

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

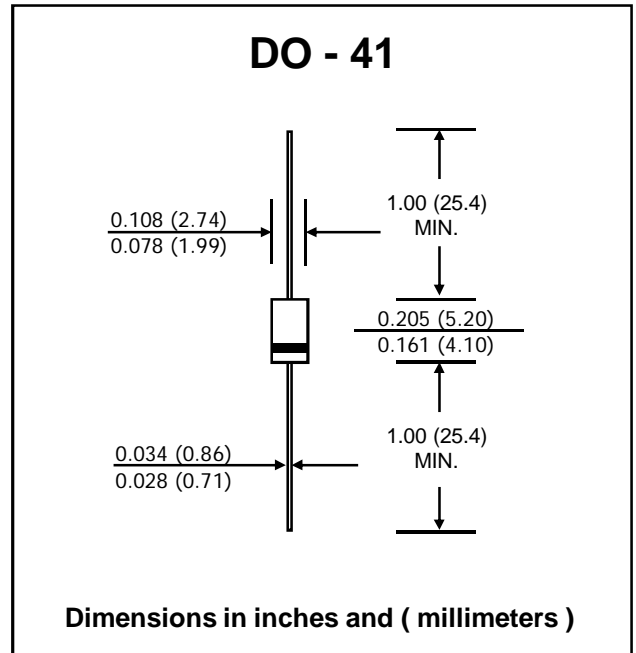
- * Case : DO-41 Molded plastic
- * Epoxy : UL94V-O rate flame retardant
- * Lead : Axial lead solderable per MIL-STD-202, method 208 guaranteed
- * Polarity : Color band denotes cathode end
- * Mounting position : Any
- * Weight : 0.335 gram

MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified

| Rating | Symbol | Value | Unit |
|--|-----------------------------------|---------------|------|
| Maximum Steady state Power Dissipation @ T _L = 75 °C, Lead Length = 3/8" | P _D | 1.5 | W |
| Operating and Storage Temperature Range | T _J , T _{STG} | - 65 to + 175 | °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) | (Ω) | (Ω) | (mA) | (μ 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

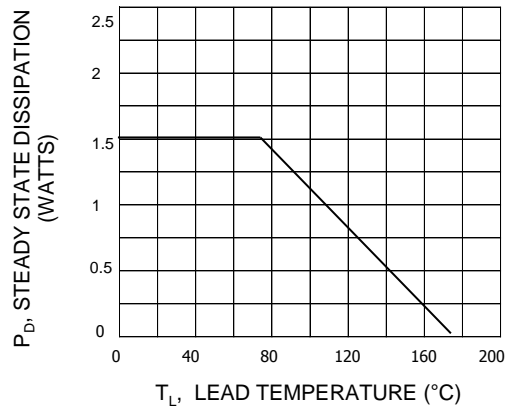


FIG. 2 - TYPICAL THERMAL RESPONSE L, LEAD LENGTH = 3/8 INCH

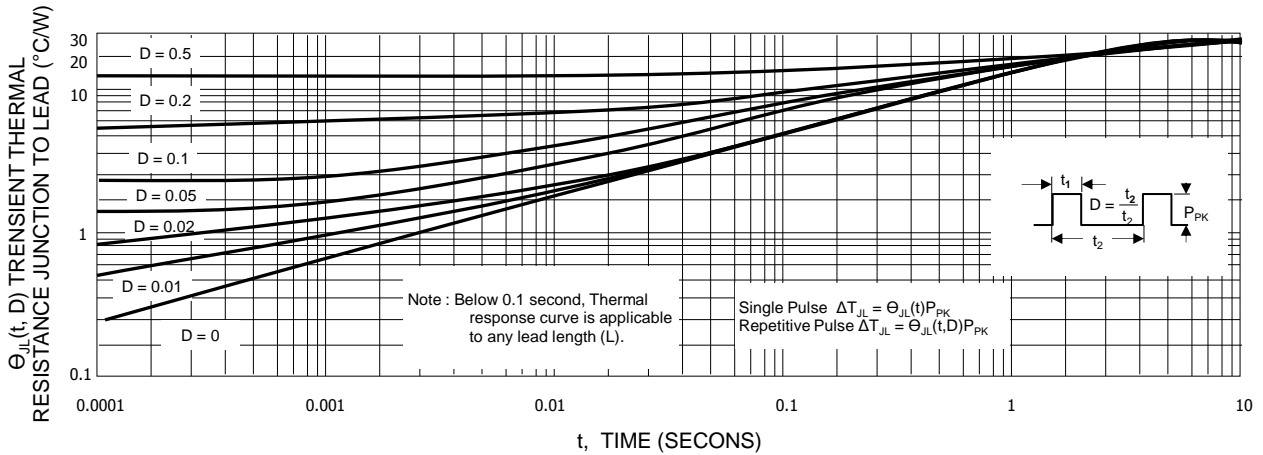


FIG. 3 - MAXIMUM SURGE POWER

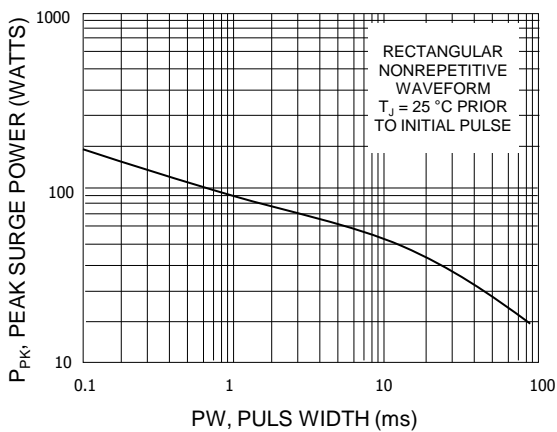
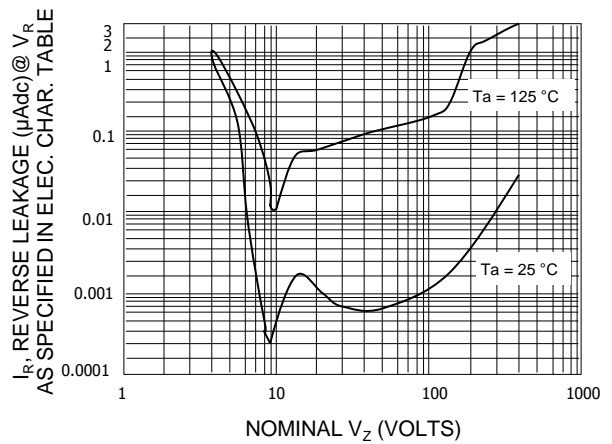


FIG. 4 - TYPICAL REVERSE LEAKAGE



RATING AND CHARACTERISTIC CURVES (1N5913 - 1N5956)

FIG. 5 - TEMPERATURE COEFFICIENT RANGES
UNITS TO 12 VOLTS

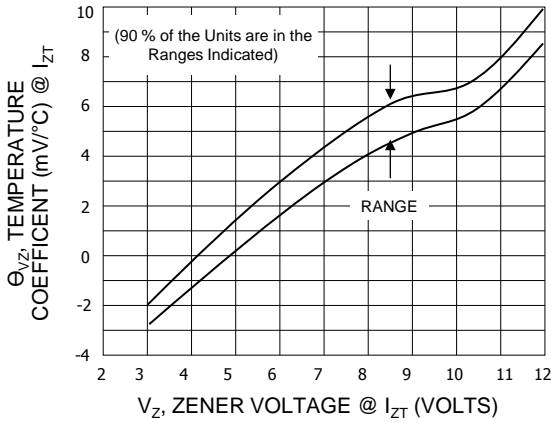


FIG. 6 - TEMPERATURE COEFFICIENT RANGES
UNITS 10 TO 400 VOLTS

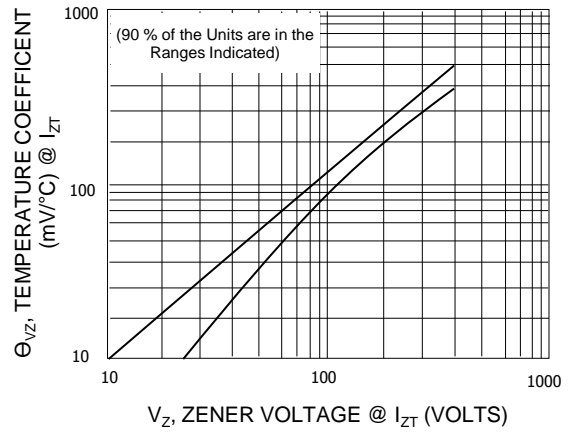


FIG. 7 - ZENER VOLTAGE VS. ZENER CURRENT
 $V_Z = 3.3$ thru 10 VOLTS

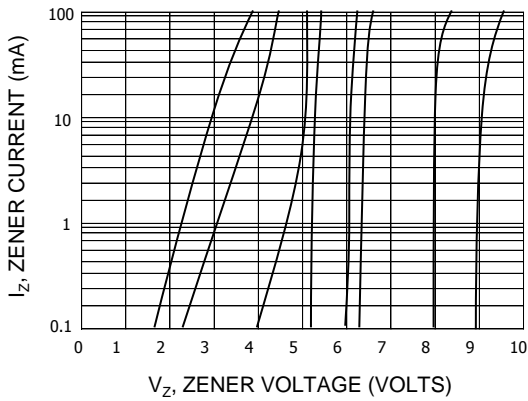


FIG. 8 - ZENER VOLTAGE VS. ZENER CURRENT
 $V_Z = 12$ thru 82 VOLTS

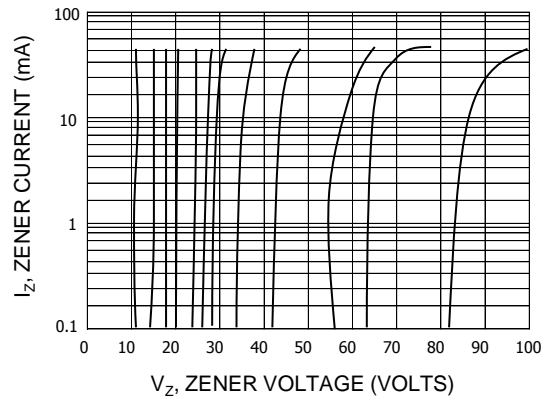


FIG. 9 - ZENER VOLTAGE VS. ZENER CURRENT
 $V_Z = 100$ thru 400 VOLTS

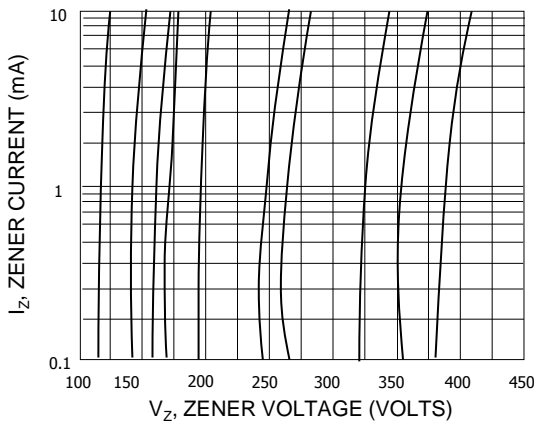


FIG. 10 - TYPICAL THERMAL RESISTANCE

