

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


RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

PRIMARY CHARACTERISTICS

| PARAMETER | VALUE | UNIT |
|------------------------------|---------------|------|
| V _Z range nom. | 2.0 to 36 | V |
| Test current I _{ZT} | 5 | mA |
| V _Z 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 FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL | SOLDERING CONDITIONS |
|--------------|--------|---|--------------------------------------|--------------------------|
| SOD-323 | 4 mg | UL 94 V-0 | MSL level 1 (according J-STD-020) | 260 °C/10 s at terminals |

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|-----------------------------|----------------|------------------|-------------|------|
| Power dissipation | | P _{tot} | 200 | mW |
| Junction temperature | | T _j | 150 | °C |
| Storage temperature range | | T _{stg} | -55 to +150 | °C |
| Operating temperature range | | T _{op} | -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 | | μA | V | Ω | |
| | | 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)

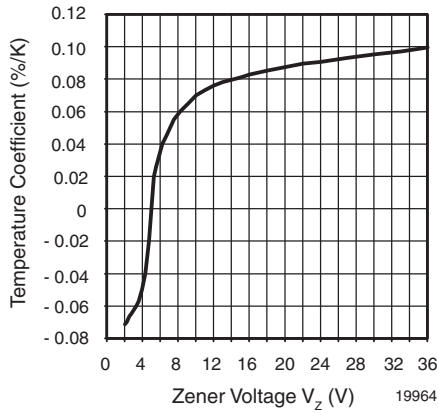
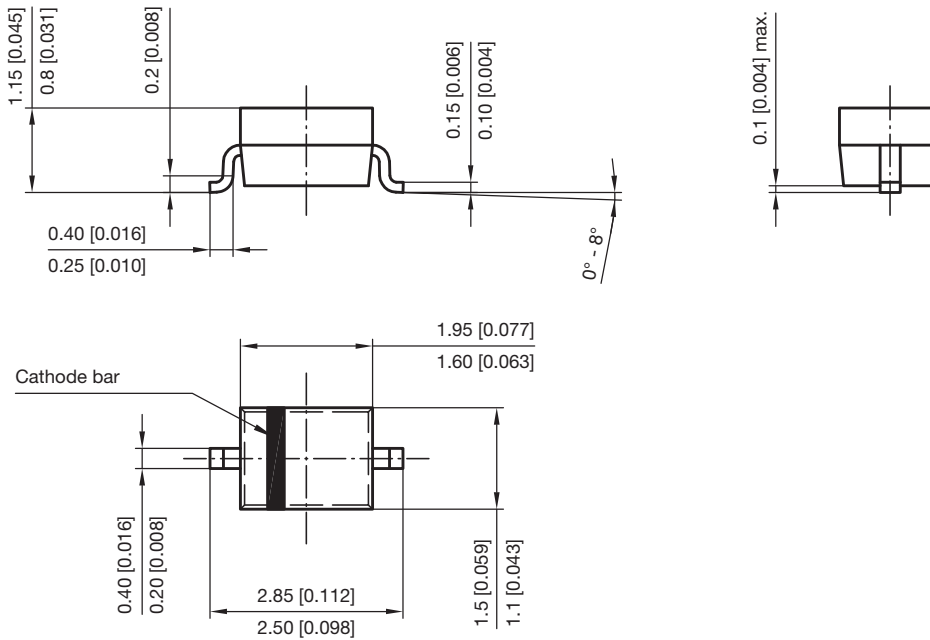
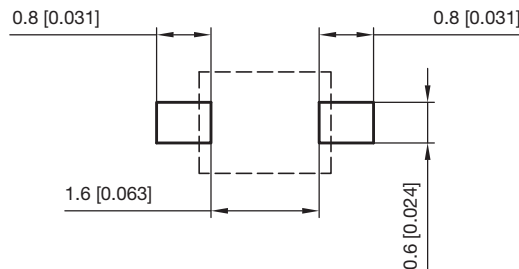


Fig. 1 - Zener Voltage Temperature Coefficient vs. Zener Voltage

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



Footprint recommendation:



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 17443



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