

# 1N5913 - 1N5956

**$V_Z$  : 3.3 - 200 Volts**

**$P_D$  : 1.5 Watts**

**FEATURES :**

- \* Complete Voltage Range 3.3 to 240 Volts
- \* High peak reverse power dissipation
- \* High reliability
- \* Low leakage current
- \* **Pb / RoHS Free**

**MECHANICAL DATA**

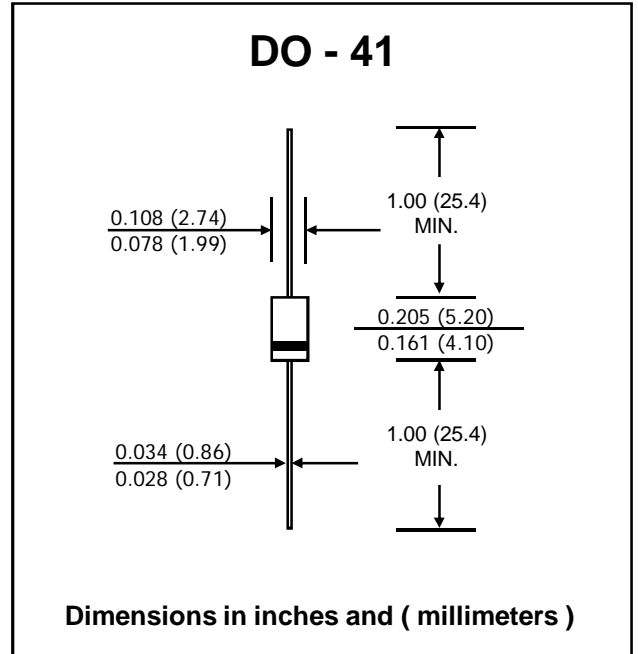
- \* Case : DO-41 Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Axial lead solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity : Color band denotes cathode end
- \* Mounting position : Any
- \* Weight : 0.335 gram

**MAXIMUM RATINGS**

Rating at 25 °C ambient temperature unless otherwise specified

Rating	Symbol	Value	Unit
Maximum Steady state Power Dissipation @ $T_L = 75\text{ }^\circ\text{C}$ , Lead Length = 3/8"	$P_D$	1.5	W
Operating and Storage Temperature Range	$T_J, T_{STG}$	- 65 to + 175	$^\circ\text{C}$

## SILICON ZENER DIODES





## 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)
1N5913	3.3	113.6	10	500	1.0	100	1.0	454
1N5914	3.6	104.2	9.0	500	1.0	75	1.0	416
1N5915	3.9	96.1	7.5	500	1.0	25	1.0	384
1N5916	4.3	87.2	6.0	500	1.0	5.0	1.0	348
1N5917	4.7	79.8	5.0	500	1.0	5.0	1.5	319
1N5918	5.1	73.5	4.0	400	1.0	5.0	2.0	294
1N5919	5.6	66.9	2.0	300	1.0	5.0	3.0	267
1N5920	6.2	60.5	2.0	200	1.0	5.0	4.0	241
1N5921	6.8	55.1	2.5	200	1.0	5.0	5.2	220
1N5922	7.5	50.0	3.0	400	0.5	5.0	6.0	200
1N5923	8.2	45.7	3.5	400	0.5	5.0	6.5	182
1N5924	9.1	41.2	4.0	500	0.5	5.0	7.0	164
1N5925	10	37.5	4.5	500	0.25	5.0	8.0	150
1N5926	11	34.1	5.5	550	0.25	1.0	8.4	136
1N5927	12	31.2	6.5	550	0.25	1.0	9.1	125
1N5928	13	28.8	7.0	550	0.25	1.0	9.9	115
1N5929	15	25.0	9.0	600	0.25	1.0	11.4	100
1N5930	16	23.4	10	600	0.25	1.0	12.2	93
1N5931	18	20.8	12	650	0.25	1.0	13.7	83
1N5932	20	18.7	14	650	0.25	1.0	15.2	75
1N5933	22	17.0	17.5	650	0.25	1.0	16.7	68
1N5934	24	15.6	19	700	0.25	1.0	18.2	62
1N5935	27	13.9	23	700	0.25	1.0	20.6	55
1N5936	30	12.5	26	750	0.25	1.0	22.8	50
1N5937	33	11.4	33	800	0.25	1.0	25.1	45
1N5938	36	10.4	38	850	0.25	1.0	27.4	41
1N5939	39	9.6	45	900	0.25	1.0	29.7	38
1N5940	43	8.7	53	950	0.25	1.0	32.7	34
1N5941	47	8.0	67	1000	0.25	1.0	35.8	31
1N5942	51	7.3	70	1100	0.25	1.0	38.8	29
1N5943	56	6.7	86	1300	0.25	1.0	42.6	26
1N5944	62	6.0	100	1500	0.25	1.0	47.1	24
1N5945	68	5.5	120	1700	0.25	1.0	51.7	22
1N5946	75	5.0	140	2000	0.25	1.0	56.0	20
1N5947	82	4.6	160	2500	0.25	1.0	62.2	18
1N5948	91	4.1	200	3000	0.25	1.0	69.2	16
1N5949	100	3.7	250	3100	0.25	1.0	76.0	15
1N5950	110	3.4	300	4000	0.25	1.0	83.6	13
1N5951	120	3.1	380	4500	0.25	1.0	91.2	12
1N5952	130	2.9	450	5000	0.25	1.0	98.8	11
1N5953	150	2.5	600	6000	0.25	1.0	114.0	10
1N5954	160	2.3	700	6500	0.25	1.0	121.6	9.0
1N5955	180	2.1	900	7000	0.25	1.0	136.8	8.0
1N5956	200	1.9	1900	9990	0.25	1.0	152.0	7.0

Note : (1) Suffix "A" indicates  $\pm 10\%$  tolerance, suffix "B" indicates  $\pm 5\%$  tolerance and suffix "C" indicates  $\pm 2\%$  tolerance.

RATING AND CHARACTERISTIC CURVES ( 1N5913 - 1N5956 )

FIG. 1 - POWER TEMPERATURE DERATING CURVE

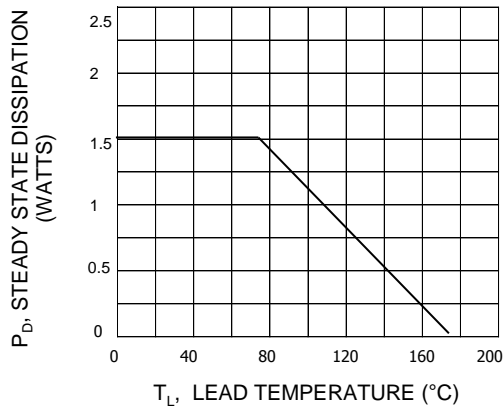


FIG. 2 - TYPICAL THERMAL RESPONSE L, LEAD LENGTH = 3/8 INCH

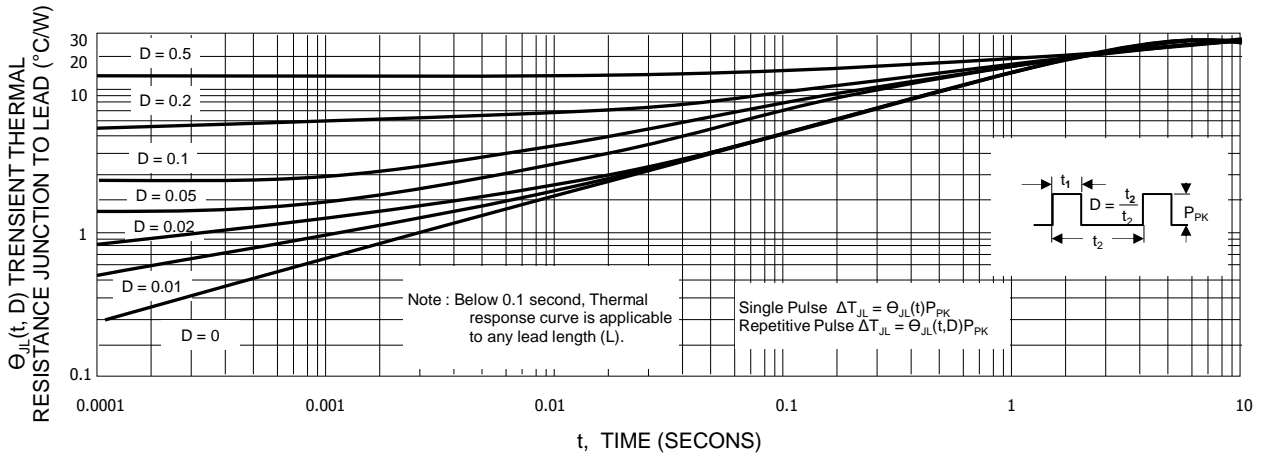


FIG. 3 - MAXIMUM SURGE POWER

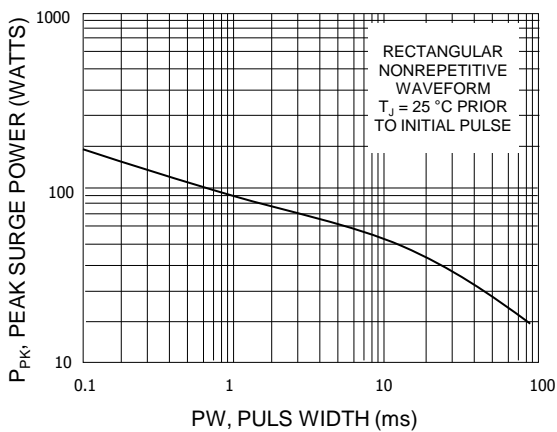
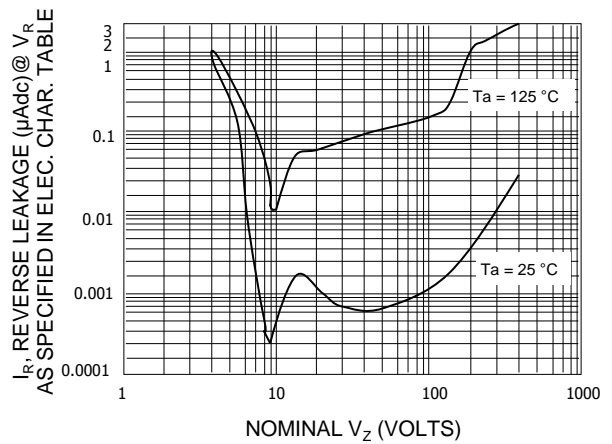


FIG. 4 - TYPICAL REVERSE LEAKAGE



RATING AND CHARACTERISTIC CURVES ( 1N5913 - 1N5956 )

FIG. 5 - TEMPERATURE COEFFICIENT RANGES  
UNITS TO 12 VOLTS

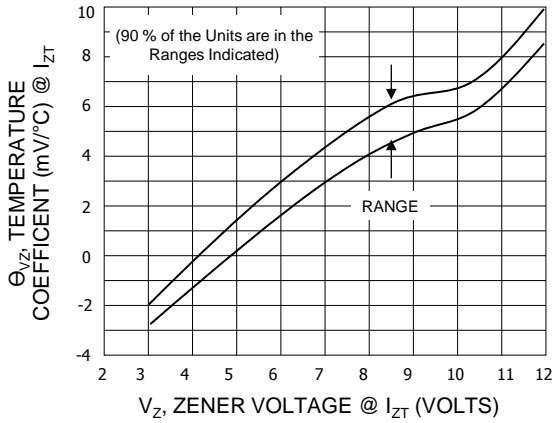


FIG. 6 - TEMPERATURE COEFFICIENT RANGES  
UNITS 10 TO 400 VOLTS

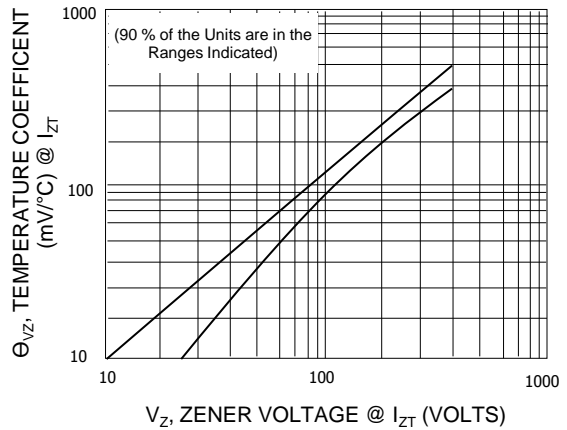


FIG. 7 - ZENER VOLTAGE VS. ZENER CURRENT  
 $V_Z = 3.3$  thru 10 VOLTS

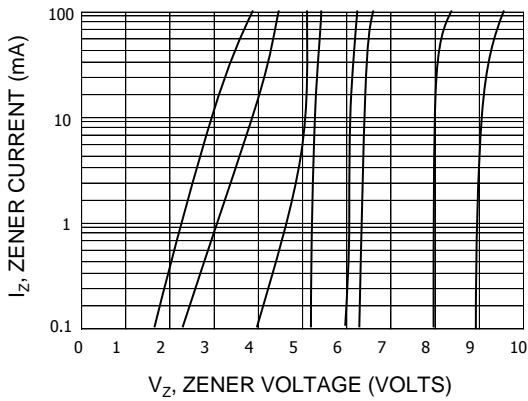


FIG. 8 - ZENER VOLTAGE VS. ZENER CURRENT  
 $V_Z = 12$  thru 82 VOLTS

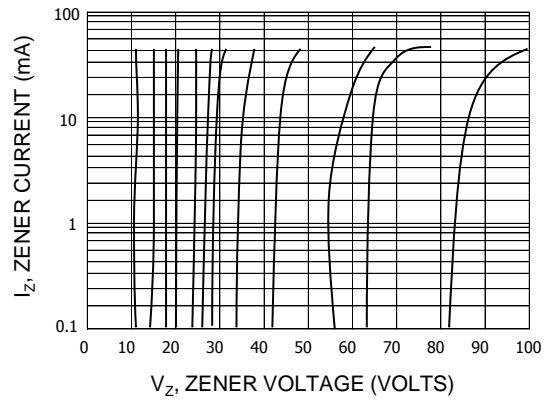


FIG. 9 - ZENER VOLTAGE VS. ZENER CURRENT  
 $V_Z = 100$  thru 400 VOLTS

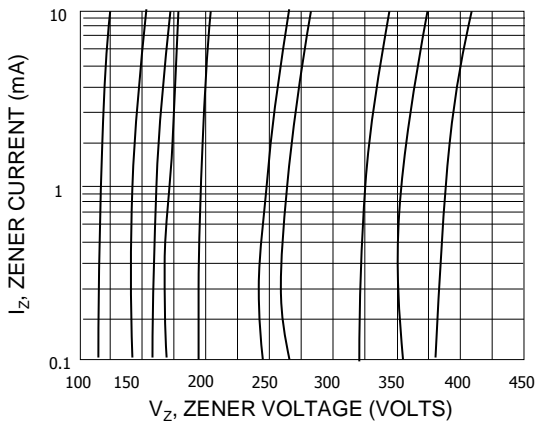


FIG. 10 - TYPICAL THERMAL RESISTANCE

