

Features

- Very Sharp Breakdown Characteristics
- Very Tight Tolerance on V_z
- Ideally Suited for Automated Assembly Processes
- Very Low Leakage Current
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

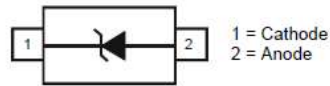
Mechanical Data

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

SOD323



Top View



Device Schematic

Ordering Information (Note 4)

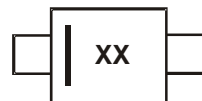
| Part Number | Compliance | Case | Packaging |
|------------------|------------|--------|-------------------|
| (Type Number)-7* | Commercial | SOD323 | 3,000/Tape & Reel |

* Example: The part number for the 6.2 Volt device would be DDZ6V2BS-7.

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
 2. See http://www.diodes.com/quality/lead_free.html 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 <http://www.diodes.com/products/packages.html>.

Marking Information

SOD323



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

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Value | Unit |
|---|----------------|-------|------|
| Forward Voltage @ I _F = 10mA | V _F | 0.9 | V |

Thermal Characteristics

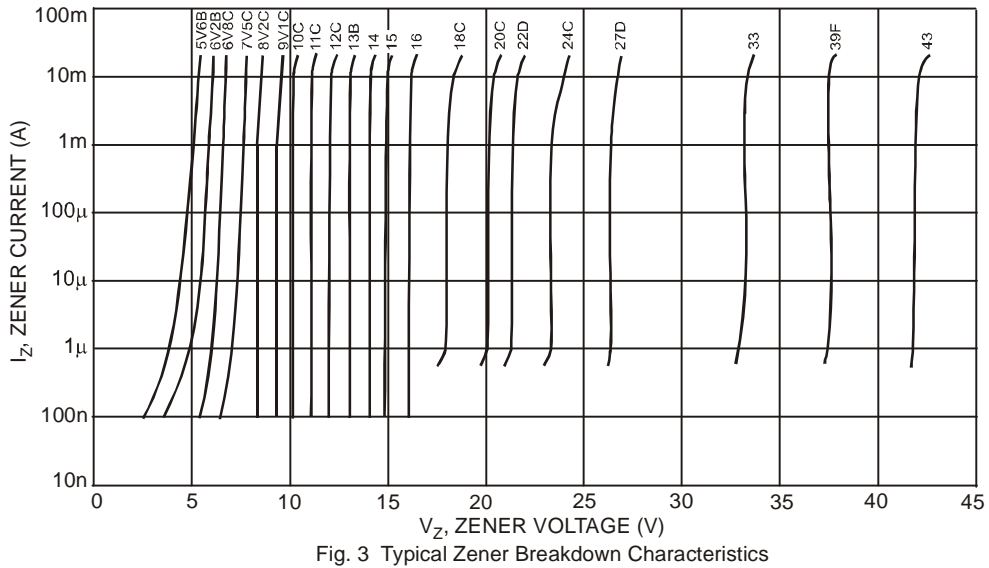
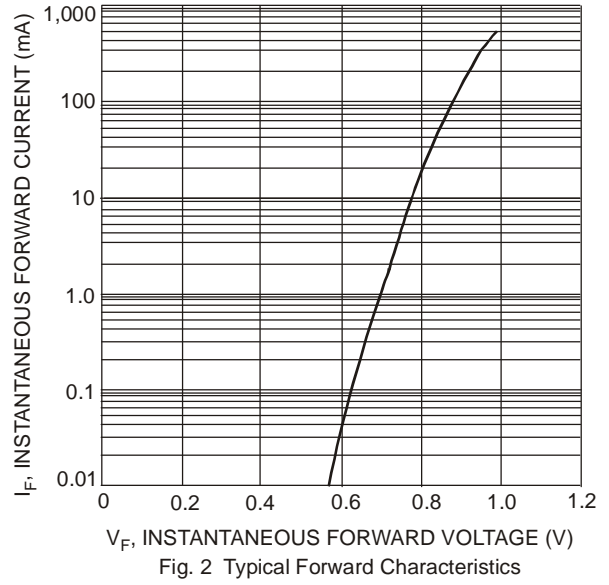
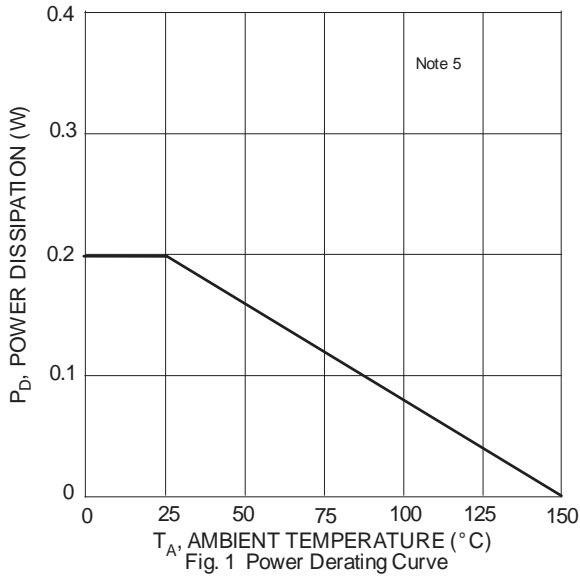
| Characteristic | Symbol | Value | Unit |
|--|-----------------------------------|-------------|------|
| Power Dissipation (Note 5) | P _D | 200 | mW |
| Thermal Resistance, Junction to Ambient Air (Note 5) | R _{θJA} | 625 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -65 to +150 | °C |

Note: 5. Device 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>.

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Type Number | Marking Code | Zener Voltage Range (Note 6) | | | Maximum Zener Impedance (Note 7) | | | Maximum Reverse Current (Note 8) | |
|-------------|--------------|----------------------------------|---------|-----------------|-----------------------------------|-----------------------------------|-----------------|----------------------------------|------------------|
| | | V _Z @ I _{ZT} | | I _{ZT} | Z _{ZT} @ I _{ZT} | Z _{ZK} @ I _{ZK} | I _{ZK} | I _R | @ V _R |
| | | Min (V) | Max (V) | mA | Ω | mA | μA | V | |
| DDZ5V1BS | KM | 4.94 | 5.20 | 20 | 17 | 480 | 1 | 5 | 1.5 |
| DDZ5V6BS | KN | 5.45 | 5.73 | 20 | 11 | 400 | 1 | 0.5 | 2.5 |
| DDZ6V2BS | KO | 5.96 | 6.27 | 20 | 7 | 150 | 1 | 0.5 | 4.0 |
| DDZ6V8CS | YP | 6.66 | 7.01 | 20 | 5 | 150 | 0.5 | 0.5 | 5.0 |
| DDZ7V5CS | YQ | 7.29 | 7.67 | 20 | 6 | 120 | 0.5 | 0.5 | 6.0 |
| DDZ8V2CS | YR | 8.03 | 8.45 | 20 | 8 | 120 | 0.5 | 0.5 | 6.5 |
| DDZ9V1CS | YS | 8.83 | 9.30 | 20 | 8 | 120 | 0.5 | 0.5 | 7.0 |
| DDZ10CS | YT | 9.70 | 10.20 | 20 | 8 | 120 | 0.5 | 0.1 | 8.0 |
| DDZ11CS | YU | 10.82 | 11.38 | 10 | 10 | 120 | 0.5 | 0.1 | 8.4 |
| DDZ12CS | YV | 11.74 | 12.35 | 10 | 12 | 110 | 0.5 | 0.1 | 9.1 |
| DDZ13BS | KW | 12.55 | 13.21 | 10 | 14 | 110 | 0.5 | 0.1 | 10.0 |
| DDZ14S | GX | 13.65 | 14.35 | 10 | 16 | 110 | 0.5 | 0.05 | 11.0 |
| DDZ15S | GY | 14.80 | 15.57 | 10 | 18 | 150 | 0.5 | 0.05 | 12.0 |
| DDZ16S | YY | 15.69 | 16.51 | 10 | 18 | 150 | 0.5 | 0.05 | 12.0 |
| DDZ18CS | YZ | 17.42 | 18.33 | 10 | 23 | 150 | 0.5 | 0.05 | 14.0 |
| DDZ20CS | PJ | 19.23 | 20.22 | 10 | 28 | 200 | 0.5 | 0.05 | 15.0 |
| DDZ22DS | 2K | 21.52 | 22.63 | 5 | 30 | 200 | 0.5 | 0.05 | 17.0 |
| DDZ24CS | PL | 23.12 | 24.31 | 5 | 35 | 200 | 0.5 | 0.05 | 19.0 |
| DDZ27DS | 2M | 26.29 | 27.64 | 5 | 45 | 250 | 0.5 | 0.05 | 21.0 |
| DDZ30DS | 2N | 29.02 | 30.51 | 5 | 55 | 250 | 0.5 | 0.05 | 23.0 |
| DDZ33S | RP | 32.14 | 33.79 | 5 | 75 | 250 | 0.5 | 0.05 | 27.0 |
| DDZ36S | ZQ | 35.36 | 37.19 | 5 | 85 | 250 | 0.5 | 0.05 | 30.0 |
| DDZ39FS | 5Q | 38.02 | 39.98 | 5 | 85 | 250 | 0.5 | 0.05 | 30.0 |
| DDZ43S | ZR | 42.14 | 43.86 | 5 | 90 | — | — | 0.05 | 33.0 |
| DDZ47S | ZS | 46.06 | 47.94 | 5 | 90 | — | — | 0.05 | 36.0 |

Notes: 6. The Zener voltage is measured <40ms after power is supplied.
7. f = 1kHz.
8. Short duration pulse test used to minimize self-heating effect.



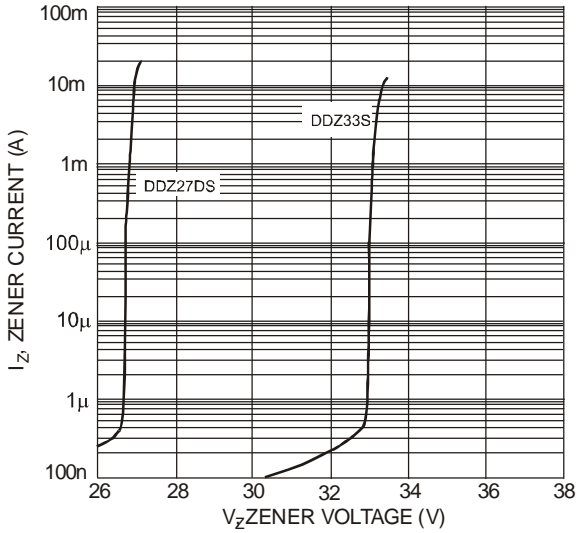


Fig. 4 Typical Zener Breakdown Characteristics, DDZ27DS - DDZ33S

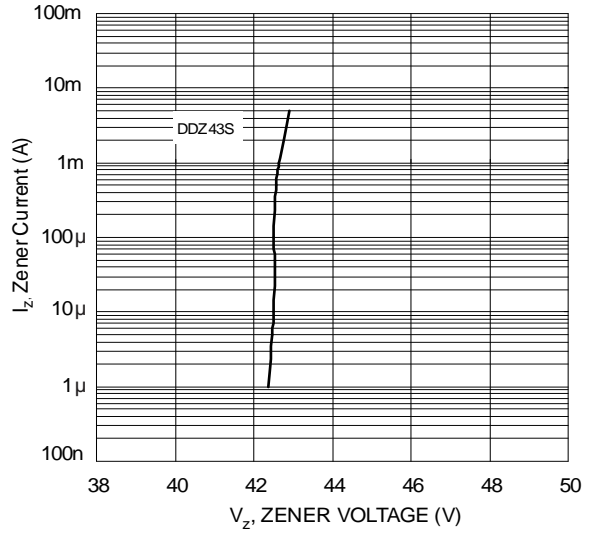


Fig. 5 Typical Zener Breakdown Characteristics, DDZ43S

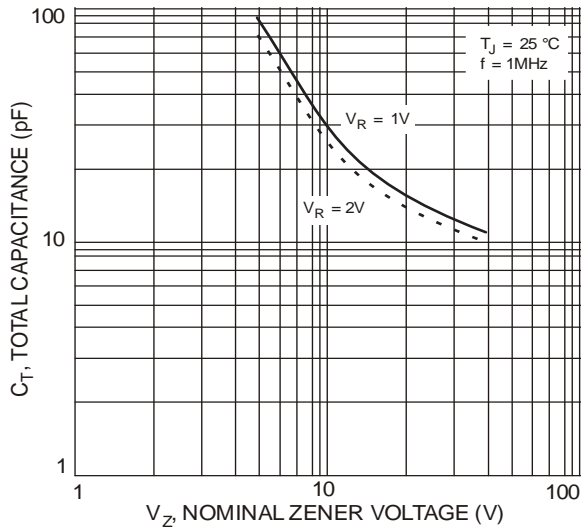


Fig. 6 Typical Total Capacitance vs. Nominal Zener Voltage

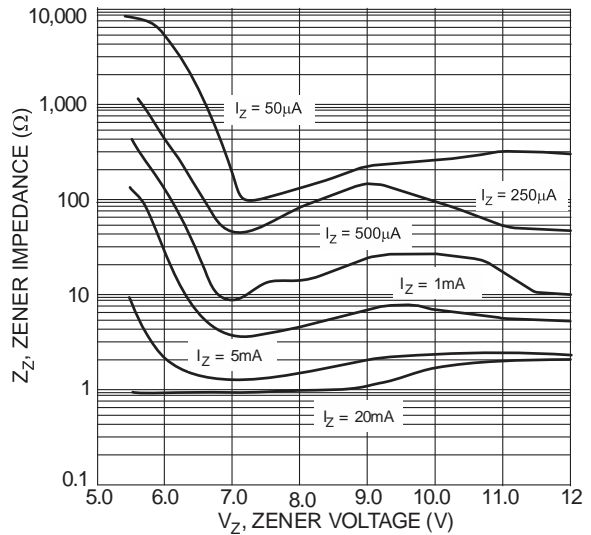


Fig. 7 Typical Zener Impedance Characteristics, DDZ5V6BS - DDZ12CS

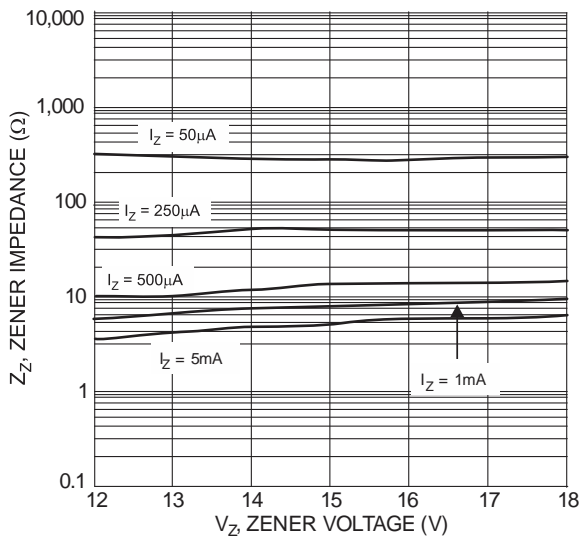


Fig. 8 Typical Zener Impedance Characteristics, DDZ12CS - DDZ18CS

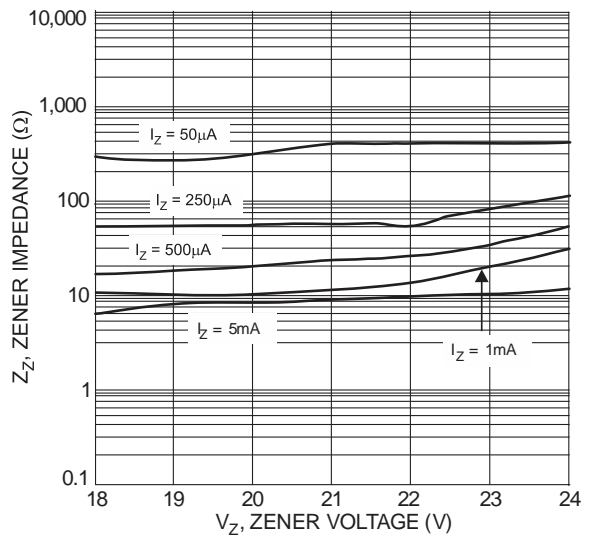


Fig. 9 Typical Zener Impedance Characteristics, DDZ18CS - DDZ24CS

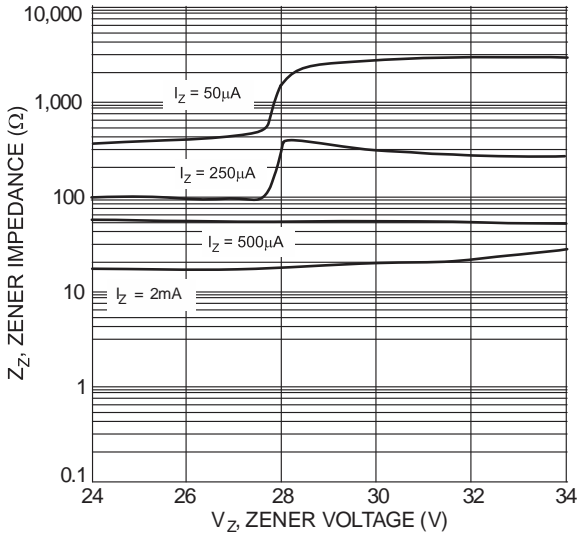


Fig. 10 Typical Zener Impedance Characteristics, DDZ24CS - DDZ33S

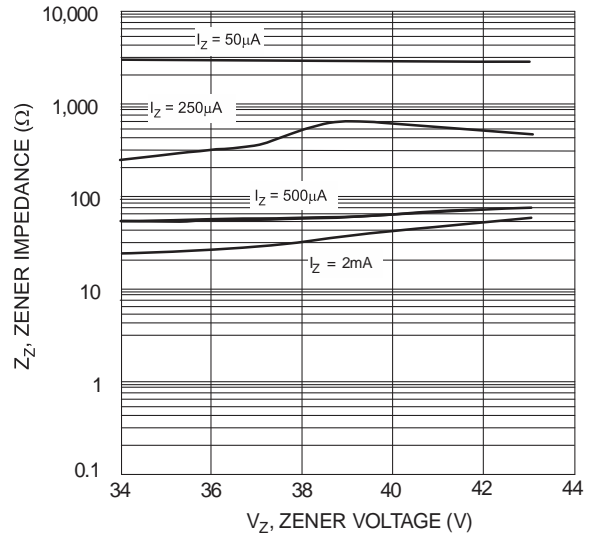


Fig. 11 Typical Zener Impedance Characteristics, DDZ36S - DDZ43S

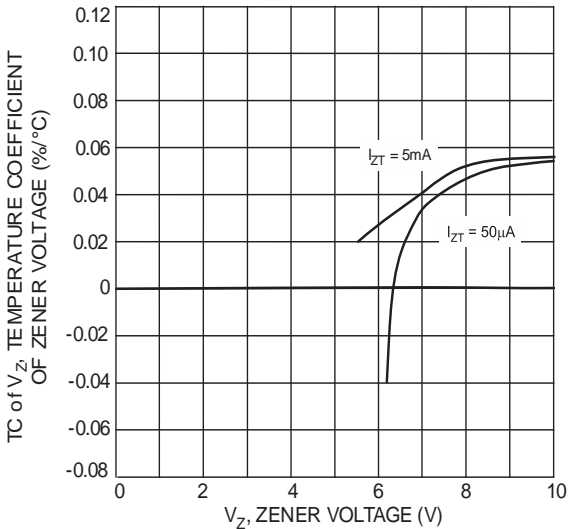


Fig. 12 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ6V2BS-DDZ10CS

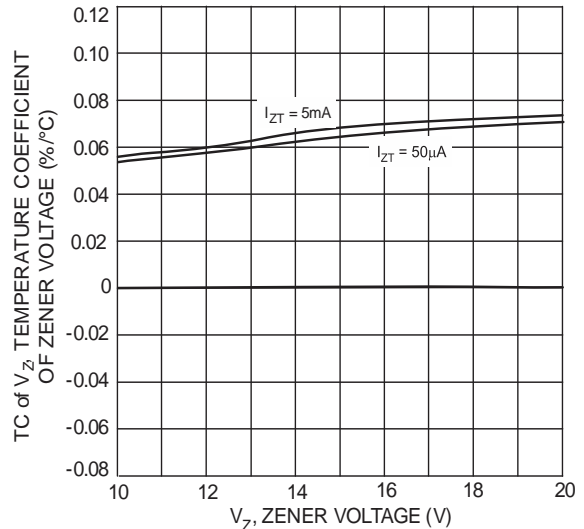


Fig. 13 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ10CS-DDZ20CS

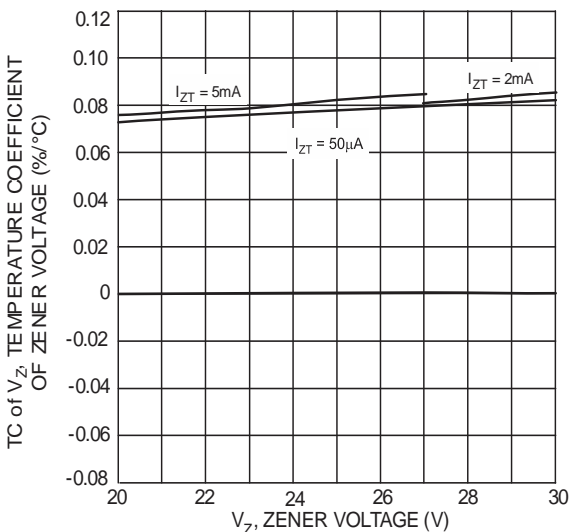


Fig. 14 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ20CS-DDZ30DS

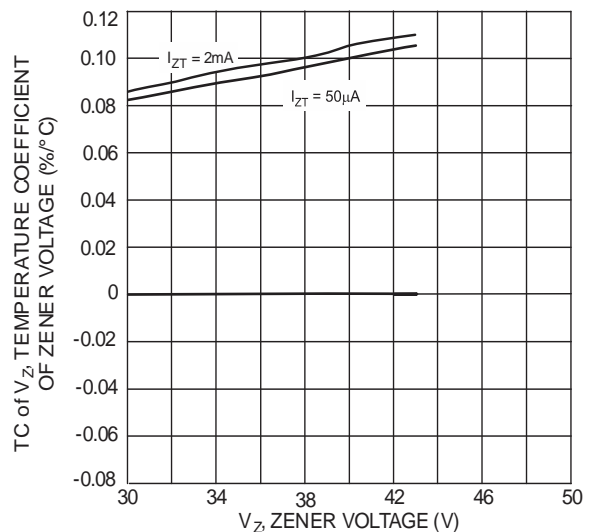
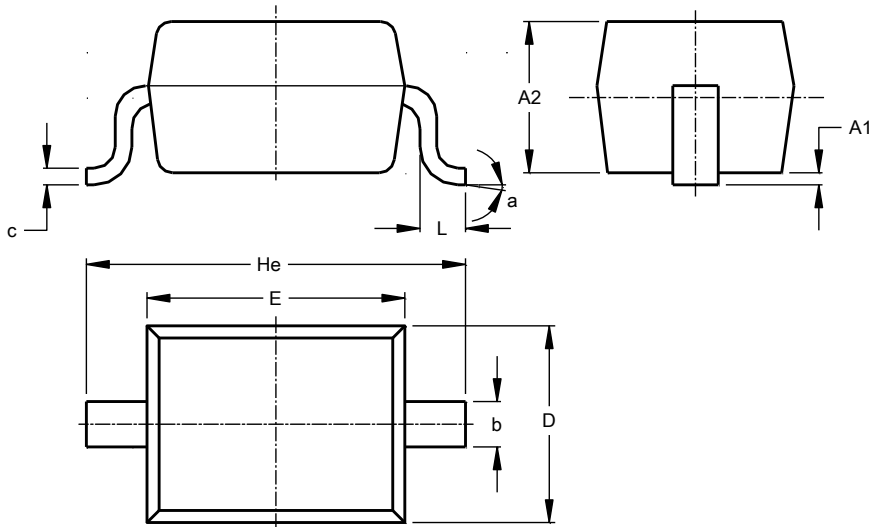


Fig. 15 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ30DS-DDZ43S

Package Outline Dimensions

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

SOD323

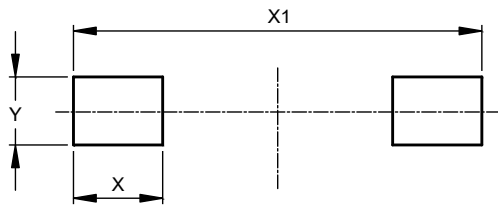


| SOD323 | | | |
|----------------------|------|------|------|
| Dim | Min | Max | Typ |
| A1 | -- | 0.10 | 0.05 |
| A2 | 1.00 | 1.10 | 1.05 |
| b | 0.25 | 0.35 | 0.30 |
| c | 0.10 | 0.15 | 0.11 |
| D | 1.20 | 1.40 | 1.30 |
| E | 1.60 | 1.80 | 1.70 |
| He | 2.30 | 2.70 | 2.50 |
| L | 0.20 | 0.40 | 0.30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