

## 200mW, 2% Tolerance Zener Diodes

### FEATURES

- Wide zener voltage range selection: 3.6V to 36V
- $V_Z$  tolerance selection of  $\pm 2\%$
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

### APPLICATIONS

- Constant voltage control

### MECHANICAL DATA

- Case: SOD-323F
- Molding compound meets UL 94 V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Polarity: Indicated by cathode band
- Weight: 4.594 mg (approximately)

| KEY PARAMETERS |            |      |
|----------------|------------|------|
| PARAMETER      | VALUE      | UNIT |
| $V_Z$          | 3.6-36     | V    |
| $P_D$          | 200        | mW   |
| $T_J$ Max.     | 150        | °C   |
| Package        | SOD-323F   |      |
| Configuration  | Single die |      |



| ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted) |           |             |      |
|-----------------------------------------------------------------------------|-----------|-------------|------|
| PARAMETER                                                                   | SYMBOL    | VALUE       | UNIT |
| Power dissipation                                                           | $P_D$     | 200         | mW   |
| Junction temperature range                                                  | $T_J$     | -55 to +150 | °C   |
| Storage temperature range                                                   | $T_{STG}$ | -55 to +150 | °C   |

**ELECTRICAL SPECIFICATIONS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

| PART<br>NUMBER | MARKING<br>CODE | ZENER VOLTAGE  |       |       | TEST<br>CURRENT | REGULAR IMPEDANCE |                   | TEST<br>CURRENT | LEAKAGE<br>CURRENT |    |
|----------------|-----------------|----------------|-------|-------|-----------------|-------------------|-------------------|-----------------|--------------------|----|
|                |                 | $V_Z @ I_{ZT}$ |       |       | $I_{ZT}$        | $Z_{ZT} @ I_{ZT}$ | $Z_{ZK} @ I_{ZK}$ | $I_{ZK}$        | $I_R @ V_R$        |    |
|                |                 | V              |       |       | mA              | $\Omega$          | $\Omega$          | mA              | $\mu\text{A}$      | V  |
|                |                 | Min.           | Nom.  | Max.  |                 | Max.              | Max.              |                 | Max.               |    |
| UDZS3V6B       | D0              | 3.60           | 3.60  | 3.85  | 5               | 90                | 600               | 1.0             | 4.50               | 1  |
| UDZS3V9B       | D1              | 3.89           | 3.90  | 4.16  | 5               | 90                | 600               | 1.0             | 2.70               | 1  |
| UDZS4V3B       | D2              | 4.17           | 4.30  | 4.43  | 5               | 90                | 600               | 1.0             | 2.70               | 1  |
| UDZS4V7B       | D3              | 4.55           | 4.70  | 4.75  | 5               | 80                | 500               | 1.0             | 2.70               | 1  |
| UDZS5V1B       | D4              | 4.98           | 5.10  | 5.20  | 5               | 60                | 500               | 1.0             | 1.80               | 2  |
| UDZS5V6B       | D5              | 5.49           | 5.60  | 5.73  | 5               | 40                | 300               | 1.0             | 0.90               | 3  |
| UDZS6V2B       | D6              | 6.06           | 6.20  | 6.33  | 5               | 40                | 150               | 1.0             | 2.70               | 3  |
| UDZS6V8B       | D7              | 6.65           | 6.80  | 6.93  | 5               | 30                | 75                | 1.0             | 1.80               | 4  |
| UDZS7V5B       | D8              | 7.28           | 7.50  | 7.60  | 5               | 30                | 75                | 1.0             | 0.90               | 4  |
| UDZS8V2B       | D9              | 8.02           | 8.20  | 8.36  | 5               | 30                | 75                | 1.0             | 0.63               | 5  |
| UDZS9V1B       | DA              | 8.85           | 9.10  | 9.23  | 5               | 30                | 90                | 1.0             | 0.45               | 6  |
| UDZS10B        | DB              | 9.77           | 10.00 | 10.21 | 5               | 20                | 150               | 1.0             | 0.18               | 7  |
| UDZS11B        | DC              | 10.76          | 11.00 | 11.22 | 5               | 20                | 150               | 1.0             | 0.09               | 8  |
| UDZS12B        | DE              | 11.74          | 12.00 | 12.24 | 5               | 20                | 150               | 1.0             | 0.09               | 9  |
| UDZS13B        | DF              | 12.91          | 13.00 | 13.49 | 5               | 40                | 160               | 1.0             | 0.045              | 10 |
| UDZS15B        | DG              | 14.34          | 15.00 | 14.98 | 5               | 40                | 190               | 1.0             | 0.045              | 11 |
| UDZS16B        | DH              | 15.85          | 16.00 | 16.51 | 5               | 40                | 190               | 1.0             | 0.045              | 12 |
| UDZS18B        | DJ              | 17.56          | 18.00 | 18.35 | 5               | 50                | 220               | 1.0             | 0.045              | 13 |
| UDZS20B        | DK              | 19.52          | 20.00 | 20.39 | 5               | 60                | 220               | 1.0             | 0.045              | 15 |
| UDZS22B        | DL              | 21.54          | 22.00 | 22.47 | 5               | 80                | 240               | 1.0             | 0.045              | 17 |
| UDZS24B        | DM              | 23.72          | 24.00 | 24.78 | 5               | 80                | 240               | 1.0             | 0.045              | 19 |
| UDZS27B        | DN              | 26.19          | 27.00 | 27.53 | 5               | 100               | 300               | 0.5             | 0.045              | 21 |
| UDZS30B        | DP              | 29.19          | 30.00 | 30.69 | 5               | 100               | 300               | 0.5             | 0.045              | 23 |
| UDZS33B        | DR              | 32.15          | 33.00 | 33.79 | 5               | 100               | 310               | 0.5             | 0.045              | 25 |
| UDZS36B        | DS              | 35.07          | 36.00 | 36.87 | 5               | 100               | 330               | 0.5             | 0.045              | 27 |

**Notes:**

1. The zener voltage ( $V_Z$ ) is tested under pulse condition of 30ms
2. For detailed information on price, availability and delivery of nominal zener voltages between the voltages shown and tighter voltage tolerances
3. The zener impedance is derived from the 60-cycle ac voltage, which results when an ac current having an ms value equal to 10% of the DC zener current ( $I_{ZT}$  or  $I_{ZK}$ ) is superimposed to  $I_{ZT}$  or  $I_{ZK}$

**ORDERING INFORMATION**

| <b>PART NO.</b><br>(Note 1) | <b>PACKAGE</b> | <b>PACKING</b> |
|-----------------------------|----------------|----------------|
| UDZSxxxB RRG                | SOD-323F       | 3K / 7" Reel   |
| UDZSxxxB RR                 | SOD-323F       | 3K / 7" Reel   |
| UDZSxxxB R9G                | SOD-323F       | 10K / 13" Reel |
| UDZSxxxB R9                 | SOD-323F       | 10K / 13" Reel |

**Note:**

- "xxx" defines voltage from 3.6V (UDZS3V6B) to 36V (UDZS36B)

## CHARACTERISTICS CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**Fig.1 VZ - IZ Characteristics**

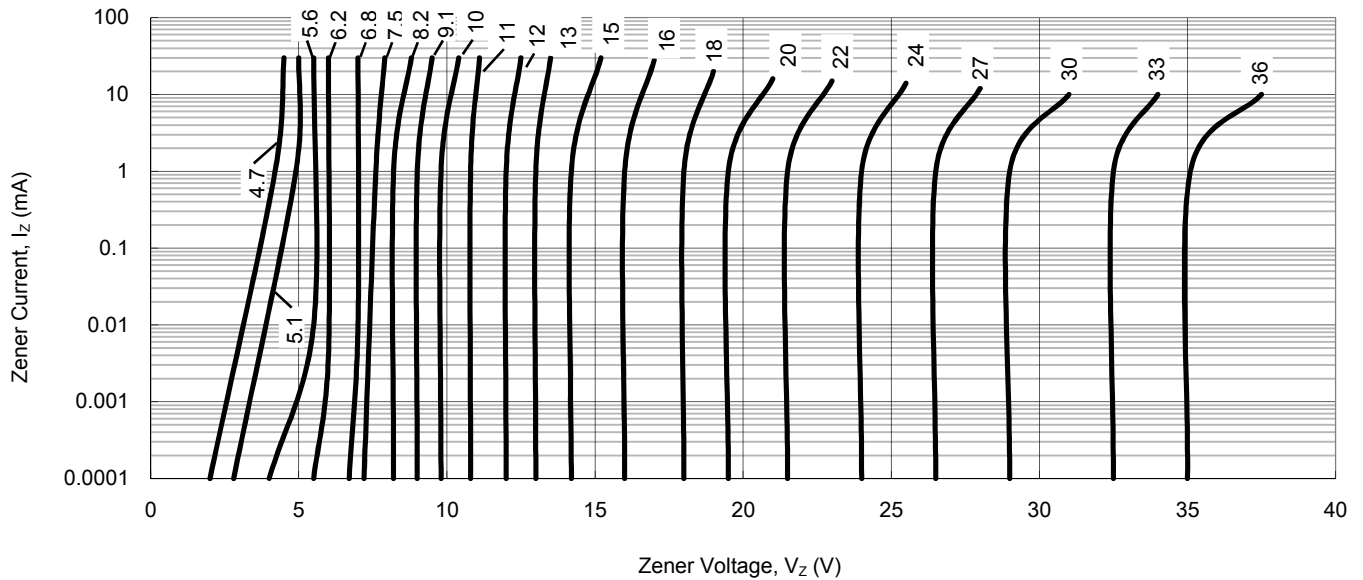


**Fig.2 Derating Curve**

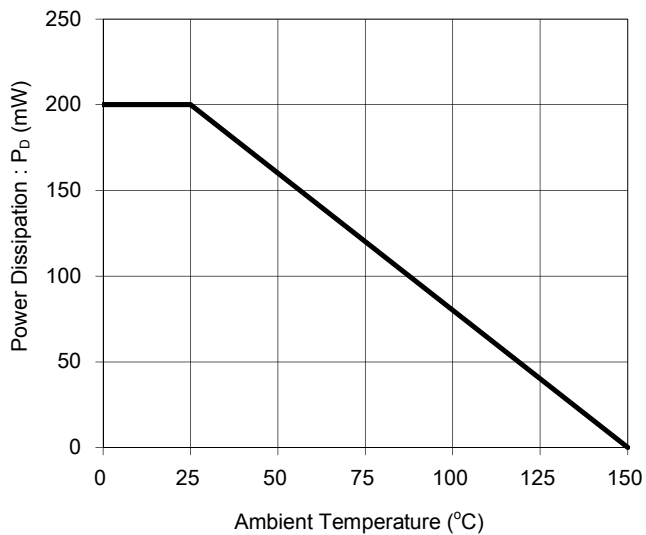
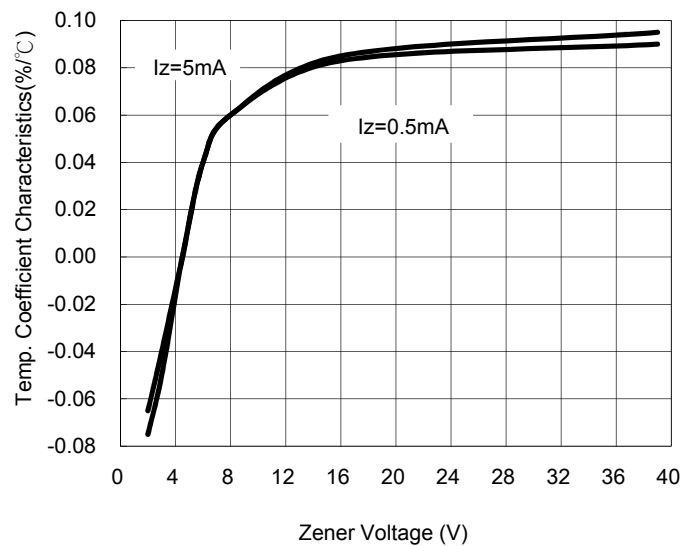
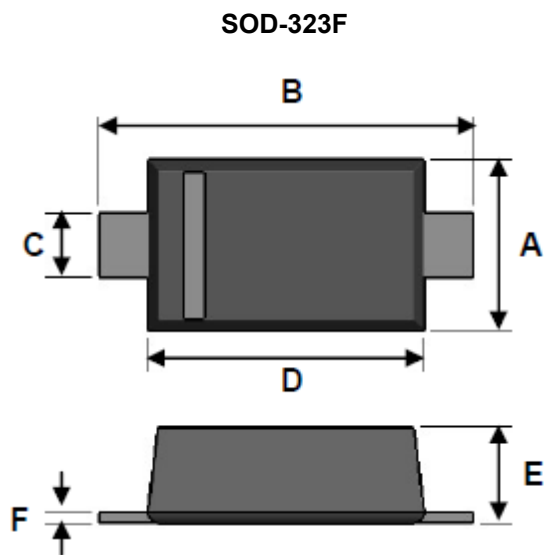


**Fig.3 Zener Voltage-Temp. Coefficient Characteristics**

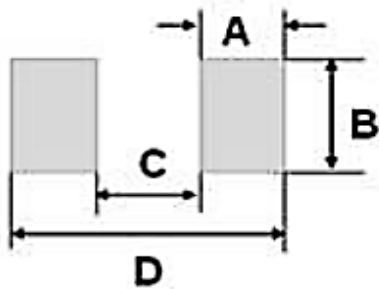


## PACKAGE OUTLINE DIMENSION



| DIM. | Unit (mm) |      | Unit (inch) |       |
|------|-----------|------|-------------|-------|
|      | Min       | Max  | Min         | Max   |
| A    | 1.15      | 1.35 | 0.045       | 0.053 |
| B    | 2.30      | 2.80 | 0.091       | 0.110 |
| C    | 0.25      | 0.40 | 0.010       | 0.016 |
| D    | 1.60      | 1.80 | 0.063       | 0.071 |
| E    | 0.80      | 1.10 | 0.031       | 0.043 |
| F    | 0.05      | 0.25 | 0.002       | 0.010 |

## SUGGEST PAD LAYOUT



| DIM. | Unit (mm) | Unit (inch) |
|------|-----------|-------------|
|      | Typ.      | Typ.        |
| A    | 0.63      | 0.025       |
| B    | 0.83      | 0.033       |
| C    | 1.60      | 0.063       |
| D    | 2.86      | 0.113       |

## Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9