



## Zener Diodes

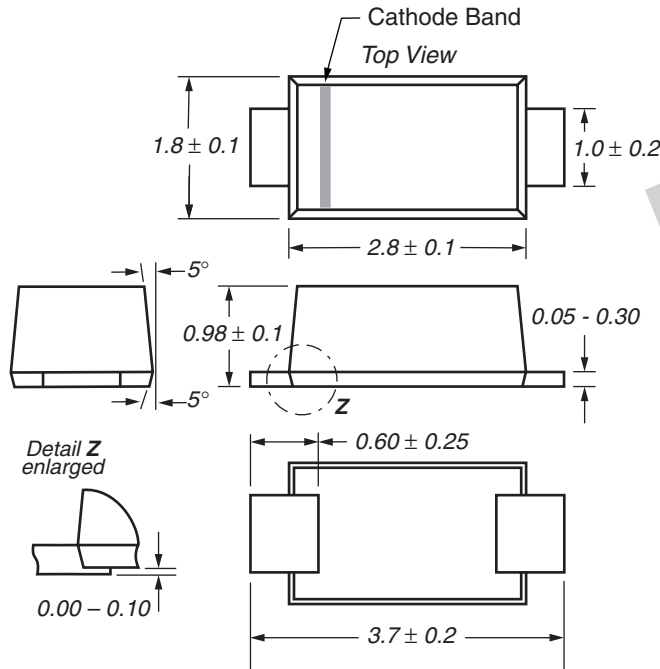
V<sub>z</sub> Range 3.6 to 91V

Power Dissipation 800mW

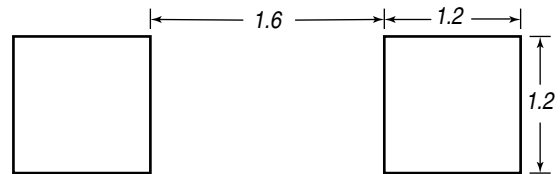
### DO-219AB (SMF)

*New Product*

*Patented*



### Mounting Pad Layout



Dimensions in millimeters

## Mechanical Data

**Case:** JEDEC DO-219 Plastic Case

**Weight:** approx. 0.01g

### Packaging codes/options:

D3/10K per 13" reel (8mm tape), 30K/box

D4/3K per 7" reel (8mm tape), 30K/box

## Features

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

## Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

| Parameter                                   | Symbol           | Value              | Unit |
|---|------------------|--------------------|------|
| Zener Current (see Table "Characteristics") |                  |                    |      |
| Power Dissipation at T <sub>A</sub> = 25°C  | P <sub>tot</sub> | 800 <sup>(1)</sup> | mW   |
| Thermal Resistance Junction to Ambient Air  | R <sub>θJA</sub> | 188 <sup>(1)</sup> | °C/W |
| Maximum Junction Temperature                | T <sub>j</sub>   | 175                | °C   |
| Storage Temperature Range                   | T <sub>s</sub>   | -65 to +175        | °C   |

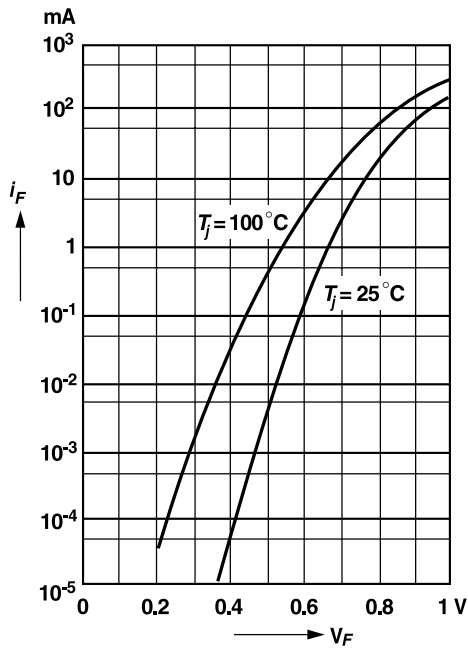
**Note:** (1) FR-4 or FR-5 board with 3 x 3mm solder pad layout

### Electrical Characteristics (T<sub>A</sub> = 25°C unless otherwise noted) Maximum V<sub>F</sub> = 1.2 V at I<sub>F</sub> = 200mA

| Type    | Marking Code | Zener Voltage                       |      |      | Differential Resistance                |      | Temperature Coefficient                |       | Test Current         | Reverse Current at Reverse Voltage |                    |
|---------|--------------|-------------------------------------|------|------|--|------|--|-------|----------------------|------------------------------------|--------------------|
|         |              | V <sub>Z</sub> (V) @ I <sub>Z</sub> |      |      | r <sub>diff</sub> (Ω) @ I <sub>Z</sub> |      | α <sub>Z</sub> @ I <sub>Z</sub> (%/°C) |       | I <sub>ZT</sub> (mA) | I <sub>R</sub> (μA)Max             | V <sub>R</sub> (V) |
|         |              | Min.                                | Nom. | Max. | Typ.                                   | Max. | Min.                                   | Max.  |                      |                                    |                    |
| GZF3V6C | W5           | 3.4                                 | 3.6  | 3.8  | 4                                      | 8    | -0.14                                  | -0.04 | 100                  | 100                                | 1                  |
| GZF3V9C | W6           | 3.7                                 | 3.9  | 4.1  | 4                                      | 8    | -0.14                                  | -0.04 | 100                  | 50                                 | 1                  |
| GZF4V3C | W7           | 4.0                                 | 4.3  | 4.6  | 4                                      | 7    | -0.12                                  | -0.02 | 100                  | 25                                 | 1                  |
| GZF4V7C | W8           | 4.4                                 | 4.7  | 5.0  | 3                                      | 7    | -0.10                                  | 0.00  | 100                  | 10                                 | 1                  |
| GZF5V1C | W9           | 4.8                                 | 5.1  | 5.4  | 3                                      | 6    | -0.08                                  | -0.20 | 100                  | 5                                  | 1                  |
| GZF5V6C | WA           | 5.2                                 | 5.6  | 6.0  | 2                                      | 4    | -0.04                                  | 0.04  | 100                  | 10                                 | 2                  |
| GZF6V2C | WB           | 5.8                                 | 6.2  | 6.6  | 2                                      | 3    | -0.01                                  | 0.06  | 100                  | 5                                  | 2                  |
| GZF6V8C | WC           | 6.4                                 | 6.8  | 7.2  | 1                                      | 3    | 0.00                                   | 0.07  | 100                  | 10                                 | 3                  |
| GZF7V5C | WD           | 7.0                                 | 7.5  | 7.9  | 1                                      | 2    | 0.00                                   | 0.07  | 100                  | 50                                 | 3                  |
| GZF8V2C | WE           | 7.7                                 | 8.2  | 8.7  | 1                                      | 2    | 0.03                                   | 0.08  | 100                  | 10                                 | 3                  |
| GZF9V1C | WF           | 8.5                                 | 9.1  | 9.6  | 2                                      | 4    | 0.03                                   | 0.08  | 50                   | 10                                 | 5                  |
| GZF10C  | WG           | 9.4                                 | 10   | 10.6 | 2                                      | 4    | 0.05                                   | 0.09  | 50                   | 7                                  | 7.5                |
| GZF11C  | WH           | 10.4                                | 11   | 11.6 | 4                                      | 7    | 0.05                                   | 0.10  | 50                   | 4                                  | 8.2                |
| GZF12C  | WI           | 11.4                                | 12   | 12.7 | 4                                      | 7    | 0.05                                   | 0.10  | 50                   | 3                                  | 9.1                |
| GZF13C  | WK           | 12.4                                | 13   | 14.1 | 5                                      | 10   | 0.05                                   | 0.10  | 50                   | 2                                  | 10                 |
| GZF15C  | WL           | 13.8                                | 15   | 15.6 | 5                                      | 10   | 0.05                                   | 0.10  | 50                   | 1                                  | 11                 |
| GZF16C  | WM           | 15.3                                | 16   | 17.1 | 6                                      | 15   | 0.06                                   | 0.11  | 25                   | 1                                  | 12                 |
| GZF18C  | WN           | 16.8                                | 18   | 19.1 | 6                                      | 15   | 0.06                                   | 0.11  | 25                   | 1                                  | 13                 |
| GZF20C  | WO           | 18.8                                | 20   | 21.2 | 6                                      | 15   | 0.06                                   | 0.11  | 25                   | 1                                  | 15                 |
| GZF22C  | WP           | 20.8                                | 22   | 23.3 | 6                                      | 15   | 0.06                                   | 0.11  | 25                   | 1                                  | 16                 |
| GZF24C  | WR           | 22.8                                | 24   | 25.6 | 7                                      | 15   | 0.06                                   | 0.11  | 25                   | 1                                  | 18                 |
| GZF27C  | WS           | 25.1                                | 27   | 28.9 | 7                                      | 15   | 0.06                                   | 0.11  | 25                   | 1                                  | 20                 |
| GZF30C  | WT           | 28                                  | 30   | 32   | 8                                      | 15   | 0.06                                   | 0.11  | 25                   | 1                                  | 22                 |
| GZF33C  | WU           | 31                                  | 33   | 35   | 8                                      | 15   | 0.06                                   | 0.11  | 25                   | 1                                  | 24                 |
| GZF36C  | WW           | 34                                  | 36   | 38   | 21                                     | 40   | 0.06                                   | 0.11  | 10                   | 1                                  | 27                 |
| GZF39C  | WX           | 37                                  | 39   | 41   | 21                                     | 40   | 0.06                                   | 0.11  | 10                   | 1                                  | 30                 |
| GZF43C  | WY           | 40                                  | 43   | 46   | 24                                     | 45   | 0.07                                   | 0.12  | 10                   | 1                                  | 33                 |
| GZF47C  | WZ           | 44                                  | 47   | 50   | 24                                     | 45   | 0.07                                   | 0.12  | 10                   | 1                                  | 36                 |
| GZF51C  | X1           | 48                                  | 51   | 54   | 25                                     | 60   | 0.07                                   | 0.12  | 10                   | 1                                  | 39                 |
| GZF56C  | X2           | 52                                  | 56   | 60   | 25                                     | 60   | 0.07                                   | 0.12  | 10                   | 1                                  | 43                 |
| GZF62C  | X3           | 58                                  | 62   | 66   | 25                                     | 80   | 0.08                                   | 0.13  | 10                   | 1                                  | 47                 |
| GZF68C  | X4           | 64                                  | 68   | 72   | 25                                     | 80   | 0.08                                   | 0.13  | 10                   | 1                                  | 51                 |
| GZF75C  | X5           | 70                                  | 75   | 79   | 30                                     | 100  | 0.08                                   | 0.13  | 10                   | 1                                  | 56                 |
| GZF82C  | X6           | 77                                  | 82   | 87   | 30                                     | 100  | 0.08                                   | 0.13  | 10                   | 1                                  | 62                 |
| GZF91C  | X7           | 85                                  | 91   | 96   | 60                                     | 200  | 0.09                                   | 0.13  | 5                    | 1                                  | 68                 |

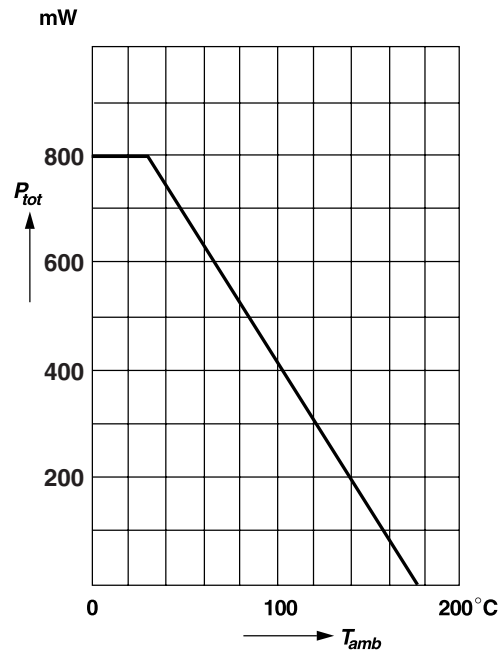
### Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

**Forward characteristics**



**Admissible power dissipation versus ambient temperature**

For conditions, see footnote in table "Absolute Maximum Ratings"



**Capacitance versus Zener voltage**

