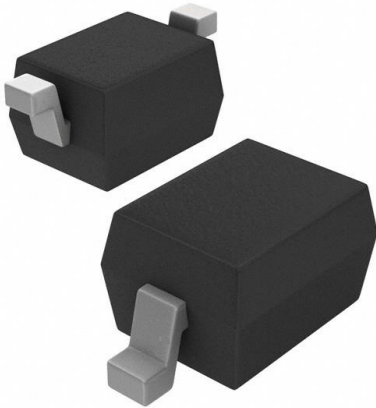


# UDZ9V1BQ-13 Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



<https://www.DiGi-Electronics.com>

|                              |                                     |
|------------------------------|-------------------------------------|
| DiGi Electronics Part Number | UDZ9V1BQ-13-DG                      |
| Manufacturer                 | <a href="#">Diodes Incorporated</a> |
| Manufacturer Product Number  | UDZ9V1BQ-13                         |
| Description                  | DIODE ZENER SOD323                  |
| Detailed Description         | Zener Diode                         |

This model UDZ9V1BQ-13 is available at DiGi Electronics.

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## Purchase and inquiry

Manufacturer Product Number:

UDZ9V1BQ-13

Series:

-

Tolerance:

-

Base Product Number:

UDZ9V1

Manufacturer:

Diodes Incorporated

Product Status:

Active

Operating Temperature:

-

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0050

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99



UDZ9V1BQ

SURFACE MOUNT PRECISION ZENER DIODE

## Features

- Small, Surface Mount Package
- Ideally Suited for Automated Assembly Processes
- Very Sharp Breakdown Characteristics
- Very Tight Tolerance on Zener Breakdown Voltage
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The UDZ9V1BQ is suitable for automotive applications requiring specific change control and is AEC-Q101 qualified, is PPAP capable, and is manufactured in IATF16949:2016 certified facilities.**

## Mechanical Data

- Case: SOD323
- Case Material: UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Band
- Terminals: Finish – Matte Tin Annealed over Alloy 42
- Leadframe: Solderable per MIL-STD-202, Method 208 **(E3)**
- Weight: 0.004 grams (Approximate)



Top View

## Ordering Information (Note 4)

| Part Number | Compliance | Case   | Shipping           |
|-------------|------------|--------|--------------------|
| UDZ9V1BQ-7  | Automotive | SOD323 | 3,000/Tape & Reel  |
| UDZ9V1BQ-13 | Automotive | SOD323 | 10,000/Tape & Reel |

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information



XX = Product Type Marking Code  
(See Electrical Characteristics Table)



UDZ9V1BQ

## Thermal Characteristics

| Characteristic                                      | Symbol          | Value       | Unit          |
|---|-----------------|-------------|---------------|
| Power Dissipation (Note 5)                          | $P_D$           | 200         | mW            |
| Thermal Resistance Junction to Ambient Air (Note 5) | $R_{\theta JA}$ | 625         | $^{\circ}C/W$ |
| Operating and Storage Temperature Range             | $T_J, T_{STG}$  | -65 to +150 | $^{\circ}C$   |

## Electrical Characteristics (@ $T_A = +25^{\circ}C$ , unless otherwise specified.)

| Type Number | Marking Code | Zener Voltage Range (Note 6) |         |          | Maximum Zener Impedance (Note 7) |                   |          | Maximum Reverse Current (Note 6) |       |
|-------------|--------------|------------------------------|---------|----------|----------------------------------|-------------------|----------|----------------------------------|-------|
|             |              | $V_{ZT} @ I_{ZT}$            |         | $I_{ZT}$ | $Z_{ZT} @ I_{ZT}$                | $Z_{ZK} @ I_{ZK}$ | $I_{ZK}$ | $I_R$                            | $V_R$ |
|             |              | Min (V)                      | Max (V) | mA       | $\Omega$                         | mA                | $\mu A$  | V                                |       |
| UDZ9V1BQ    | BH           | 8.850                        | 9.230   | 5        | 30                               | 60                | 0.5      | 0.5                              | 6.0   |

- Notes:
- Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/package-outlines.html>.
  - Short duration pulse test 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 ( $I_Z$ ).

NEW PRODUCT



UDZ9V1BQ

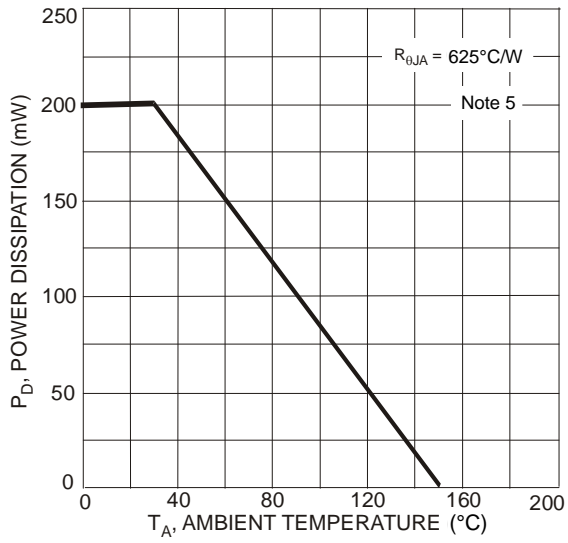


Fig. 1 Power Derating Curve

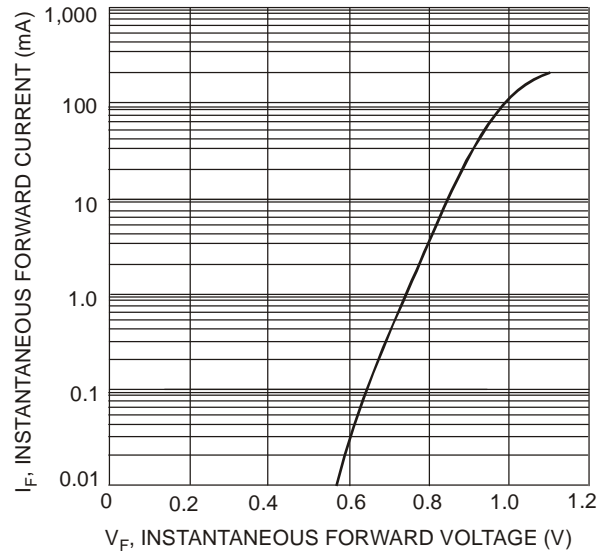


Fig. 2 Typical Forward Characteristics

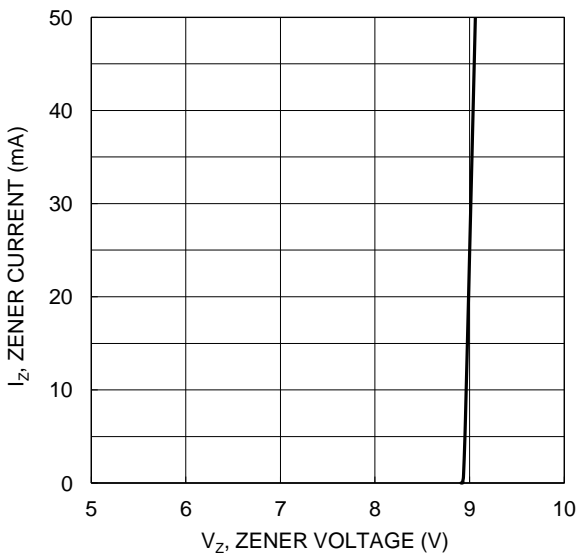


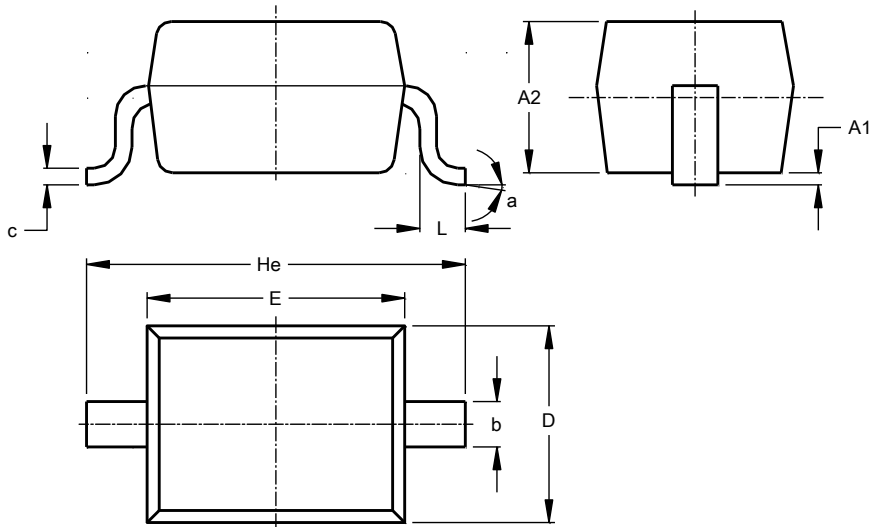
Fig. 3 Typical Zener Breakdown Characteristics

NEW PRODUCT

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD323

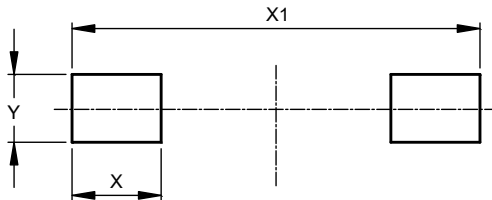


| SOD323               |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A1                   | --   | 0.10 | 0.05 |
| A2                   | 1.00 | 1.10 | 1.05 |
| b                    | 0.25 | 0.35 | 0.30 |
| c                    | 0.10 | 0.15 | 0.11 |
| D                    | 1.20 | 1.40 | 1.30 |
| E                    | 1.60 | 1.80 | 1.70 |
| He                   | 2.30 | 2.70 | 2.50 |
| L                    | 0.20 | 0.40 | 0.30 |
| a                    | 0°   | 8°   | --   |
| All Dimensions in mm |      |      |      |

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

SOD323



| Dimensions | Value (in mm) |
|------------|---------------|
| X          | 0.590         |
| X1         | 2.700         |
| Y          | 0.450         |



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