

## Small Signal Zener Diodes



### DESIGN SUPPORT TOOLS

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**3D**  
Models  
Available

### FEATURES

- Silicon planar Zener diodes
- Low Zener impedance and low leakage current
- Popular in Asian designs
- Compact surface mount device
- Ideal for automated mounting
- AEC-Q101 qualified available
- ESD capability according to AEC-Q101:  
human body model > 8 kV  
machine model > 800 V
- Base P/N-G3 - green, commercial grade
- Base P/N-HG3 - green, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**  
**GREEN**  
(5-2008)

### PRIMARY CHARACTERISTICS

| PARAMETER                    | VALUE         | UNIT |
|------------------------------|---------------|------|
| V <sub>Z</sub> range nom.    | 2.0 to 36     | V    |
| Test current I <sub>ZT</sub> | 5             | mA   |
| V <sub>Z</sub> specification | Pulse current |      |
| Circuit configuration        | Single        |      |

### ORDERING INFORMATION

| DEVICE NAME  | ORDERING CODE                   | TAPED UNITS PER REEL           | MINIMUM ORDER QUANTITY |
|--------------|---------------------------------|--------------------------------|------------------------|
| GDZ-G-series | GDZ2V0B-G3-08 to GDZ36B-G3-08   | 3000 (8 mm tape on 7" reel)    | 15 000/box             |
|              | GDZ2V0B-G3-18 to GDZ36B-G3-18   | 10 000 (8 mm tape on 13" reel) | 10 000/box             |
|              | GDZ2V0B-HG3-08 to GDZ36B-HG3-08 | 3000 (8 mm tape on 7" reel)    | 15 000/box             |
|              | GDZ2V0B-HG3-18 to GDZ36B-HG3-18 | 10 000 (8 mm tape on 13" reel) | 10 000/box             |

### PACKAGE

| PACKAGE NAME | WEIGHT | MOLDING COMPOUND<br>FLAMMABILITY RATING | MOISTURE SENSITIVITY<br>LEVEL        | SOLDERING CONDITIONS     |
|--------------|--------|-----------------------------------------|--------------------------------------|--------------------------|
| SOD-323      | 4 mg   | UL 94 V-0                               | MSL level 1<br>(according J-STD-020) | 260 °C/10 s at terminals |

### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

| PARAMETER                   | TEST CONDITION | SYMBOL           | VALUE       | UNIT |
|-----------------------------|----------------|------------------|-------------|------|
| Power dissipation           |                | P <sub>tot</sub> | 200         | mW   |
| Junction temperature        |                | T <sub>j</sub>   | 150         | °C   |
| Storage temperature range   |                | T <sub>stg</sub> | -55 to +150 | °C   |
| Operating temperature range |                | T <sub>op</sub>  | -55 to +150 | °C   |

**ELECTRICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

| PART NUMBER | MARKING CODE | ZENER VOLTAGE RANGE |       | TEST CURRENT |           | REVERSE CURRENT |     | DYNAMIC RESISTANCE |                       |
|-------------|--------------|---------------------|-------|--------------|-----------|-----------------|-----|--------------------|-----------------------|
|             |              | $V_Z$ at $I_{ZT1}$  |       | $I_{ZT1}$    | $I_{ZT2}$ | $I_R$ at $V_R$  |     | $Z_Z$ at $I_{ZT1}$ | $Z_{ZK}$ at $I_{ZT2}$ |
|             |              | V                   |       | mA           |           | $\mu\text{A}$   | V   | $\Omega$           |                       |
|             |              | MIN.                | MAX.  |              |           | MAX.            |     | MAX.               | MAX.                  |
| GDZ2V0B-G   | 05           | 2.02                | 2.2   | 5            | 0.5       | 120             | 0.5 | 100                | 1000                  |
| GDZ2V2B-G   | 15           | 2.22                | 2.41  | 5            | 0.5       | 120             | 0.7 | 100                | 1000                  |
| GDZ2V4B-G   | 25           | 2.43                | 2.63  | 5            | 0.5       | 120             | 1   | 100                | 1000                  |
| GDZ2V7B-G   | 35           | 2.69                | 2.91  | 5            | 0.5       | 100             | 1   | 110                | 1000                  |
| GDZ3V0B-G   | 45           | 3.01                | 3.22  | 5            | 0.5       | 50              | 1   | 120                | 1000                  |
| GDZ3V3B-G   | 55           | 3.32                | 3.53  | 5            | 0.5       | 20              | 1   | 120                | 1000                  |
| GDZ3V6B-G   | 65           | 3.6                 | 3.845 | 5            | 1         | 10              | 1   | 100                | 1000                  |
| GDZ3V9B-G   | 75           | 3.89                | 4.16  | 5            | 1         | 5               | 1   | 100                | 1000                  |
| GDZ4V3B-G   | 85           | 4.17                | 4.43  | 5            | 1         | 5               | 1   | 100                | 1000                  |
| GDZ4V7B-G   | 95           | 4.55                | 4.75  | 5            | 0.5       | 2               | 1   | 100                | 800                   |
| GDZ5V1B-G   | U1           | 4.98                | 5.2   | 5            | 0.5       | 2               | 1   | 80                 | 500                   |
| GDZ5V6B-G   | U2           | 5.49                | 5.73  | 5            | 0.5       | 1               | 2.5 | 60                 | 200                   |
| GDZ6V2B-G   | U3           | 6.06                | 6.33  | 5            | 0.5       | 1               | 3   | 60                 | 100                   |
| GDZ6V8B-G   | U4           | 6.65                | 6.93  | 5            | 0.5       | 0.5             | 3.5 | 40                 | 60                    |
| GDZ7V5B-G   | U5           | 7.28                | 7.6   | 5            | 0.5       | 0.5             | 4   | 30                 | 60                    |
| GDZ8V2B-G   | U6           | 8.02                | 8.36  | 5            | 0.5       | 0.5             | 5   | 30                 | 60                    |
| GDZ9V1B-G   | U7           | 8.85                | 9.23  | 5            | 0.5       | 0.5             | 6   | 30                 | 60                    |
| GDZ10B-G    | U8           | 9.77                | 10.21 | 5            | 0.5       | 0.1             | 7   | 30                 | 60                    |
| GDZ11B-G    | U9           | 10.76               | 11.22 | 5            | 0.5       | 0.1             | 8   | 30                 | 60                    |
| GDZ12B-G    | UA           | 11.74               | 12.24 | 5            | 0.5       | 0.1             | 9   | 30                 | 80                    |
| GDZ13B-G    | UB           | 12.91               | 13.49 | 5            | 0.5       | 0.1             | 10  | 37                 | 80                    |
| GDZ15B-G    | UC           | 14.34               | 14.98 | 5            | 0.5       | 0.1             | 11  | 42                 | 80                    |
| GDZ16B-G    | UD           | 15.85               | 16.51 | 5            | 0.5       | 0.1             | 12  | 50                 | 80                    |
| GDZ18B-G    | UE           | 17.56               | 18.35 | 5            | 0.5       | 0.1             | 13  | 65                 | 80                    |
| GDZ20B-G    | UH           | 19.52               | 20.39 | 5            | 0.5       | 0.1             | 15  | 85                 | 100                   |
| GDZ22B-G    | UK           | 21.54               | 22.47 | 5            | 0.5       | 0.1             | 17  | 100                | 100                   |
| GDZ24B-G    | UL           | 23.72               | 24.78 | 5            | 0.5       | 0.1             | 19  | 120                | 120                   |
| GDZ27B-G    | UM           | 26.19               | 27.53 | 5            | 0.5       | 0.1             | 21  | 150                | 150                   |
| GDZ30B-G    | UN           | 29.19               | 30.69 | 5            | 0.5       | 0.1             | 23  | 200                | 200                   |
| GDZ33B-G    | UP           | 32.15               | 33.79 | 5            | 0.5       | 0.1             | 25  | 250                | 250                   |
| GDZ36B-G    | UT           | 35.07               | 36.87 | 5            | 0.5       | 0.1             | 27  | 300                | 300                   |

**Notes**

- The Zener voltage  $V_Z$  is measured 40 ms after power is supplied
- The operating resistance ( $Z_Z$ ,  $Z_{ZK}$ ) are measured by superimposing a 1 kHz alternating current on the regulated current ( $I_Z$ ).

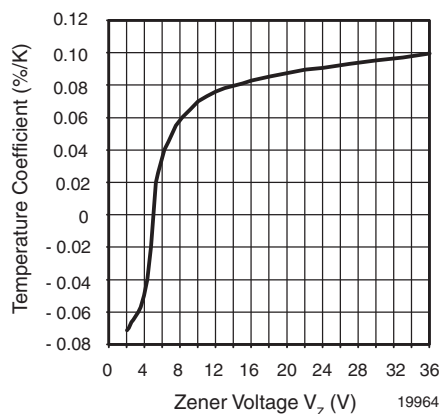
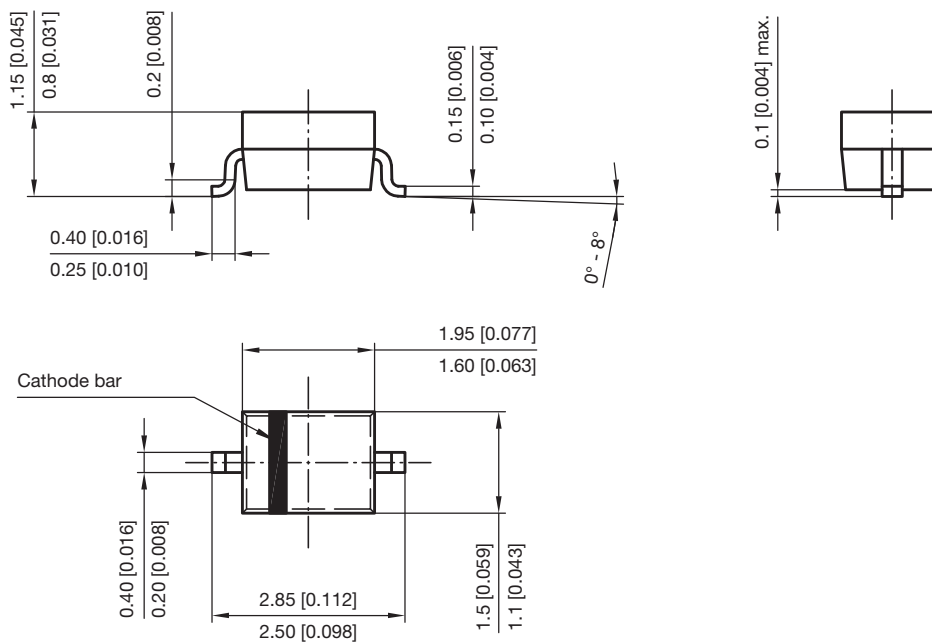
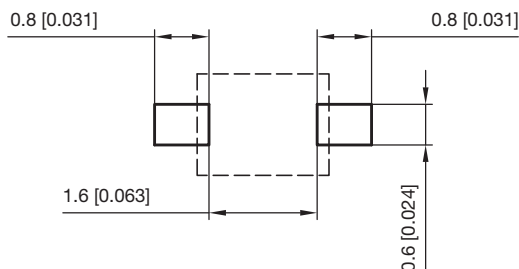
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Zener Voltage Temperature Coefficient vs. Zener Voltage

**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-323**


Footprint recommendation:





## Disclaimer

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