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**1N957  
THRU  
1N978**

## Features

- Zener Voltage 6.8V to 51V
- Silicon Planar Power Zener Diodes
- Standards zener voltage tolerance is  $\pm 20\%$ , Add suffix "A" for  $\pm 10\%$  tolerance and suffix "B" for  $\pm 5\%$  tolerance, non standards and higher zener voltage upon request

## Mechanical Data

- Case: DO-35 glass case
- Polarity: Color band denotes cathode end
- Weight: Approx. 0.13 gram

## Maximum Ratings

|                                                 | Symbol           | Value       | Units            |
|-------------------------------------------------|------------------|-------------|------------------|
| Zener Current                                   |                  | See Table 1 |                  |
| Power Dissipation<br>@ $T_A = 25^\circ\text{C}$ | $P_{\text{tot}}$ | 500         | mW               |
| Junction Temperature                            | $T_J$            | 175         | $^\circ\text{C}$ |
| Storage Temperature<br>Range                    | $T_{\text{STG}}$ | -65 to 175  | $^\circ\text{C}$ |

## Electrical Characteristics @ $25^\circ\text{C}$ Unless Otherwise Specified

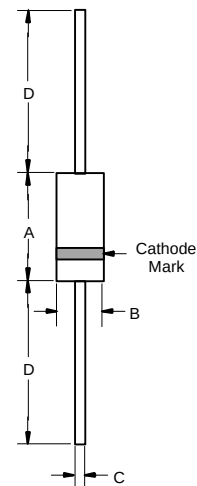
|                                           | Symbol          | Maximum | Unit               |
|-------------------------------------------|-----------------|---------|--------------------|
| Thermal resistance                        | $R_{\theta JA}$ | 300     | $^\circ\text{C/W}$ |
| Forward Voltage<br>@ $I_F = 200\text{mA}$ | $V_F$           | 1.5     | V                  |

### NOTE:

Valid provided that a distance of 8mm from case are kept at ambient temperature

## 0.5W Silicon Planar Zener Diodes

### DO-35



| DIMENSIONS |        |      |       |      |      |
|------------|--------|------|-------|------|------|
| DIM        | INCHES |      | MM    |      | NOTE |
|            | MIN    | MAX  | MIN   | MAX  |      |
| A          | ---    | .166 | ---   | 4.2  |      |
| B          | ---    | .079 | ---   | 2.00 |      |
| C          | ---    | .020 | ---   | .52  |      |
| D          | 1.000  | ---  | 25.40 | ---  |      |

# 1N957 thru 1N978



| MCC<br>PART<br>NUMBER | ZENER<br>VOLTAGE <sup>3)</sup><br>@TEST<br>CURRENT |                 | MAXIMUM ZENER<br>IMPEDANCE <sup>1)</sup> |                 |                 | MAXIMUM REVERSE<br>LEAKAGE CURRENT<br>TEST-VOLTAGE |          |          | MAXIMUM<br>ZENER<br>CURRENT   | TYPICAL<br>TEMP.<br>COEFFICIENT |
|-----------------------|----------------------------------------------------|-----------------|------------------------------------------|-----------------|-----------------|----------------------------------------------------|----------|----------|-------------------------------|---------------------------------|
|                       | V <sub>Z</sub>                                     | I <sub>ZT</sub> | Z <sub>ZT</sub>                          | Z <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub> <sup>2)</sup>                       | Suffix A | Suffix B | I <sub>ZM</sub> <sup>2)</sup> |                                 |
|                       | V                                                  | mA              | Ω                                        | Ω               | mA              | μA                                                 | V        | V        | mA                            |                                 |
| 1N957                 | 6.8                                                | 18.5            | 4.5                                      | 700             | 1.0             | 150                                                | 4.9      | 5.2      | 47                            | 0.050                           |
| 1N958                 | 7.5                                                | 16.5            | 5.5                                      | 700             | 0.5             | 75                                                 | 5.4      | 5.7      | 42                            | 0.058                           |
| 1N959                 | 8.2                                                | 15              | 5.5                                      | 700             | 0.5             | 50                                                 | 5.9      | 6.2      | 38                            | 0.062                           |
| 1N960                 | 9.1                                                | 14              | 5.5                                      | 700             | 0.5             | 10                                                 | 6.6      | 6.9      | 35                            | 0.068                           |
| 1N961                 | 10                                                 | 12.5            | 5.5                                      | 700             | 0.25            | 5                                                  | 7.2      | 7.6      | 32                            | 0.075                           |
| 1N962                 | 11                                                 | 11.5            | 5                                        | 700             | 0.25            | 5                                                  | 8.0      | 8.4      | 28                            | 0.076                           |
| 1N963                 | 12                                                 | 10.5            | 11.5                                     | 700             | 0.25            | 5                                                  | 8.6      | 9.1      | 26                            | 0.077                           |
| 1N964                 | 13                                                 | 9.5             | 13                                       | 700             | 0.25            | 5                                                  | 9.4      | 9.9      | 24                            | 0.079                           |
| 1N965                 | 15                                                 | 8.5             | 16                                       | 700             | 0.25            | 5                                                  | 10.8     | 11.4     | 21                            | 0.082                           |
| 1N966                 | 16                                                 | 7.8             | 17                                       | 700             | 0.25            | 5                                                  | 11.5     | 12.2     | 19                            | 0.083                           |
| 1N967                 | 18                                                 | 7.0             | 21                                       | 750             | 0.25            | 5                                                  | 13.0     | 13.7     | 17                            | 0.085                           |
| 1N968                 | 20                                                 | 6.2             | 25                                       | 750             | 0.25            | 5                                                  | 14.4     | 15.2     | 15                            | 0.086                           |
| 1N969                 | 22                                                 | 5.6             | 29                                       | 750             | 0.25            | 5                                                  | 15.8     | 16.7     | 14                            | 0.087                           |
| 1N970                 | 24                                                 | 5.2             | 33                                       | 750             | 0.25            | 5                                                  | 17.3     | 18.2     | 14                            | 0.088                           |
| 1N971                 | 27                                                 | 4.6             | 41                                       | 750             | 0.25            | 5                                                  | 19.4     | 20.6     | 11                            | 0.090                           |
| 1N972                 | 30                                                 | 4.2             | 49                                       | 1000            | 0.25            | 5                                                  | 21.6     | 22.8     | 10                            | 0.091                           |
| 1N973                 | 33                                                 | 3.8             | 58                                       | 1000            | 0.25            | 5                                                  | 23.8     | 25.1     | 9.0                           | 0.092                           |
| 1N974                 | 36                                                 | 3.4             | 70                                       | 1000            | 0.25            | 5                                                  | 25.9     | 27.4     | 8.5                           | 0.093                           |
| 1N975                 | 39                                                 | 3.2             | 80                                       | 1000            | 0.25            | 5                                                  | 28.1     | 29.7     | 7.8                           | 0.094                           |
| 1N976                 | 43                                                 | 3.0             | 93                                       | 1500            | 0.25            | 5                                                  | 31.0     | 32.7     | 7.0                           | 0.095                           |
| 1N977                 | 47                                                 | 2.7             | 105                                      | 1500            | 0.25            | 5                                                  | 33.8     | 35.8     | 6.4                           | 0.095                           |
| 1N978                 | 51                                                 | 2.5             | 125                                      | 1500            | 0.25            | 5                                                  | 36.7     | 38.8     | 5.9                           | 0.096                           |

Note:

- 1) The Zener impedance is derived from the 1kHz AC voltage which results when an AC current having an RMS value equal to 10% of the Zener current (I<sub>ZT</sub>) is superimposed on I<sub>ZT</sub>. Zener impedance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.
- 2) Valid provided that leads are kept at ambient temperature at a distance of 8mm from case.
- 3) Measured with device junction in thermal equilibrium.