## Small Signal Zener Diodes

## Features

- Silicon Planar Low Noise Zener Diodes.
- 350 mW high quality voltage regulator designed for low leakage, low current and low noise applications
- 5 \% Tolerance on $\mathrm{V}_{\mathrm{Z}}$
- High temperature soldering guaranteed:
 $260^{\circ} \mathrm{C} / 4 \mathrm{X} 10$ seconds at terminals.
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


## Mechanical Data

Case: SOT-23 Plastic case
Weight: approx. 8.8 mg
Terminals: Solderable per MIL-STD-750, method 2026

## Packaging codes/options:

GS18 / 10 k per 13 " reel ( 8 mm tape), $10 \mathrm{k} / \mathrm{box}$
GS08 / 3 k per 7 " reel ( 8 mm tape), $15 \mathrm{k} / \mathrm{box}$

## Absolute Maximum Ratings

$\mathrm{T}_{\mathrm{amb}}=25^{\circ} \mathrm{C}$, unless otherwise specified

| Parameter | Test condition | Symbol | Value | Unit |
| :--- | :---: | :---: | :---: | :---: |
| Power dissipation |  | $\mathrm{P}_{\text {tot }}$ | $350^{1)}$ | mW |
| Forward voltage, maximum | $\mathrm{I}_{\mathrm{F}}=200 \mathrm{~mA}$ | $\mathrm{~V}_{\mathrm{F}}$ | 1.1 | V |
| Forward voltage, typical | $\mathrm{I}_{\mathrm{F}}=200 \mathrm{~mA}$ | $\mathrm{~V}_{\mathrm{F}}$ | 0.97 | V |

${ }^{1)}$ On FR - 5 board using recommended solder pad layout

## Thermal Characteristics

$\mathrm{T}_{\text {amb }}=25^{\circ} \mathrm{C}$, unless otherwise specified

| Parameter | Test condition | Symbol | Value | Unit |
| :--- | :---: | :---: | :---: | :---: |
| Maximum junction temperature |  | $\mathrm{T}_{\mathrm{j}}$ | 150 | ${ }^{\circ} \mathrm{C}$ |
| Storage temperature range |  | $\mathrm{T}_{\mathrm{S}}$ | -55 to +150 | ${ }^{\circ} \mathrm{C}$ |
| Thermal resistance junction to <br> ambient air |  | $\mathrm{R}_{\text {thJA }}$ | $420^{1)}$ | ${ }^{\circ} \mathrm{C} / \mathrm{W}$ |

${ }^{1)}$ On FR - 5 board using recommended solder pad layout

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Electrical Characteristics

| Partnumber | Marking Code | Zener ${ }^{1)}$ <br> Voltage | Test Current | Maximum Zener Impedance | Maximum Reverse Leakage Current |  | Maximum Zener Current | Maximum Noise Density |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $\mathrm{V}_{\mathrm{Z}}$ @ $\mathrm{I}_{\mathrm{ZT}}$ | $\mathrm{I}_{\mathrm{ZT}}$ | $\mathrm{Z}_{\mathrm{ZT}} @ \mathrm{I}_{\mathrm{ZT}}$ | $I_{R}$ | $\mathrm{V}_{\mathrm{R}}$ | $\mathrm{I}_{\text {ZM }}$ | $\begin{gathered} \mathrm{N}_{\mathrm{D}} @ \mathrm{I}_{\mathrm{ZT}}= \\ 250 \mu \mathrm{~A} \end{gathered}$ |
|  |  | V | $\mu \mathrm{A}$ | $\Omega$ | $\mu \mathrm{A}$ | V | mA | $\mu \mathrm{V} / \sqrt{ } \mathrm{Hz}$ |
| MMBZ4617-V | G17 | 2.4 | 250 | 1400 | 2.0 | 1.0 | 95 | 1.0 |
| MMBZ4618-V | G18 | 2.7 | 250 | 1500 | 1.0 | 1.0 | 90 | 1.0 |
| MMBZ4619-V | G19 | 3.0 | 250 | 1600 | 0.8 | 1.0 | 85 | 1.0 |
| MMBZ4620-V | G20 | 3.3 | 250 | 1650 | 7.5 | 1.5 | 80 | 1.0 |
| MMBZ4621-V | G21 | 3.6 | 250 | 1700 | 7.5 | 2.0 | 75 | 1.0 |
| MMBZ4622-V | G22 | 3.9 | 250 | 1650 | 5.0 | 2.0 | 70 | 1.0 |
| MMBZ4623-V | G23 | 4.3 | 250 | 1600 | 4.0 | 2.0 | 65 | 1.0 |
| MMBZ4624-V | G24 | 4.7 | 250 | 1550 | 10 | 3.0 | 60 | 1.0 |
| MMBZ4625-V | G25 | 5.1 | 250 | 1500 | 10 | 3.0 | 55 | 2.0 |
| MMBZ4626-V | G26 | 5.6 | 250 | 1400 | 10 | 4.0 | 50 | 4.0 |
| MMBZ4627-V | G27 | 6.2 | 250 | 1200 | 10 | 5.0 | 45 | 5.0 |

Note: ${ }^{1)} \mathrm{V}_{\mathrm{Z}}$ tested with 5 ms pulse
Package Dimensions in mm (Inches)


## Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).
The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.
Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design and may do so without further notice.
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