



UDZ5V6B-UDZ15B

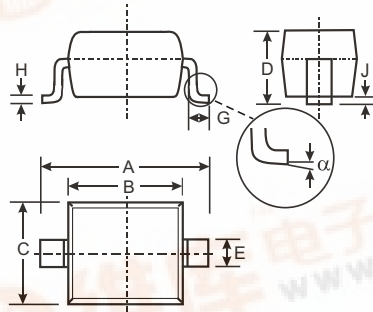
SURFACE MOUNT PRECISION ZENER DIODE

Features

- Ultra-Small Surface Mount Package
- Ideally suited for Automated Assembly Processes
- Very Sharp Breakdown Characteristics
- Very Tight Tolerance on Zener Breakdown Voltage
- Lead Free By Design/RoHS Compliant (Note 4)

Mechanical Data

- Case: SOD-323
- Case Material: UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: Cathode Band
- Terminals: Finish - Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking & Type Code Information: See Electrical Specifications Table
- Ordering Information: See Last Page
- Weight: 0.004 grams (approximate)



| SOD-323 | | |
|----------------------|--------------|------|
| Dim | Min | Max |
| A | 2.30 | 2.70 |
| B | 1.60 | 1.80 |
| C | 1.20 | 1.40 |
| D | 1.05 Typical | |
| E | 0.25 | 0.35 |
| G | 0.20 | 0.40 |
| H | 0.10 | 0.15 |
| J | 0.05 Typical | |
| | 0 | 8 |
| All Dimensions in mm | | |

Maximum Ratings @ T_A = 25 C unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Operating and Storage Temperature Range | T _j , T _{STG} | -65 to +150 | C |

Thermal Characteristics @ T_A = 25 C unless otherwise specified

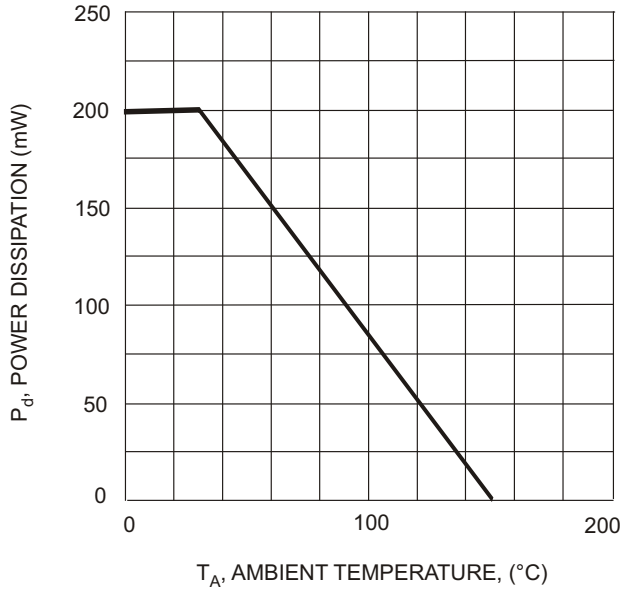
| Characteristic | Symbol | Value | Unit |
|---|-----------------|-------|------|
| Thermal Resistance Junction to Ambient Air (Note 1) | R _{JA} | 625 | C/W |
| Power Dissipation (Note 1) | P _d | 200 | mW |

Electrical Characteristics @ T_A = 25 C unless otherwise specified

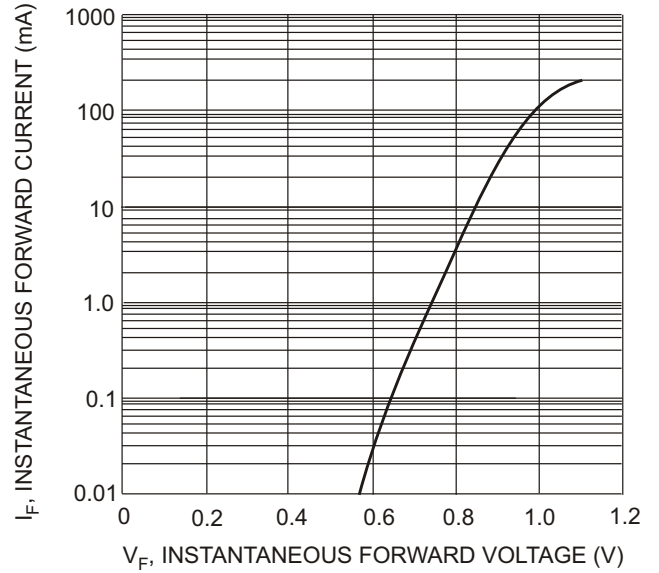
| Type Number | Marking Code | Zener Voltage Range (Note 2) | | | Maximum Zener Impedance (Note 3) | | | Maximum Reverse Current (Note 2) | |
|-------------|--------------|-----------------------------------|---------|-----------------|-----------------------------------|-----------------------------------|-----------------|----------------------------------|----------------|
| | | V _{ZT} @ I _{ZT} | | I _{ZT} | Z _{ZT} @ I _{ZT} | Z _{ZK} @ I _{ZK} | I _{ZK} | I _R | V _R |
| | | Min (V) | Max (V) | mA | | | mA | uA | V |
| UDZ5V6B | BC | 5.490 | 5.730 | 5 | 60 | 200 | 0.5 | 1 | 2.5 |
| UDZ6V2B | BD | 6.060 | 6.330 | 5 | 60 | 100 | 0.5 | 1 | 3.0 |
| UDZ6V8B | BE | 6.650 | 6.930 | 5 | 40 | 60 | 0.5 | 0.5 | 3.5 |
| UDZ7V5B | BF | 7.280 | 7.600 | 5 | 30 | 60 | 0.5 | 0.5 | 4.0 |
| UDZ8V2B | BG | 8.020 | 8.360 | 5 | 30 | 60 | 0.5 | 0.5 | 5.0 |
| UDZ9V1B | BH | 8.850 | 9.230 | 5 | 30 | 60 | 0.5 | 0.5 | 6.0 |
| UDZ10B | BI | 9.770 | 10.210 | 5 | 30 | 60 | 0.5 | 0.1 | 7.0 |
| UDZ11B | BJ | 10.760 | 11.220 | 5 | 30 | 60 | 0.5 | 0.1 | 8.0 |
| UDZ12B | BK | 11.740 | 12.240 | 5 | 30 | 80 | 0.5 | 0.1 | 9.0 |
| UDZ13B | BL | 12.910 | 13.490 | 5 | 37 | 80 | 0.5 | 0.1 | 10.0 |
| UDZ15B | BM | 14.340 | 14.980 | 5 | 42 | 80 | 0.5 | 0.1 | 11.0 |

- Notes:
- Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.
 - Short duration test pulse used to minimize self-heating effect.
 - The zener impedances (Z_{ZT}, Z_{ZK}) are measured by superimposing a minute alternating current on the regulated current (I_Z).
 - None of the above values are guaranteed over the full operating temperature range.

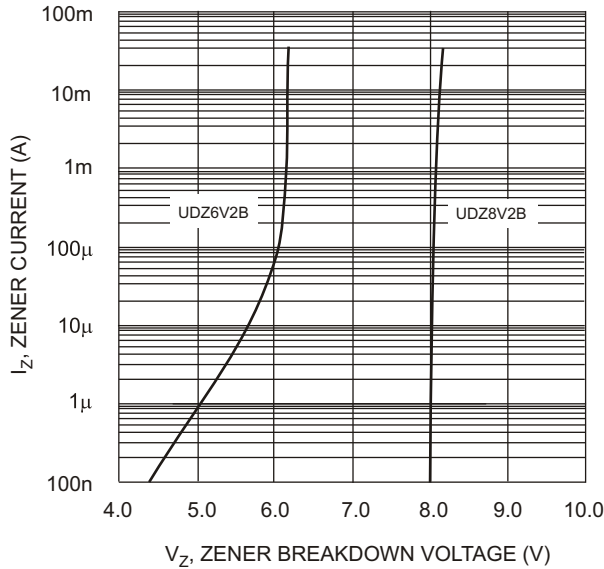




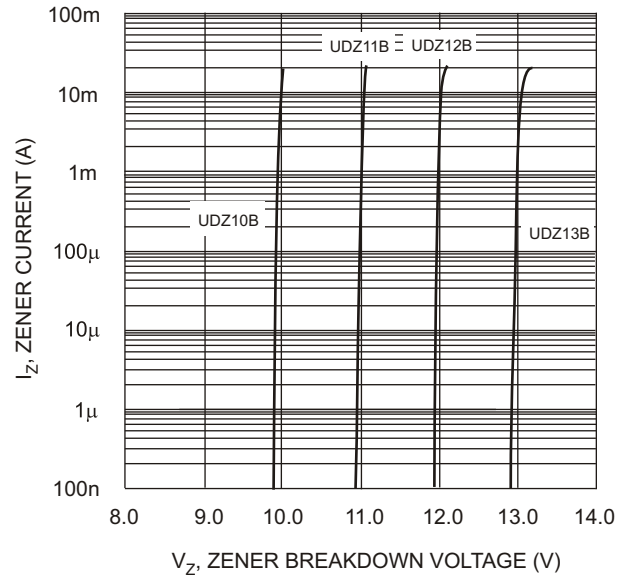
T_A , AMBIENT TEMPERATURE, (°C)
Fig. 1 Power Derating Curve



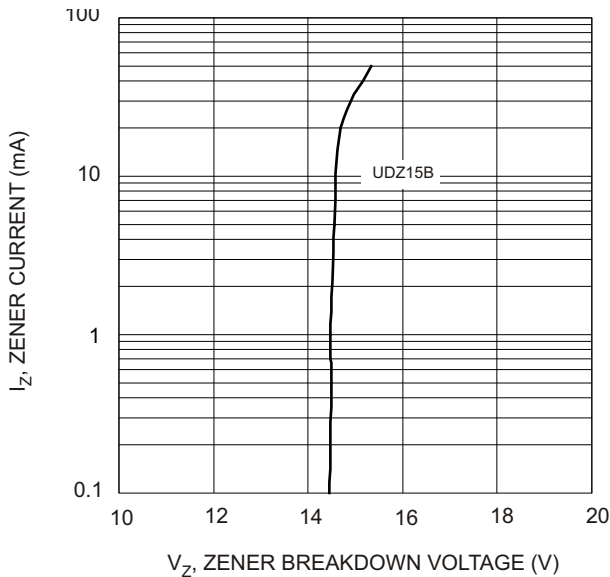
V_F , INSTANTANEOUS FORWARD VOLTAGE (V)
Fig. 2 Typical Forward Characteristics



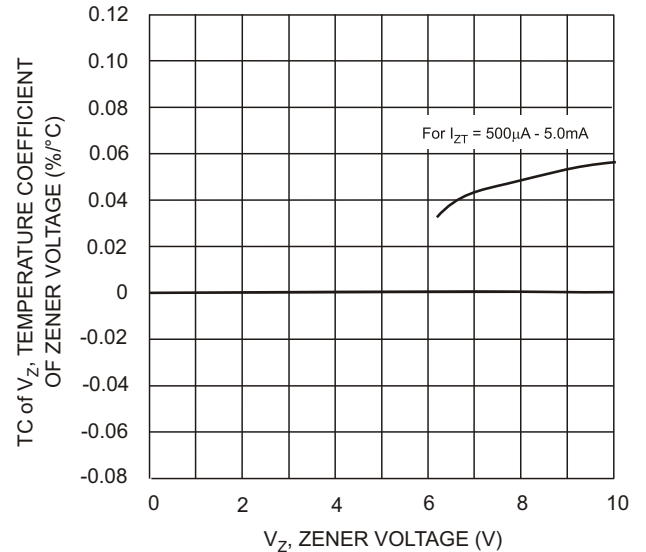
V_Z , ZENER BREAKDOWN VOLTAGE (V)
Fig. 3 Typical Reverse Characteristics, UDZ6V2B - UDZ8V2B



V_Z , ZENER BREAKDOWN VOLTAGE (V)
Fig. 4 Typical Reverse Characteristics, UDZ10B - UDZ13B



V_Z , ZENER BREAKDOWN VOLTAGE (V)
Fig. 5 Typical Reverse Characteristics, UDZ15B



For $I_{ZT} = 500\mu A - 5.0mA$
Fig. 6 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, UDZ6V2B-UDZ10B

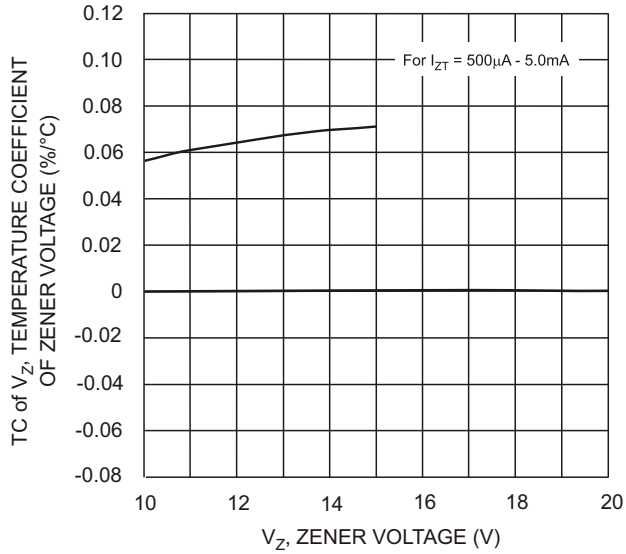


Fig. 7 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, UDZ10B-UDZ15B

Ordering Information (Note 5)

| Device | Packaging | Shipping |
|------------------|-----------|------------------|
| (Type Number)-7* | SOD-323 | 3000/Tape & Reel |

* Add "-7" to the appropriate type number in Table 1 from Page 1 example: 6.2V Zener = UDZ6V2B-7.

Notes: 5. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



XX = Product Type Marking Code

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