

# GW 1N59xxB-SERIES

## ZENER DIODES

Zener Voltage: 3.3-200V

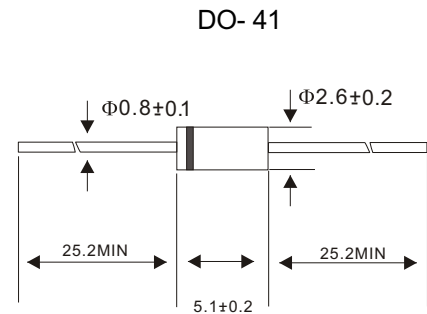
Peak Pulse Power: 1.5W

### FEATURES

- ◇ Silicon planar power zener diodes
- ◇ No suffix indicates a  $\pm 20\%$  tolerance on nominal  $V_z$ .  
Suffix "A" denotes a  $\pm 10\%$ , Suffix "B" denotes a  $\pm 5\%$ ,  
Suffix "C" denotes a  $\pm 2\%$ , Suffix "D" denotes a  $\pm 1\%$ .

### MECHANICAL DATA

- ◇ Case: DO-41
- ◇ Terminals: Solderable per MIL-STD-202, Method 208
- ◇ Polarity: Cathode Band
- ◇ Marking: Type Number
- ◇ Weight: 0.012 ounces, 0.34 grams



Dimensions in millimeters

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive For capacitive load, derate by 20%

	SYMBOL	VALUE	UNIT
Zener current (see table "characteristics")			
Power dissipation at $T_{amb}=25^{\circ}\text{C}$	$P_{tot}$	1.5 <sup>1)</sup>	W
Junction temperature	$T_J$	150	°C
Storage temperature range	$T_{STG}$	-55---+150	°C

	SYMBOL	MIN	TYP	MAX	UNIT
Thermal resistance junction to lead	$R_{\theta JL}$	—	—	45 <sup>1)</sup>	°C/W
Forward voltage at $I_F=200\text{mA}$	$V_F$	—	—	1.2	V

NOTES: (1) Valid provided that leads at a distance of 10 mm from case are kept at ambient temperature

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JEDEC TYPE NUMBER (note 1)	ZENER VOLTAGE $V_Z$	TEST CURRENT $I_{ZT}$	MAXIMUM DYNAMIC $Z_{ZT}$	KNEE CURRENT $I_{ZK}$	MAXIMUM KNEE IMPEDANCE $Z_{ZK}$	MAXIMUM REVERSE CURRENT $I_R@V_R$	REVERSE VOLTAGE $V_R$	MAX.DC CURRENT $I_{ZM}$
	Volts	m A	Ohms	m A	Ohms	$\mu$ Adc	Volts	m A
1N5913B	3.3	113.6	10	1.0	500	100	1.0	454
1N5914B	3.6	104.2	9.0	1.0	500	75	1.0	416
1N5915B	3.9	96.1	7.5	1.0	500	25	1.0	384
1N5916B	4.3	87.2	6.0	1.0	500	5.0	1.0	348
1N5917B	4.7	79.8	5.0	1.0	500	5.0	1.5	319
1N5918B	5.1	73.5	4.0	1.0	350	5.0	2.0	294
1N5919B	5.6	66.9	2.0	1.0	250	5.0	3.0	267
1N5920B	6.2	60.5	2.0	1.0	200	5.0	4.0	241
1N5921B	6.8	55.1	2.5	1.0	200	5.0	5.2	220
1N5922B	7.5	50.0	3.0	0.5	400	5.0	6.0	200
1N5923B	8.2	45.7	3.5	0.5	400	5.0	6.5	182
1N5924B	9.1	41.2	4.0	0.5	500	5.0	7.0	164
1N5925B	10	37.5	4.5	0.25	500	5.0	8.0	150
1N5926B	11	34.1	5.5	0.25	550	1.0	8.4	136
1N5927B	12	31.2	6.5	0.25	550	1.0	9.1	125
1N5928B	13	28.8	7.0	0.25	550	1.0	9.9	115
1N5929B	15	25.0	9.0	0.25	600	1.0	11.4	110
1N5930B	16	23.4	10	0.25	600	1.0	12.2	93
1N5931B	18	20.8	12	0.25	650	1.0	13.7	83
1N5932B	20	18.7	14	0.25	650	1.0	15.2	75
1N5933B	22	17.0	17.5	0.25	650	1.0	16.7	68
1N5934B	24	15.6	19	0.25	700	1.0	18.2	62
1N5935B	27	13.9	23	0.25	700	1.0	20.6	55
1N5936B	30	12.5	28	0.25	750	1.0	22.8	50
1N5937B	33	11.4	33	0.25	800	1.0	25.1	45
1N5938B	36	10.4	38	0.25	850	1.0	27.4	41
1N5939B	39	9.6	45	0.25	900	1.0	29.7	38
1N5940B	43	8.7	53	0.25	950	1.0	32.7	34
1N5941B	47	8.0	67	0.25	1000	1.0	35.8	31
1N5942B	51	7.3	70	0.25	1100	1.0	38.8	29
1N5943B	56	6.7	86	0.25	1300	1.0	42.6	26
1N5944B	62	6.0	100	0.25	1500	1.0	47.1	24
1N5945B	68	5.5	120	0.25	1700	1.0	51.2	22
1N5946B	75	5.0	140	0.25	2000	1.0	56.0	20
1N5947B	82	4.6	160	0.25	2500	1.0	62.2	18
1N5948B	91	4.1	200	0.25	3000	1.0	69.2	16
1N5949B	100	3.7	250	0.25	3100	1.0	76.0	15
1N5950B	110	3.4	300	0.25	4000	1.0	83.6	13
1N5951B	120	3.1	380	0.25	4500	1.0	91.2	12
1N5952B	130	2.9	450	0.25	5000	1.0	98.8	11
1N5953B	150	2.5	600	0.25	6000	1.0	114.0	10
1N5954B	160	2.3	700	0.25	6500	1.0	121.6	9
1N5955B	180	2.1	900	0.25	7000	1.0	136.8	8
1N5956B	200	1.9	1200	0.25	8000	1.0	152.0	7

NOTES: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 2% tolerance, and D denotes a  $\pm 1\%$  tolerance. Also add a P suffix for plastic construction, e.g. 1N5956BP (G suffix designates glass body options described by separate data sheet).

2.Zener voltage ( $V_Z$ ) is measured at  $T_L=30^\circ\text{C}$  and 90 seconds after application of dc current.

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  $I_{ZK}$ . See MicroNote 202 for zener impedance variation with different operating currents.

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RATINGS AND CHARACTERISTIC CURVES(1N5913B - - - 1N5956B)

FIG.1 -- POWER DERATING CURVE

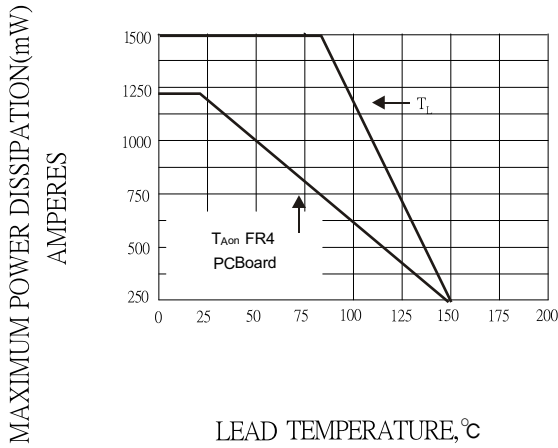


FIG.2- TRANSIENT SURGE CAPABILITY

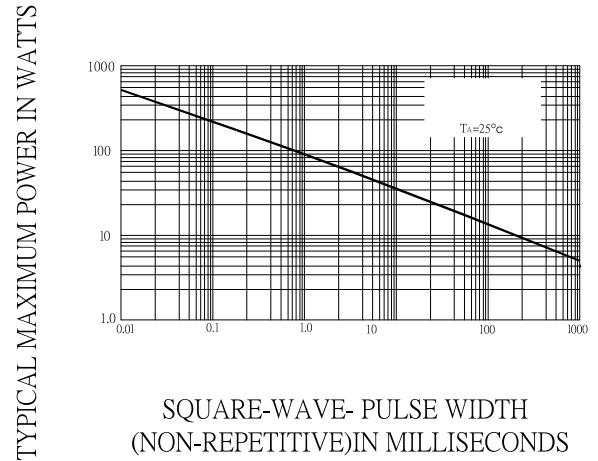


FIGURE 3 - CAPACITANCE vs.  $V_Z$  CURVE

