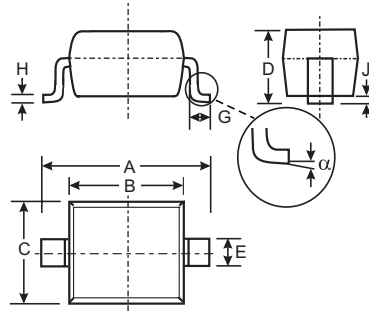


Features

- Very Sharp Breakdown Characteristics
- Very Tight Tolerance on V_Z
- Ideally Suited for Automated Assembly Processes
- Very Low Leakage Current
- **Lead Free By Design/RoHS Compliant (Note 7)**

Mechanical Data

- Case: SOD-323
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020C
- Terminals: Finish - Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- 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 | |
| α | 0° | 8° |
| All Dimensions in mm | | |

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|---|----------------|-------------|------|
| Forward Voltage @ $I_F = 10\text{mA}$ | V_F | 0.9 | V |
| Operating and Storage Temperature Range | T_j, T_{STG} | -65 to +150 | °C |

Thermal Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

| Characteristic | Symbol | Value | Unit |
|--|-----------------|-------|------|
| Power Dissipation (Note 1) | P_d | 200 | mW |
| Thermal Resistance, Junction to Ambient Air (Note 1) | $R_{\theta JA}$ | 625 | °C/W |

Notes: 1. Device 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>.

| Type Number | Marking Code | Zener Voltage Range (Notes 2,3) | | | Maximum Zener Impedance (Note 4) | | | Maximum Reverse Current (Note 5) | |
|-------------|--------------|------------------------------------|---------|-----------------|-------------------------------------|-----------------------------------|-----------------|-------------------------------------|------------------|
| | | 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 | 0.1 | 5.0 |
| DDZ7V5CS | YQ | 7.29 | 7.67 | 20 | 6 | 120 | 0.5 | 0.1 | 6.0 |
| DDZ8V2CS | YR | 8.03 | 8.45 | 20 | 8 | 120 | 0.5 | 0.1 | 6.5 |
| DDZ9V1CS | YS | 8.83 | 9.30 | 20 | 8 | 120 | 0.5 | 0.1 | 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 |

- Notes:
- The Zener voltage is measured 40ms after power is supplied.
 - For inquiries on tighter tolerances, or alternate nominal zener voltages, please contact your Diodes Inc. sales representative for availability and minimum order details.
 - f = 1kHz.
 - Short duration test pulse used to minimize self-heating effect.

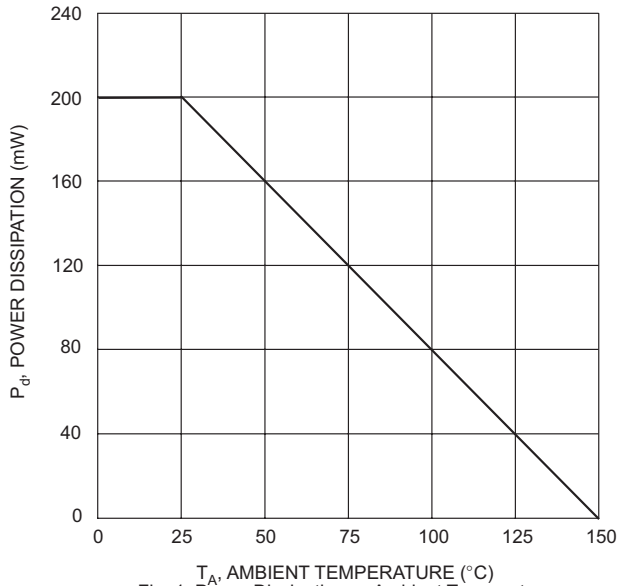


Fig. 1 Power Dissipation vs Ambient Temperature

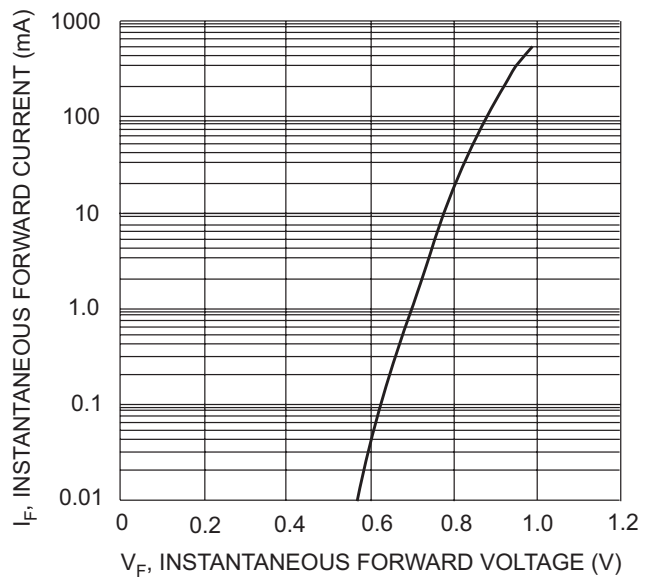


Fig. 2 Typical Forward Characteristics

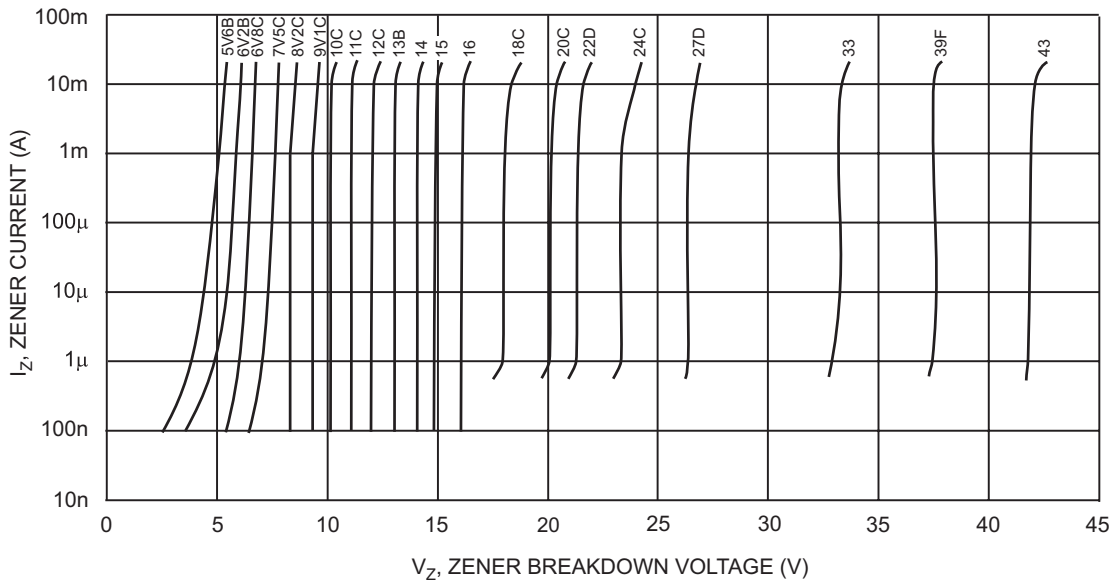


Fig. 3 Typical Reverse Characteristics

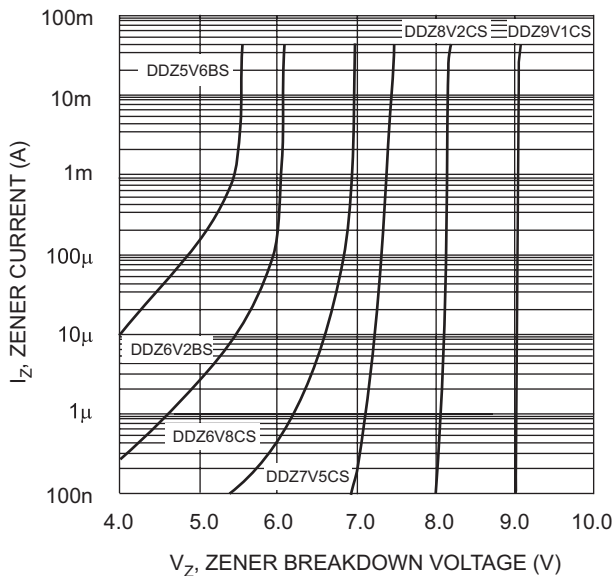


Fig. 4 Typical Reverse Characteristics, DDZ5V6BS - DDZ9V1CS

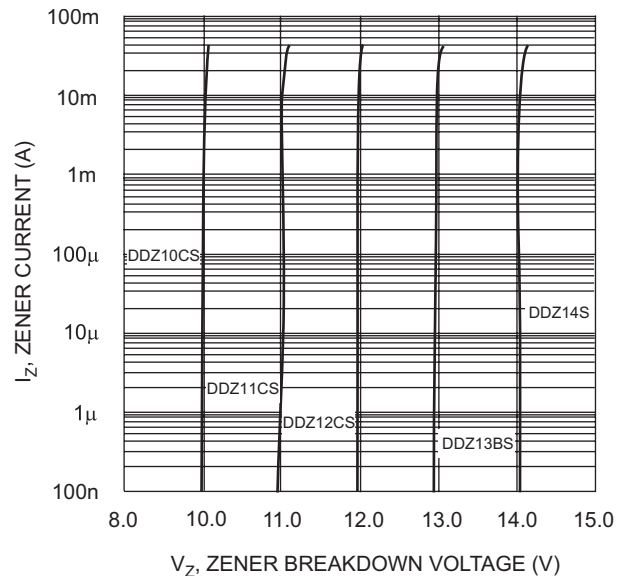


Fig. 5 Typical Reverse Characteristics, DDZ10CS - DDZ14S

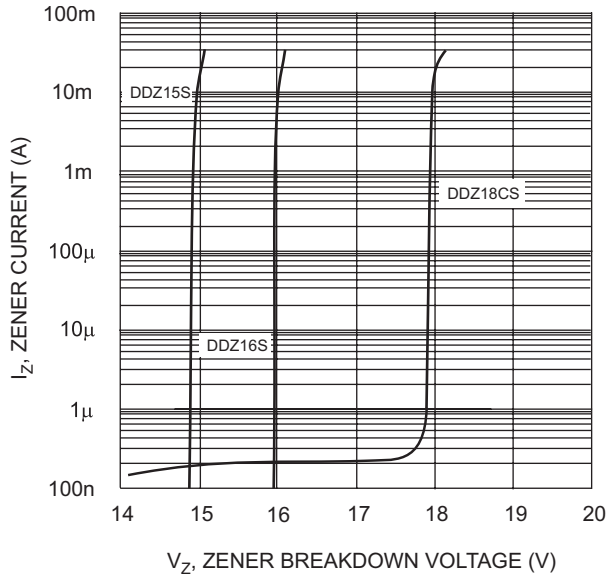


Fig. 6 Typical Reverse Characteristics, DDZ15S - DDZ18CS

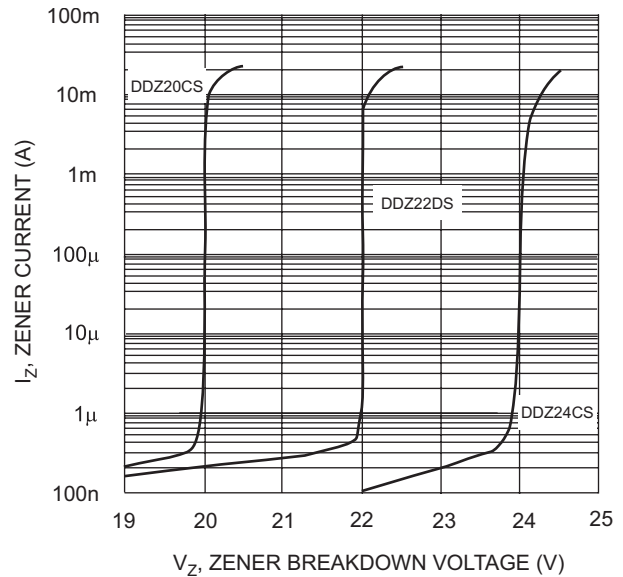


Fig. 7 Typical Reverse Characteristics, DDZ20CS - DDZ24CS

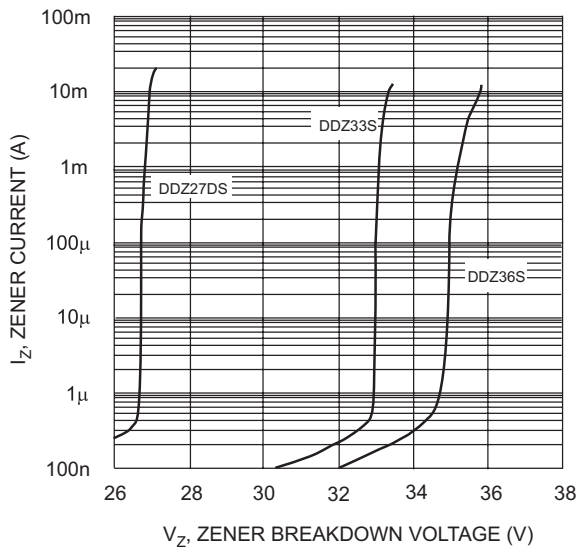


Fig. 8 Typical Reverse Characteristics, DDZ27DS - DDZ36S

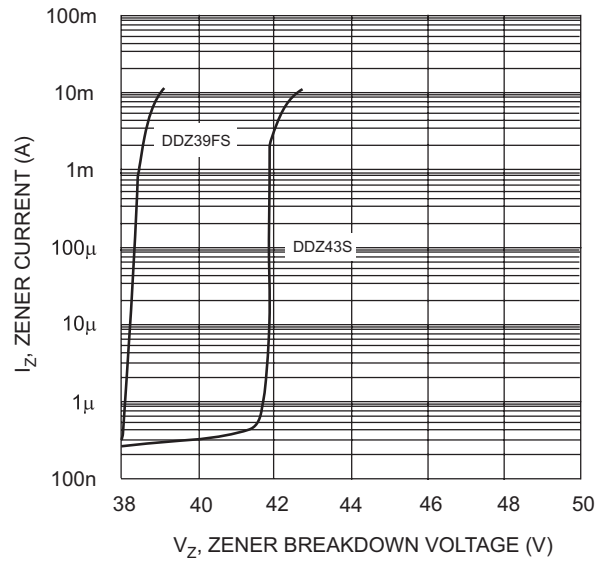


Fig. 9 Typical Reverse Characteristics, DDZ39FS - DDZ43S

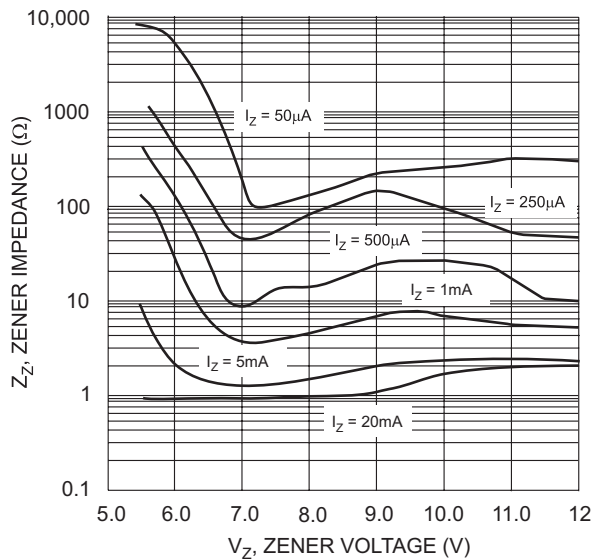


Fig. 10 Typical Zener Impedance Characteristics, DDZ5V6BS - DDZ12CS

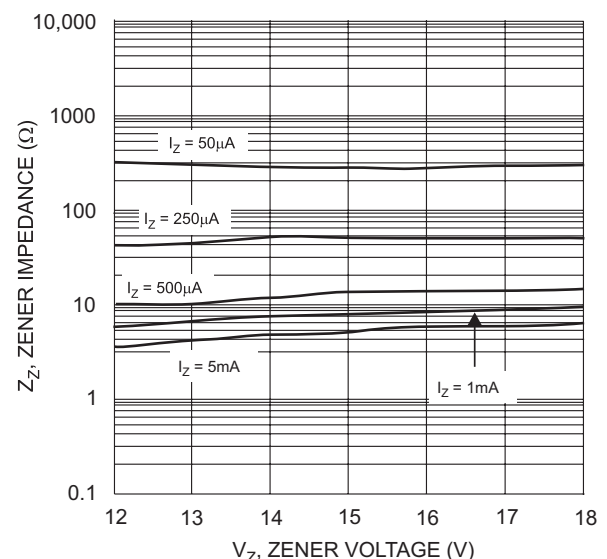


Fig. 11 Typical Zener Impedance Characteristics, DDZ12CS - DDZ43S

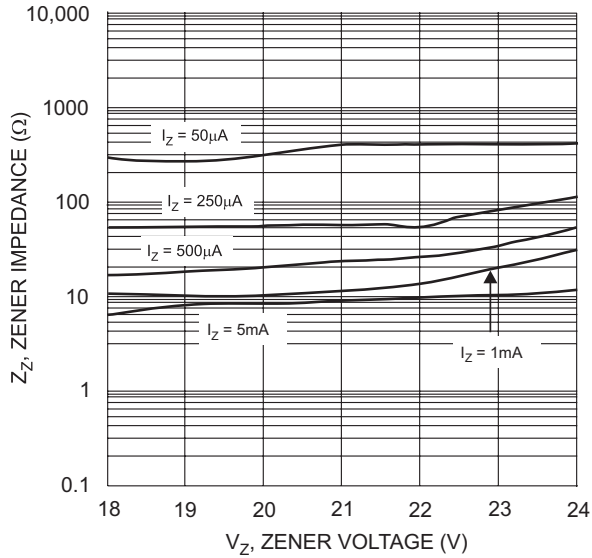


Fig. 12 Typical Zener Impedance Characteristics, DDZ18CS - DDZ24CS

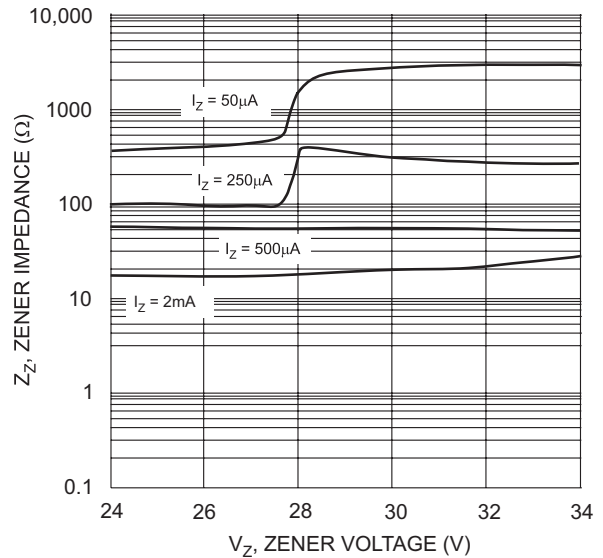


Fig. 13 Typical Zener Impedance Characteristics, DDZ24CS - DDZ33S

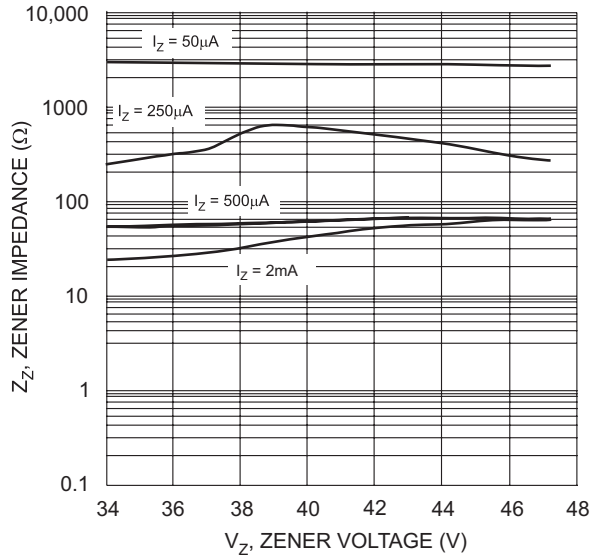


Fig. 14 Typical Zener Impedance Characteristics, DDZ36S - DDZ43S

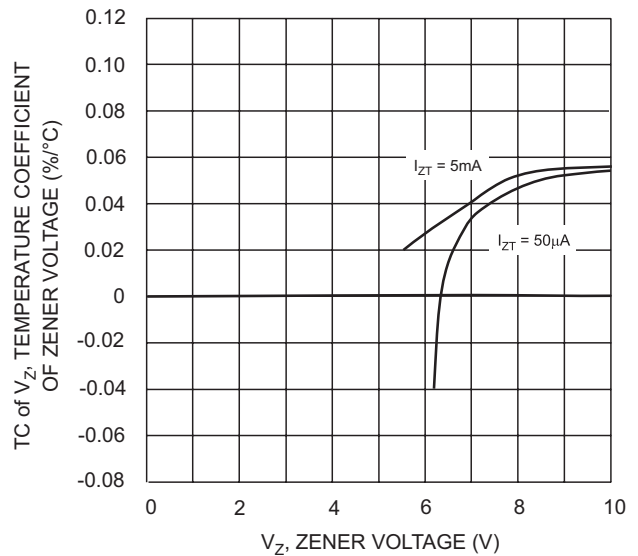


Fig. 15 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ6V2BS-DDZ10CS

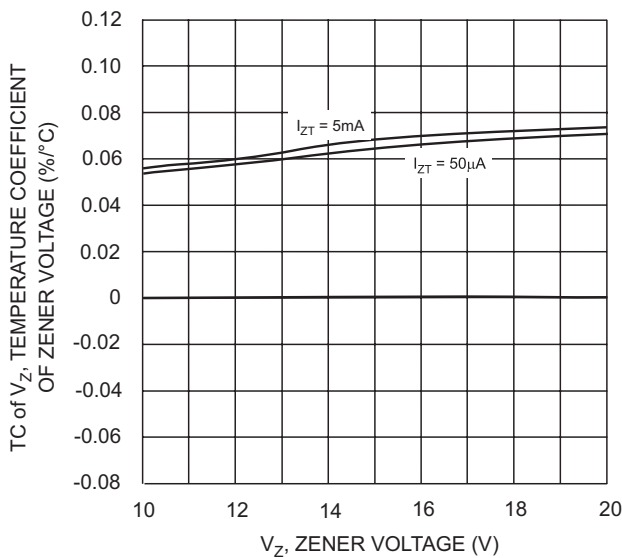


Fig. 16 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ10CS-DDZ20CS

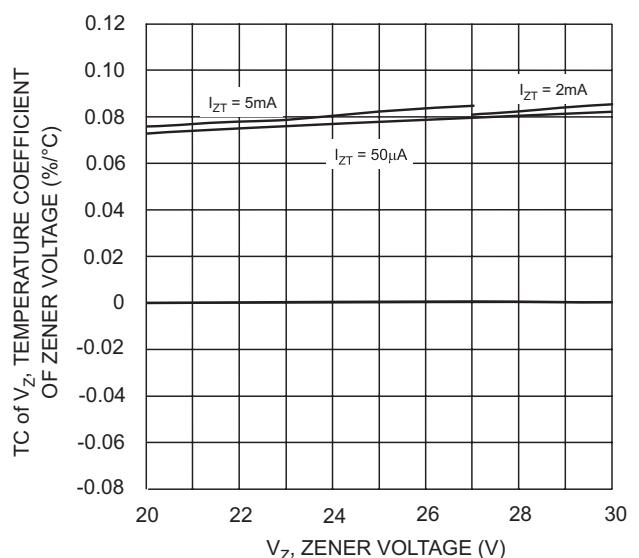


Fig. 17 Typical Temperature Coefficient of Zener Voltage, DDZ20CS-DDZ30DS

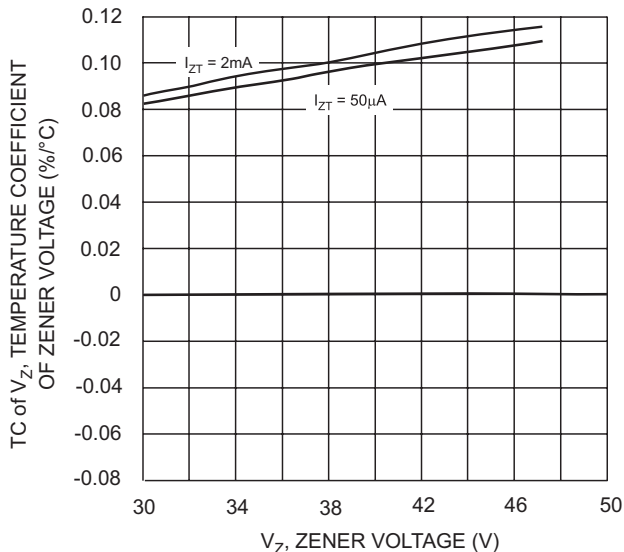


Fig. 18 Typical Temperature Coefficient of Zener Voltage, DDZ30DS-DDZ43S

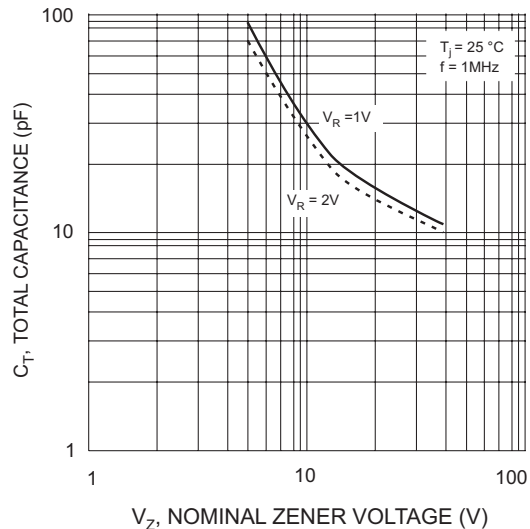


Fig. 19 Total Capacitance vs Nominal Zener Voltage

Ordering Information (Note 6)

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

* Example: The part number for the 6.2 Volt device would be DDZ6V2BS-7.
 Note : 6. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.
 7. No purposefully added lead.

Marking Information



XX = Product Type Marking Code (See Table 1)

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