.7	39B
SMAJ5940B	43	8.7	53	0.25	950	0.5	32.7	40B
SMAJ5941B	47	8	67	0.25	1000	0.5	35.8	41B
SMAJ5942B	51	7.3	70	0.25	1100	0.5	38.8	42B
SMAJ5943B	56	6.7	86	0.25	1300	0.5	42.6	43B
SMAJ5944B	62	6	100	0.25	1500	0.5	47.1	44B
SMAJ5945B	68	5.5	120	0.25	1700	0.5	51.7	45B
SMAJ5946B	75	5	140	0.25	2000	0.5	56	46B
SMAJ5947B	82	4.6	160	0.25	2500	0.5	62.2	47B
SMAJ5948B	91	4.1	200	0.25	3000	0.5	69.2	48B
SMAJ5949B	100	3.7	250	0.25	3100	0.5	76	49B
SMAJ5950B	110	3.4	300	0.25	4000	0.5	83.6	50B
SMAJ5951B	120	3.1	380	0.25	4500	0.5	91.2	51B
SMAJ5952B	130	2.9	450	0.25	5000	0.5	98.8	52B
SMAJ5953B	150	2.5	600	0.25	6000	0.5	114	53B
SMAJ5954B	160	2.3	700	0.25	6500	0.5	121.6	54B
SMAJ5955B	180	2.1	900	0.25	7000	0.5	136.8	55B
SMAJ5956B	200	1.9	1200	0.25	8000	0.5	152	56B

1) Based on DC-measurement at thermal equilibrium while maintaining the lead temperature(T<sub>L</sub>) at 30°C, 9.5mm(3/8) from the diode body.

**Characteristics** ( $T_j=25^{\circ}\text{C}$  unless otherwise specified)

Symbol	Parameter
$V_Z$	Reverse zener voltage @ $I_{ZT}$
$I_{ZT}$	Reverse current
$Z_{ZT}$	Maximum zener impedance @ $I_{ZT}$
$I_{ZK}$	Reverse current
$Z_{ZK}$	Maximum zener impedance @ $I_{ZK}$
$I_R$	Reverse leakage current @ $V_R$
$V_R$	Breakdown voltage
$I_F$	Forward current
$V_F$	Forward voltage @ $I_F$

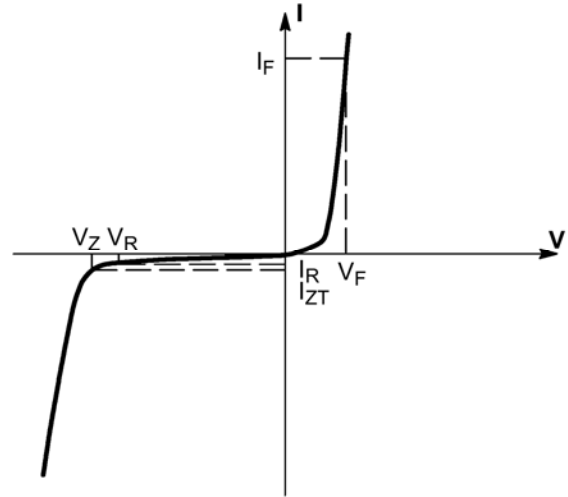


Figure 1. Zener voltage regulator

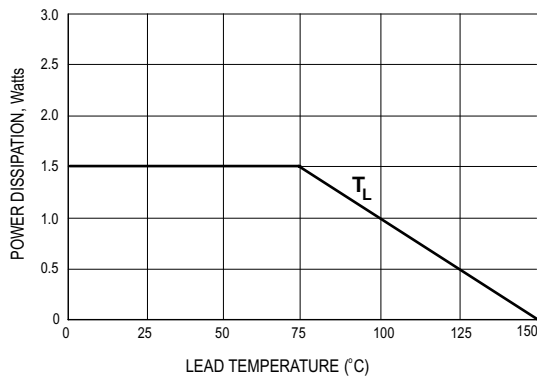


Figure 2. Steady state power derating

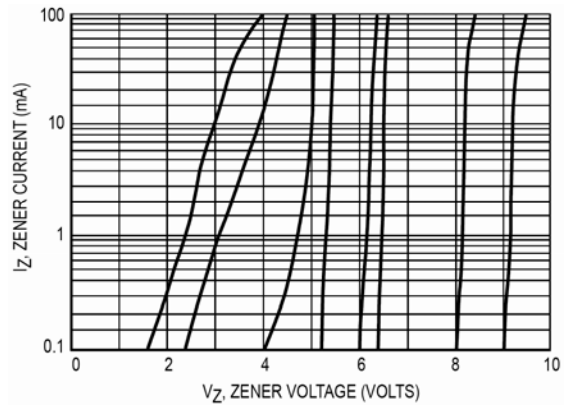


Figure 3.  $V_Z$  - 3.3 thru 10 volts

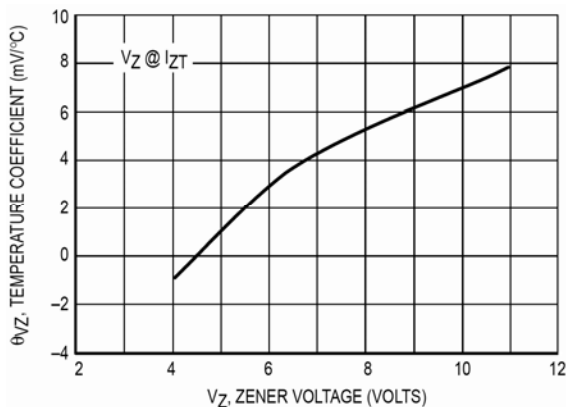


Figure 4. Zener voltage - 3.3 to 12 volts

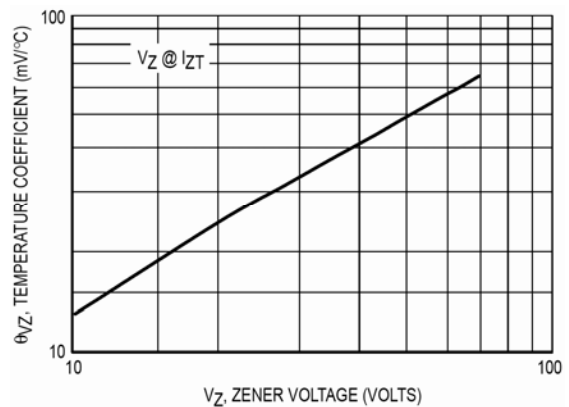


Figure 5. Zener voltage - 14 to 43 volts

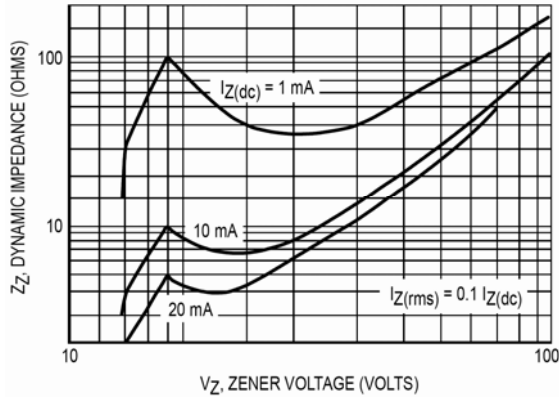


Figure 6. Effect of zener voltage

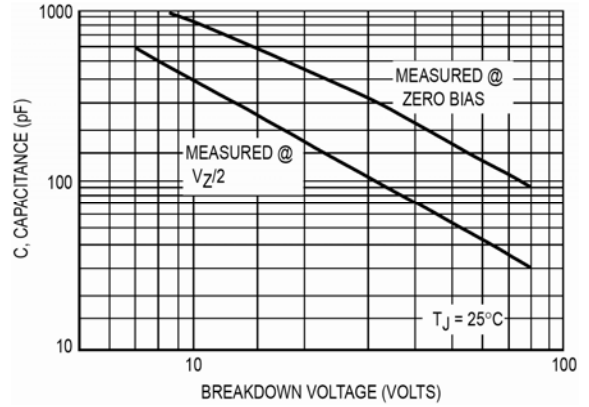


Figure 7. Capacitance curve

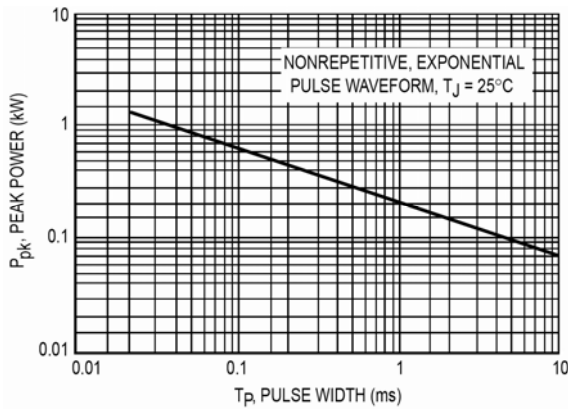


Figure 8. Typical pulse rating curve

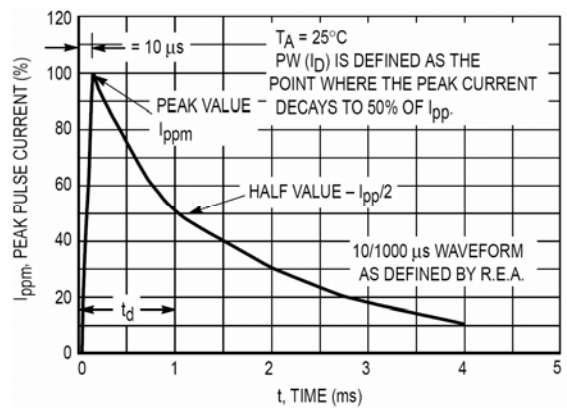


Figure 9. Pulse waveform

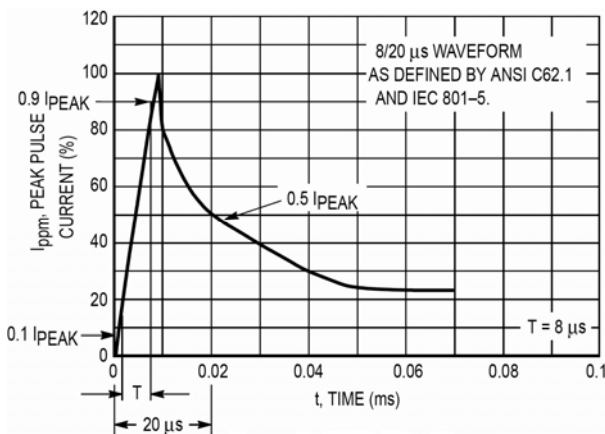


Figure 10. Pulse waveform



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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 7.5Kpcs/Reel

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