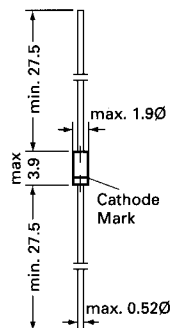


# 1N 957 ... 1N 978

## SILICON PLANAR ZENER DIODES

### Silicon Planar Zener Diodes

Standard Zener voltage tolerance is  $\pm 20\%$ . Add suffix "A" for  $\pm 10\%$  tolerance and suffix "B" for  $\pm 5\%$  tolerance. Other tolerance, non standard and higher Zener voltages upon request.



Glass case JEDEC DO-35

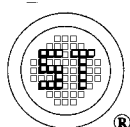
Dimensions in mm

### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

|                                                                                                          | Symbol    | Value             | Unit             |
|----------------------------------------------------------------------------------------------------------|-----------|-------------------|------------------|
| Zener Current see Table " Characteristics "                                                              |           |                   |                  |
| Power Dissipation at $T_{amb} = 50^\circ\text{C}$                                                        | $P_{tot}$ | 400 <sup>1)</sup> | mW               |
| Junction Temperature                                                                                     | $T_j$     | 175               | $^\circ\text{C}$ |
| Storage Temperature Range                                                                                | $T_{stg}$ | -65 to + 175      | $^\circ\text{C}$ |
| <sup>1)</sup> Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature. |           |                   |                  |

### Characteristics at $T_{amb} = 25^\circ\text{C}$

|                                                                                                          | Symbol    | Min. | Typ | Max               | Unit |
|----------------------------------------------------------------------------------------------------------|-----------|------|-----|-------------------|------|
| Thermal Resistance<br>Junction to Ambient Air                                                            | $R_{thA}$ | -    | -   | 0.3 <sup>1)</sup> | K/mW |
| Forward Voltage<br>at $I_F = 200\text{ mA}$                                                              | $V_F$     | -    | -   | 1.5               | V    |
| <sup>1)</sup> Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature. |           |      |     |                   |      |



**SEMTECH ELECTRONICS LTD.**  
( wholly owned subsidiary of HONEY TECHNOLOGY LTD. )



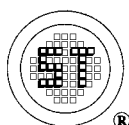
# 1N 957 ... 1N 978

## SILICON PLANAR ZENER DIODES

| Type  | Zener Voltage range <sup>1)</sup> |                 | Dynamic resistance |                                    |          | Typical Temperature coefficient<br><br>(% / °C) | Maximum Reverse Leakage Current |                |      | Maximum Regulator Current<br><br>I <sub>ZM</sub> |
|-------|-----------------------------------|-----------------|--------------------|------------------------------------|----------|-------------------------------------------------|---------------------------------|----------------|------|--------------------------------------------------|
|       | V <sub>znom</sub>                 | I <sub>ZT</sub> | r <sub>zT</sub>    | r <sub>zk</sub> at I <sub>Zk</sub> |          |                                                 | I <sub>R</sub> <sup>2)</sup>    | Test - Voltage |      |                                                  |
|       |                                   |                 |                    | Suffix A                           | Suffix B |                                                 |                                 |                |      |                                                  |
|       | V                                 | mA              | Ω                  | Ω                                  | mA       |                                                 | μA                              | V              | V    | mA                                               |
| 1N957 | 6.8                               | 18.5            | 4.5                | 700                                | 1.0      | 0.050                                           | 150                             | 4.9            | 5.2  | 47                                               |
| 1N958 | 7.5                               | 16.5            | 5.5                | 700                                | 0.5      | 0.058                                           | 75                              | 5.4            | 5.7  | 42                                               |
| 1N959 | 8.2                               | 15              | 6.5                | 700                                | 0.5      | 0.062                                           | 50                              | 5.9            | 6.2  | 38                                               |
| 1N960 | 9.1                               | 14              | 7.5                | 700                                | 0.5      | 0.068                                           | 25                              | 6.6            | 6.9  | 35                                               |
| 1N961 | 10                                | 12.5            | 8.5                | 700                                | 0.25     | 0.075                                           | 10                              | 7.2            | 7.6  | 32                                               |
| 1N962 | 11                                | 11.5            | 9.5                | 700                                | 0.25     | 0.076                                           | 5                               | 8.0            | 8.4  | 28                                               |
| 1N963 | 12                                | 10.5            | 11.5               | 700                                | 0.25     | 0.077                                           | 5                               | 8.6            | 9.1  | 26                                               |
| 1N964 | 13                                | 9.5             | 13                 | 700                                | 0.25     | 0.079                                           | 5                               | 9.4            | 9.9  | 24                                               |
| 1N965 | 15                                | 8.5             | 16                 | 700                                | 0.25     | 0.082                                           | 5                               | 10.8           | 11.4 | 21                                               |
| 1N966 | 16                                | 7.8             | 17                 | 700                                | 0.25     | 0.083                                           | 5                               | 11.5           | 12.2 | 19                                               |
| 1N967 | 18                                | 7.0             | 21                 | 750                                | 0.25     | 0.085                                           | 5                               | 13.0           | 13.7 | 17                                               |
| 1N968 | 20                                | 6.2             | 25                 | 750                                | 0.25     | 0.086                                           | 5                               | 14.4           | 15.2 | 15                                               |
| 1N969 | 22                                | 5.6             | 29                 | 750                                | 0.25     | 0.087                                           | 5                               | 15.8           | 16.7 | 14                                               |
| 1N970 | 24                                | 5.2             | 33                 | 750                                | 0.25     | 0.088                                           | 5                               | 17.3           | 18.2 | 13                                               |
| 1N971 | 27                                | 4.6             | 41                 | 750                                | 0.25     | 0.090                                           | 5                               | 19.4           | 20.6 | 11                                               |
| 1N972 | 30                                | 4.2             | 49                 | 1000                               | 0.25     | 0.091                                           | 5                               | 21.6           | 22.8 | 10                                               |
| 1N973 | 33                                | 3.8             | 58                 | 1000                               | 0.25     | 0.092                                           | 5                               | 23.8           | 25.1 | 9.0                                              |
| 1N974 | 36                                | 3.4             | 70                 | 1000                               | 0.25     | 0.093                                           | 5                               | 25.9           | 27.4 | 8.5                                              |
| 1N975 | 39                                | 3.2             | 80                 | 1000                               | 0.25     | 0.094                                           | 5                               | 28.1           | 29.7 | 7.8                                              |
| 1N976 | 43                                | 3.0             | 93                 | 1500                               | 0.25     | 0.095                                           | 5                               | 31.0           | 32.7 | 7.0                                              |
| 1N977 | 47                                | 2.7             | 105                | 1500                               | 0.25     | 0.095                                           | 5                               | 33.8           | 35.8 | 6.4                                              |
| 1N978 | 51                                | 2.5             | 125                | 1500                               | 0.25     | 0.095                                           | 5                               | 36.7           | 38.8 | 5.9                                              |

<sup>1)</sup> Tested with pulses  $t_p = 20$  ms.

<sup>2)</sup> Valid provided that leads are kept at ambient temperature at a distance of 8 mm from case.



**SEMTECH ELECTRONICS LTD.**

( wholly owned subsidiary of HONEY TECHNOLOGY LTD. )

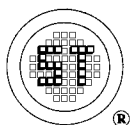
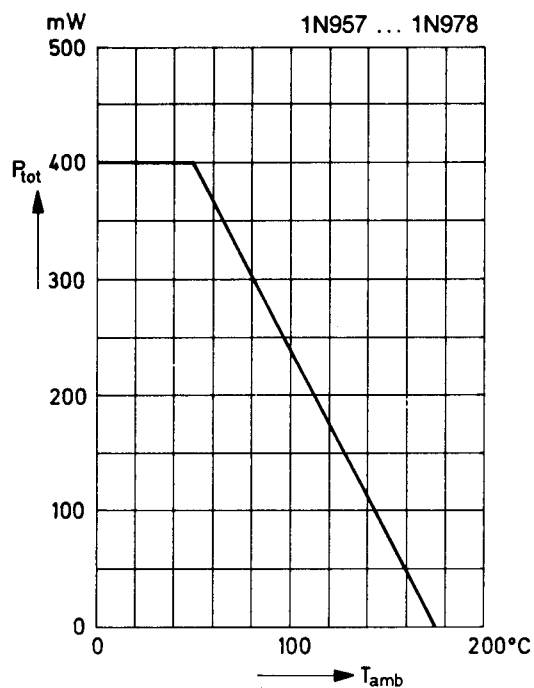


# 1N 957 ... 1N 978

## SILICON PLANAR ZENER DIODES

### Admissible power dissipation versus ambient temperature

Valid provided that leads are kept at ambient  
temperature at a distance of 10 mm from case.



**SEMTECH ELECTRONICS LTD.**

( wholly owned subsidiary of HONEY TECHNOLOGY LTD. )

