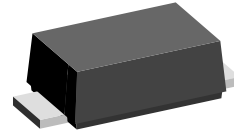


Zener Diodes

Features

- Silicon Planar Power Zener Diodes.
- Low profile surface-mount package.
- Low leakage current

- High temperature soldering:
260 °C/10 sec. at terminals



17249

Mechanical Data

Case: JEDEC DO-219AB (SMF[®]) Plastic Case

Packaging codes/options:

GS18 - 10 K per 13 " reel, (8 mm tape), 50 K/box

GS08 - 3 K per 7 " reel, (8 mm tape), 30 K/box

Weight: approx. 0.01 g

Absolute Maximum Ratings

T_{amb} = 25 °C, unless otherwise specified

| Parameter | Test condition | Symbol | Value | Unit |
|---|------------------------|------------------|-------------------|------|
| Zener current (see Table "Characteristics") | | | see page 2 | |
| Power dissipation | T _A = 25 °C | P _{tot} | 800 ¹⁾ | mW |

1) Mounted on epoxy glass PCB with 3 x 3 mm, Cu pads (≥ 40 μm thick)

Thermal Characteristics

T_{amb} = 25 °C, unless otherwise specified

| Parameter | Test condition | Symbol | Value | Unit |
|--|----------------|------------------|---------------|------|
| Thermal resistance junction to ambient air ¹⁾ | | R _{θJA} | 180 | K/W |
| Maximum junction temperature | | T _j | 150 | °C |
| Storage temperature range | | T _{STG} | - 55 to + 150 | °C |

1) Mounted on epoxy glass PCB with 3 x 3 mm, Cu pads (≥ 40 μm thick)

GZF3V6C to GZF91C



Vishay Semiconductors

Electrical Characteristics

Maximum $V_F = 1.2\text{ V}$ at $I_F = 200\text{ mA}$

| Partnumber | Marking Code | Zener Voltage Range ¹⁾ | | Differential Resistance | | Temperature Coefficient | | Test Current | Reverse Current at Reverse Voltage | | |
|------------|--------------|-----------------------------------|------|-------------------------|-----|-------------------------|-------|--------------|------------------------------------|-------|-------|
| | | $V_Z @ I_{ZT}$ | | $r_{dif} @ I_Z$ | | $\alpha_Z @ I_Z$ | | | I_{ZT} | I_R | V_R |
| | | V | | Ω | | %/°C | | | | | |
| min | max | typ | max | min | max | min | max | max | | | |
| GZF3V6C | W5 | 3.4 | 3.8 | 4 | 8 | -0.14 | -0.04 | 100 | 100 | 1 | |
| GZF3V9C | W6 | 3.7 | 4.1 | 4 | 8 | -0.14 | -0.04 | 100 | 50 | 1 | |
| GZF4V3C | W7 | 4 | 4.6 | 4 | 7 | -0.12 | -0.02 | 100 | 25 | 1 | |
| GZF4V7C | W8 | 4.4 | 5 | 3 | 7 | -0.1 | 0 | 100 | 10 | 1 | |
| GZF5V1C | W9 | 4.8 | 5.4 | 3 | 6 | -0.08 | -0.2 | 100 | 5 | 1 | |
| GZF5V6C | WA | 5.2 | 6 | 2 | 4 | -0.04 | 0.04 | 100 | 10 | 2 | |
| GZF6V2C | WB | 5.8 | 6.6 | 2 | 3 | -0.01 | 0.06 | 100 | 5 | 2 | |
| GZF6V8C | WC | 6.4 | 7.2 | 1 | 3 | 0 | 0.07 | 100 | 10 | 3 | |
| GZF7V5C | WD | 7 | 7.9 | 1 | 2 | 0 | 0.07 | 100 | 50 | 3 | |
| GZF8V2C | WE | 7.7 | 8.7 | 1 | 2 | 0.03 | 0.08 | 100 | 10 | 3 | |
| GZF9V1C | WF | 8.5 | 9.6 | 2 | 4 | 0.03 | 0.08 | 50 | 10 | 5 | |
| GZF10C | WG | 9.4 | 10.6 | 2 | 4 | 0.05 | 0.09 | 50 | 7 | 7.5 | |
| GZF11C | WH | 10.4 | 11.6 | 4 | 7 | 0.05 | 0.1 | 50 | 4 | 8.2 | |
| GZF12C | WI | 11.4 | 12.7 | 4 | 7 | 0.05 | 0.1 | 50 | 3 | 9.1 | |
| GZF13C | WK | 12.4 | 14.1 | 5 | 10 | 0.05 | 0.1 | 50 | 2 | 10 | |
| GZF15C | WL | 13.8 | 15.6 | 5 | 10 | 0.05 | 0.1 | 50 | 1 | 11 | |
| GZF16C | WM | 15.3 | 17.1 | 6 | 15 | 0.06 | 0.11 | 25 | 1 | 12 | |
| GZF18C | WN | 16.8 | 19.1 | 6 | 15 | 0.06 | 0.11 | 25 | 1 | 13 | |
| GZF20C | WO | 18.8 | 21.2 | 6 | 15 | 0.06 | 0.11 | 25 | 1 | 15 | |
| GZF22C | WP | 20.8 | 23.3 | 6 | 15 | 0.06 | 0.11 | 25 | 1 | 16 | |
| GZF24C | WR | 22.8 | 25.6 | 7 | 15 | 0.06 | 0.11 | 25 | 1 | 18 | |
| GZF27C | WS | 25.1 | 28.9 | 7 | 15 | 0.06 | 0.11 | 25 | 1 | 20 | |
| GZF30C | WT | 28 | 32 | 8 | 15 | 0.06 | 0.11 | 25 | 1 | 22 | |
| GZF33C | WU | 31 | 35 | 8 | 15 | 0.06 | 0.11 | 25 | 1 | 24 | |
| GZF36C | WW | 34 | 38 | 21 | 40 | 0.06 | 0.11 | 10 | 1 | 27 | |
| GZF39C | WX | 37 | 41 | 21 | 40 | 0.06 | 0.11 | 10 | 1 | 30 | |
| GZF43C | WY | 40 | 46 | 24 | 45 | 0.07 | 0.12 | 10 | 1 | 33 | |
| GZF47C | WZ | 44 | 50 | 24 | 45 | 0.07 | 0.12 | 10 | 1 | 36 | |
| GZF51C | X1 | 48 | 54 | 25 | 60 | 0.07 | 0.12 | 10 | 1 | 39 | |
| GZF56C | X2 | 52 | 60 | 25 | 60 | 0.07 | 0.12 | 10 | 1 | 43 | |
| GZF62C | X3 | 58 | 66 | 25 | 80 | 0.08 | 0.13 | 10 | 1 | 47 | |
| GZF68C | X4 | 64 | 72 | 25 | 80 | 0.08 | 0.13 | 10 | 1 | 51 | |
| GZF75C | X5 | 70 | 79 | 30 | 100 | 0.08 | 0.13 | 10 | 1 | 56 | |
| GZF82C | X6 | 77 | 87 | 30 | 100 | 0.08 | 0.13 | 10 | 1 | 62 | |
| GZF91C | X7 | 85 | 96 | 60 | 200 | 0.09 | 0.13 | 5 | 1 | 68 | |

¹⁾ Pulse test: $t_p \leq 5\text{ ms}$

Typical Characteristics ($T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

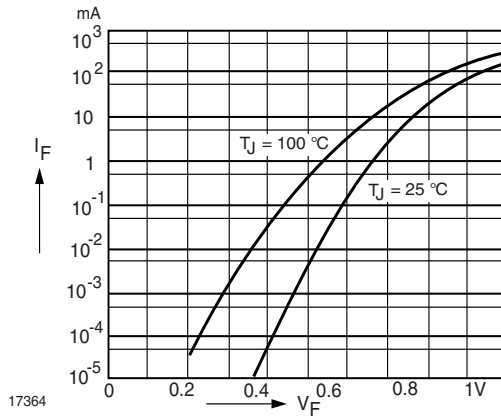


Figure 1. Forward characteristics

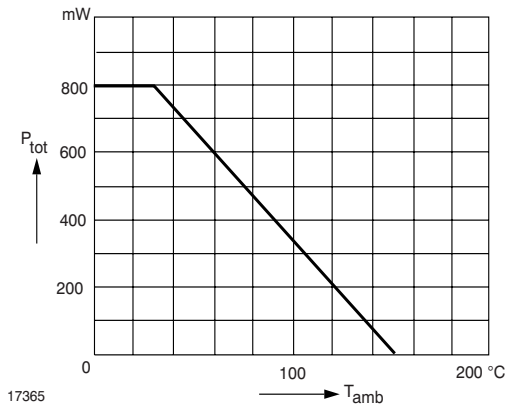


Figure 2. Admissible Power Dissipation vs. Ambient Temperature

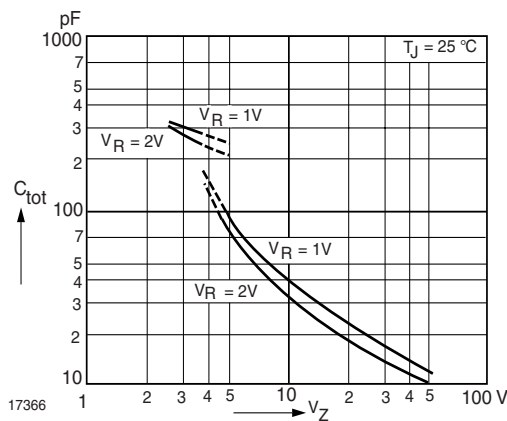


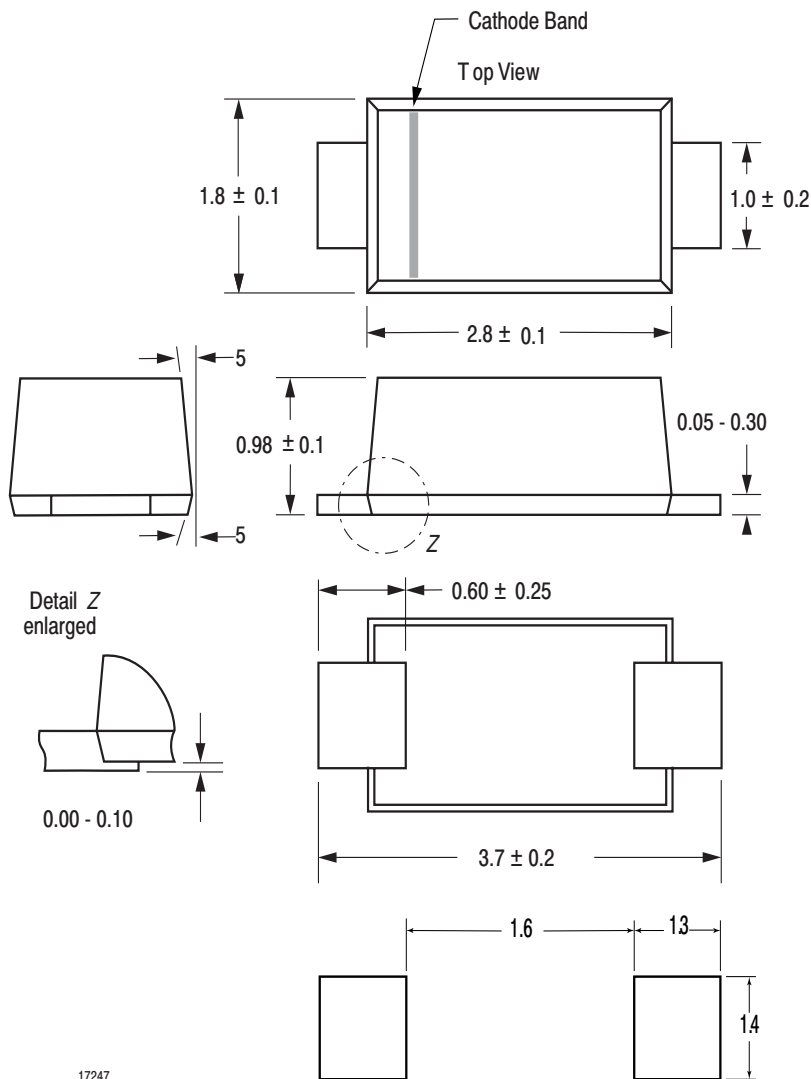
Figure 3. Capacitance vs. Zener Voltage

GZF3V6C to GZF91C



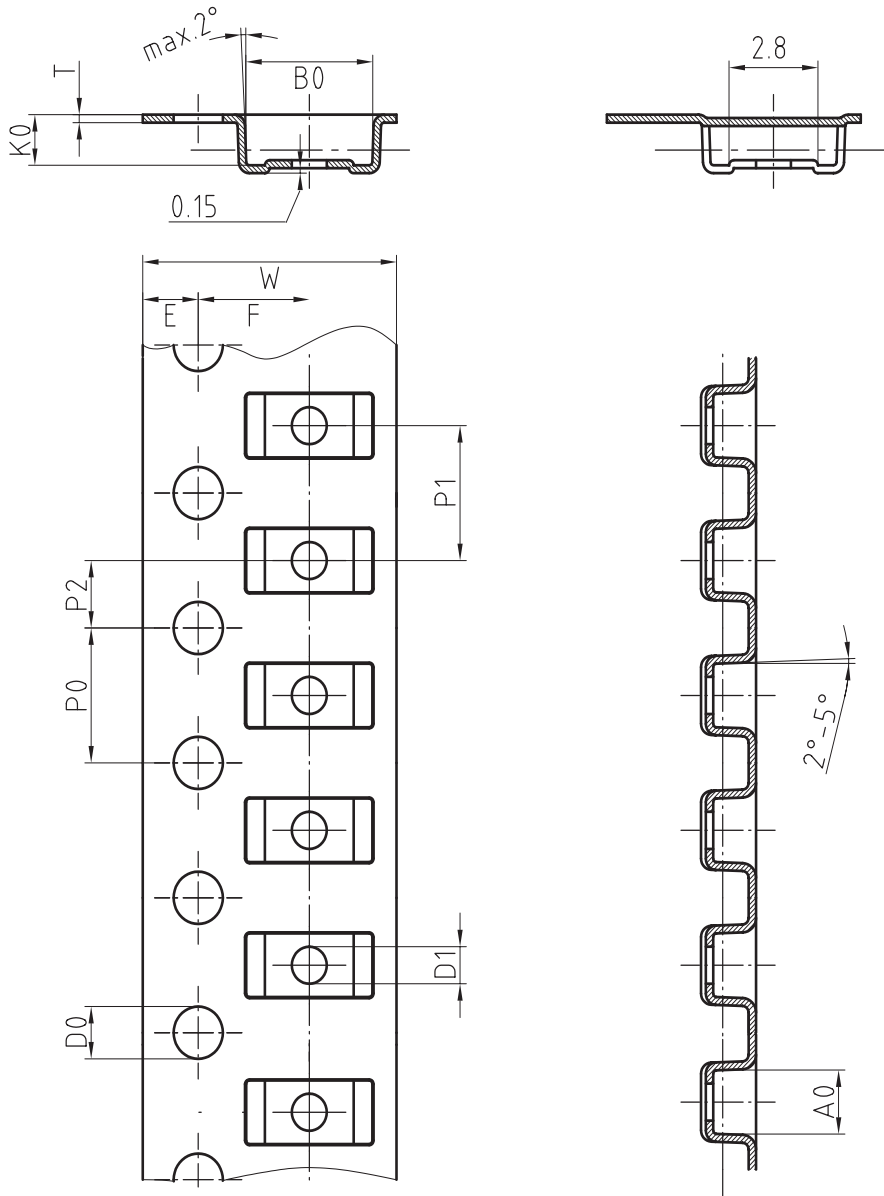
Vishay Semiconductors

Package Dimensions in mm



17247

Blistertape für SMF



| Mat: | A0 | B0 | K0 | W | T | P0 | P2 | P1 | D0 | D1 | E | F |
|------|-----|-----|-----|-----|-------|-----|-----|-----|-----|----|------|-----|
| PS | 1.9 | 4.0 | 1.5 | 8.0 | 0.235 | 4.0 | 2.0 | 4.0 | 1.5 | 1 | 1.75 | 3.5 |

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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.**

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use Vishay Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify Vishay Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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