



# 1N5913B THRU 1N5956B

3W SILICON ZENER DIODE

**V<sub>Z</sub> : 3.3 - 200 Volts**  
**P<sub>D</sub> : 3 Watts**

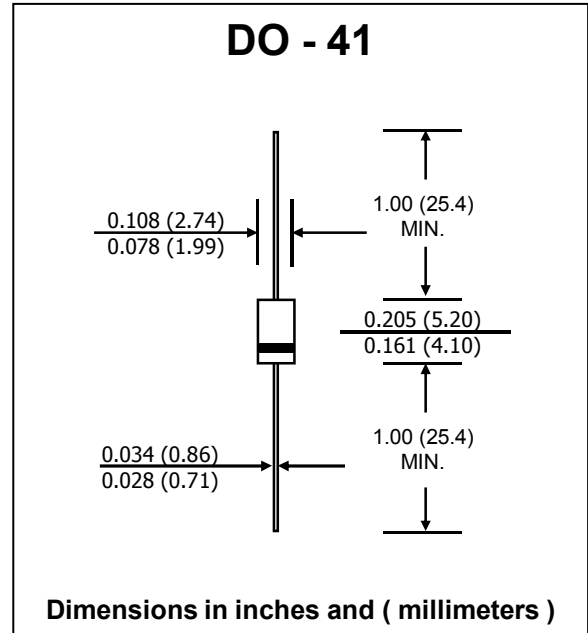
## FEATURES :

- \* Complete Voltage Range 3.3 to 200 Volts
- \* High peak reverse power dissipation
- \* High reliability
- \* Low leakage current



## MECHANICAL DATA :

- \* Case : DO-41 Molded plastic
- \* Epoxy : UL94V-0 rate flame retardant
- \* Lead : Axial lead solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity : Color band denotes cathode end
- \* Mounting position : Any
- \* Weight : 0.335 gram



## MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified

Rating	Symbol	Value	Unit
Maximum Steady state Power Dissipation @ T <sub>L</sub> = 75 °C, Lead Length = 3/8" Derate above 75 °C	P <sub>D</sub>	3.0  24	W  mW/°C
Steady State Power Dissipation @ T <sub>L</sub> = 50 °C, Lead Length = 3/8" Derate above 50 °C	P <sub>D</sub>	1.0  6.67	W  mW/°C
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	- 65 to + 200	°C



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### ELECTRICAL CHARACTERISTICS (Rating at 25 °C ambient temperature 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)	( $\Omega$ )	( $\Omega$ )	(mA)	( $\mu$ A)	(V)	(mA)
1N5913B	3.3	113.6	10	500	1.0	100	1.0	454
1N5914B	3.6	104.2	9.0	500	1.0	75	1.0	416
1N5915B	3.9	96.1	7.5	500	1.0	25	1.0	384
1N5916B	4.3	87.2	6.0	500	1.0	5.0	1.0	348
1N5917B	4.7	79.8	5.0	500	1.0	5.0	1.5	319
1N5918B	5.1	73.5	4.0	400	1.0	5.0	2.0	294
1N5919B	5.6	66.9	2.0	300	1.0	5.0	3.0	267
1N5920B	6.2	60.5	2.0	200	1.0	5.0	4.0	241
1N5921B	6.8	55.1	2.5	200	1.0	5.0	5.2	220
1N5922B	7.5	50.0	3.0	400	0.5	5.0	6.0	200
1N5923B	8.2	45.7	3.5	400	0.5	5.0	6.5	182
1N5924B	9.1	41.2	4.0	500	0.5	5.0	7.0	164
1N5925B	10	37.5	4.5	500	0.25	5.0	8.0	150
1N5926B	11	34.1	5.5	550	0.25	1.0	8.4	136
1N5927B	12	31.2	6.5	550	0.25	1.0	9.1	125
1N5928B	13	28.8	7.0	550	0.25	1.0	9.9	115
1N5929B	15	25.0	9.0	600	0.25	1.0	11.4	100
1N5930B	16	23.4	10	600	0.25	1.0	12.2	93
1N5931B	18	20.8	12	650	0.25	1.0	13.7	83
1N5932B	20	18.7	14	650	0.25	1.0	15.2	75
1N5933B	22	17.0	17.5	650	0.25	1.0	16.7	68
1N5934B	24	15.6	19	700	0.25	1.0	18.2	62
1N5935B	27	13.9	23	700	0.25	1.0	20.6	55
1N5936B	30	12.5	26	750	0.25	1.0	22.8	50
1N5937B	33	11.4	33	800	0.25	1.0	25.1	45
1N5938B	36	10.4	38	850	0.25	1.0	27.4	41
1N5939B	39	9.6	45	900	0.25	1.0	29.7	38
1N5940B	43	8.7	53	950	0.25	1.0	32.7	34
1N5941B	47	8.0	67	1000	0.25	1.0	35.8	31
1N5942B	51	7.3	70	1100	0.25	1.0	38.8	29
1N5943B	56	6.7	86	1300	0.25	1.0	42.6	26
1N5944B	62	6.0	100	1500	0.25	1.0	47.1	24
1N5945B	68	5.5	120	1700	0.25	1.0	51.7	22
1N5946B	75	5.0	140	2000	0.25	1.0	56.0	20
1N5947B	82	4.6	160	2500	0.25	1.0	62.2	18
1N5948B	91	4.1	200	3000	0.25	1.0	69.2	16
1N5949B	100	3.7	250	3100	0.25	1.0	76.0	15
1N5950B	110	3.4	300	4000	0.25	1.0	83.6	13
1N5951B	120	3.1	380	4500	0.25	1.0	91.2	12
1N5952B	130	2.9	450	5000	0.25	1.0	98.8	11
1N5953B	150	2.5	600	6000	0.25	1.0	114.0	10
1N5954B	160	2.3	700	6500	0.25	1.0	121.6	9.0
1N5955B	180	2.1	900	7000	0.25	1.0	136.8	8.0
1N5956B	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.



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## RATINGS AND CHARACTERISTIC CURVES

FIG. 1 - POWER TEMPERATURE DERATING CURVE

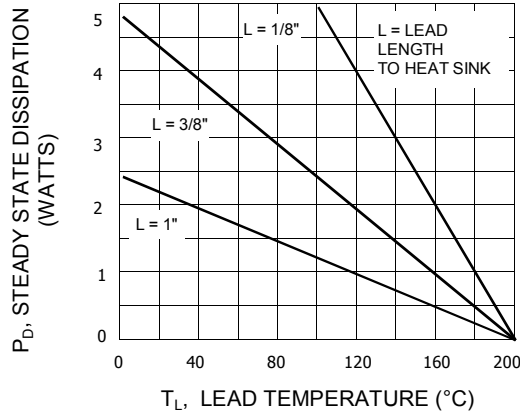


FIG. 2 - TYPICAL THERMAL RESPONSE  $L$ , LEAD LENGTH = 3/8 INCH

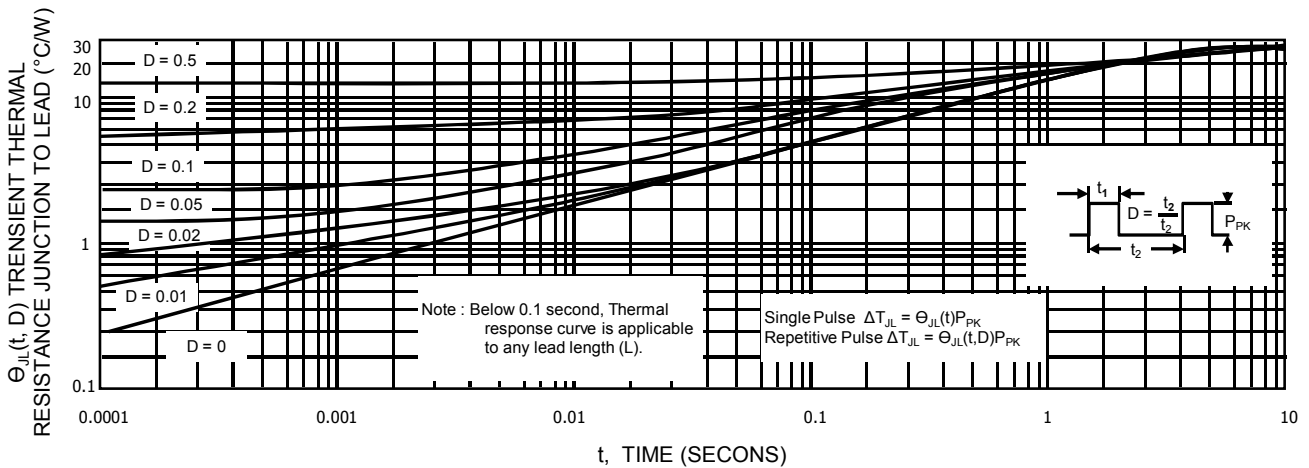


FIG. 3 - MAXIMUM SURGE POWER

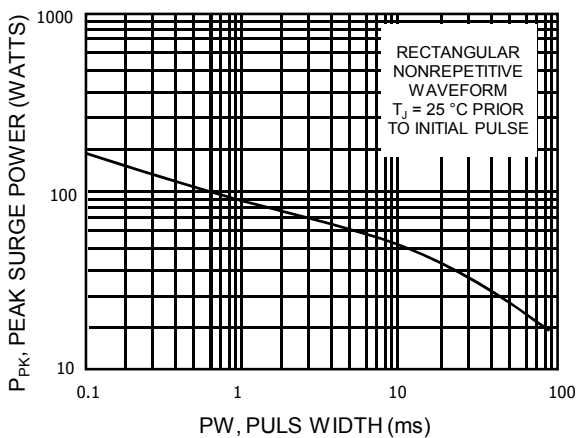
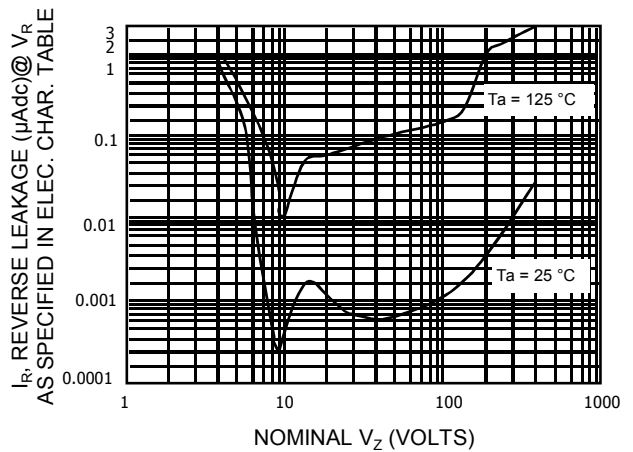


FIG. 4 - TYPICAL REVERSE LEAKAGE

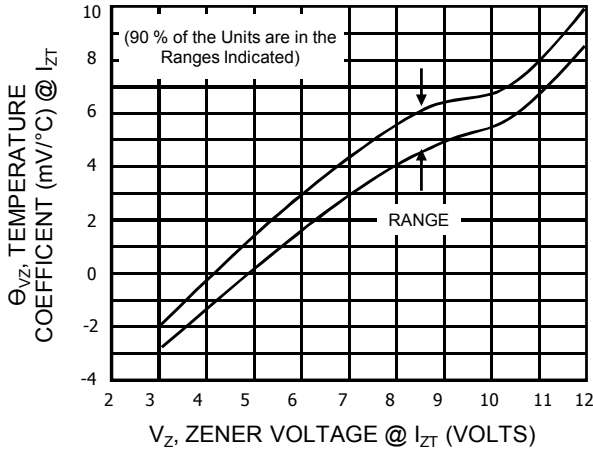




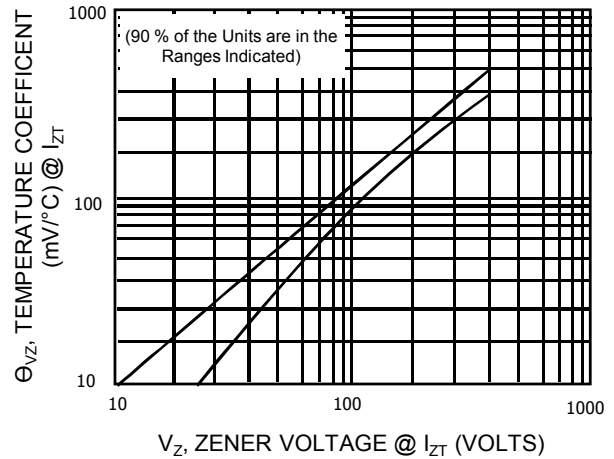
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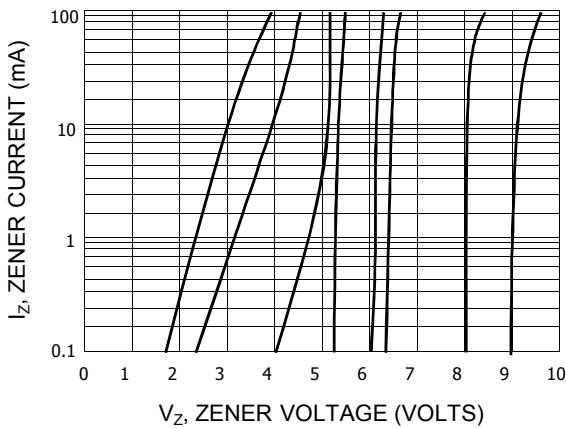
**FIG. 5 - TEMPERATURE COEFFICIENT RANGES  
UNITS TO 12 VOLTS**



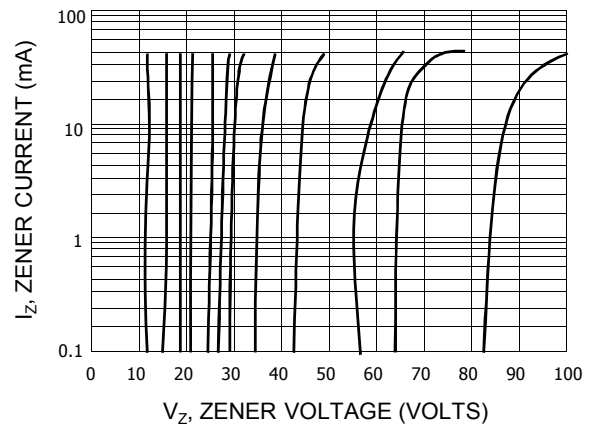
**FIG. 6 - TEMPERATURE COEFFICIENT RANGES  
UNITS 10 TO 400 VOLTS**



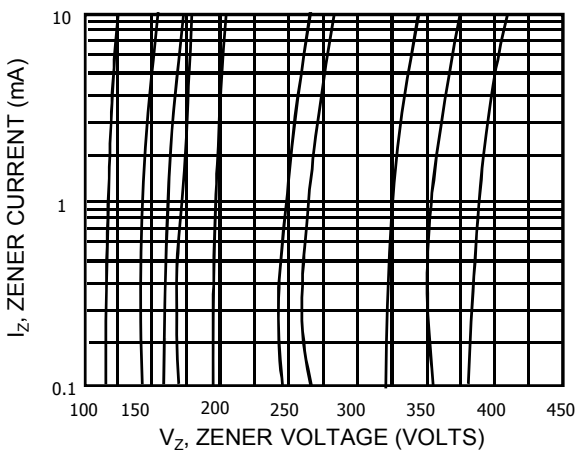
**FIG. 7 - ZENER VOLTAGE VS. ZENER CURRENT  
 $V_Z = 3.3$  thru 10 VOLTS**



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



**FIG. 9 - ZENER VOLTAGE VS. ZENER CURRENT  
 $V_Z = 100$  thru 400 VOLTS**



**FIG. 10 - TYPICAL THERMAL RESISTANCE**

