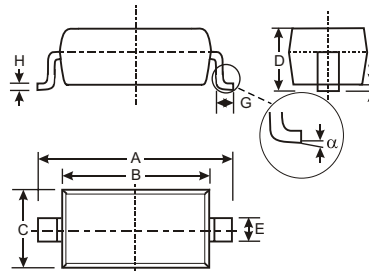


Features

- Very Sharp Breakdown Characteristics
- 500mW Power Dissipation on Ceramic PCB
- Very Tight Tolerance on V_Z
- Ideally Suited for Automated Assembly Processes
- Very Low Leakage Current
- Lead Free Product

Mechanical Data

- Case: SOD-123, Plastic
- Plastic Material: UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Terminals: Finish - Matte Tin Solderable per MIL-STD-202, Method 208 (Note 1)
- Polarity: Cathode Band
- Marking: See Below
- Weight: 0.01 grams (approx.)



| SOD-123 | | |
|----------------------|--------------|------|
| Dim | Min | Max |
| A | 3.55 | 3.85 |
| B | 2.55 | 2.85 |
| C | 1.40 | 1.70 |
| D | — | 1.35 |
| E | 0.55 Typical | |
| G | 0.25 | — |
| H | 0.11 Typical | |
| J | — | 0.10 |
| 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 |
| Power Dissipation (Note 2) | P_d | 500 | mW |
| Thermal Resistance, Junction to Ambient Air (Note 2) | $R_{\theta JA}$ | 305 | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range | T_{j}, T_{STG} | -65 to +150 | $^\circ\text{C}$ |

- Note:
1. If lead-bearing terminal plating is required, please contact your Diodes Inc. sales representative for availability and minimum order details.
 2. Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad areas 25mm².

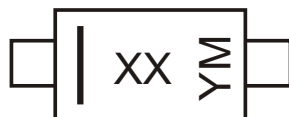
Ordering Information (Note 3)

| Device | Packaging | Shipping |
|---------------------|-----------|------------------|
| DDZ(V_Z Rank)-7* | SOD-123 | 3000/Tape & Reel |

* Example: The part number for the 6.2 Volt device would be DDZ6V2B-7.

Note : 3. For Packaging Details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

Marking Information



XX = Product Type Marking Code (See Table 1)
 YM = Date Code Marking
 Y = Year (ex: P = 2003)
 M = Month (ex: 9 = September)

Date Code Key

| Year | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|------|------|------|------|------|------|------|------|
| Code | P | R | S | T | U | V | W |

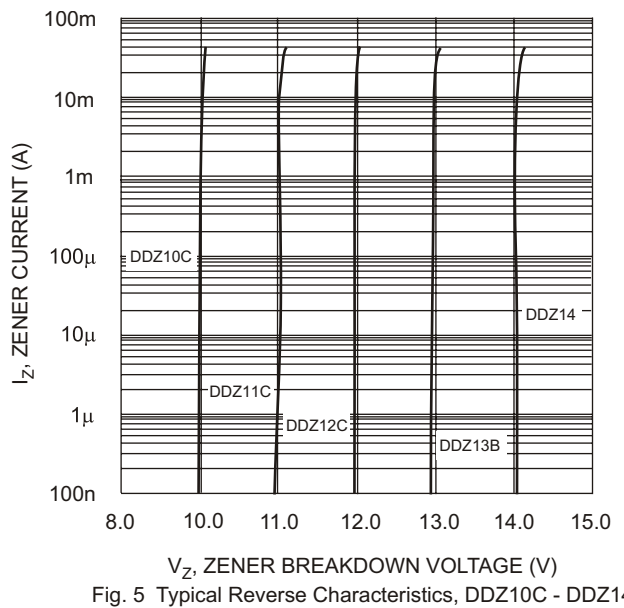
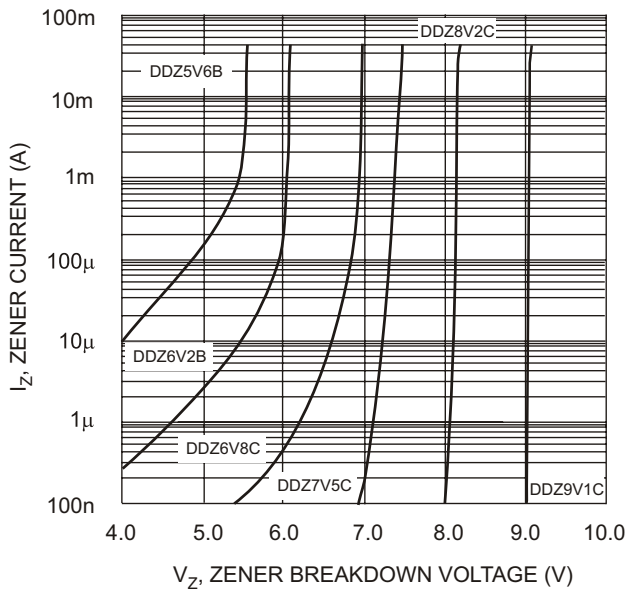
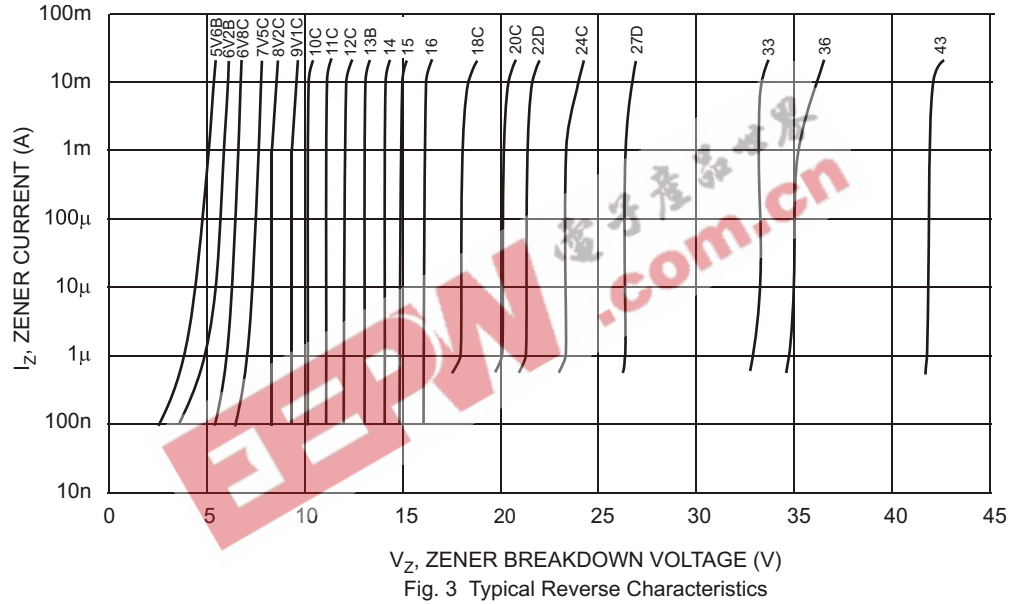
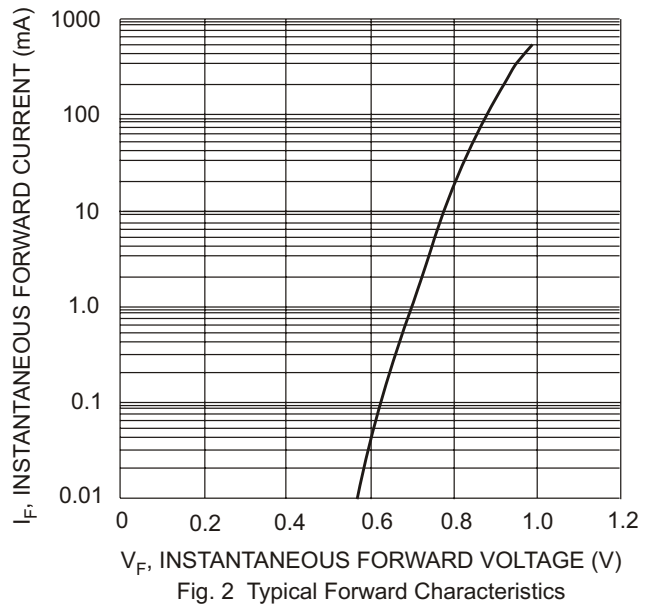
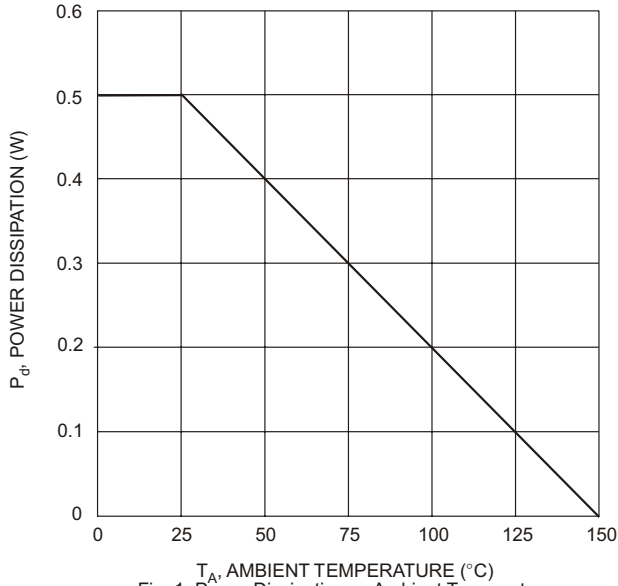
| Month | Jan | Feb | March | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | O | N | D |

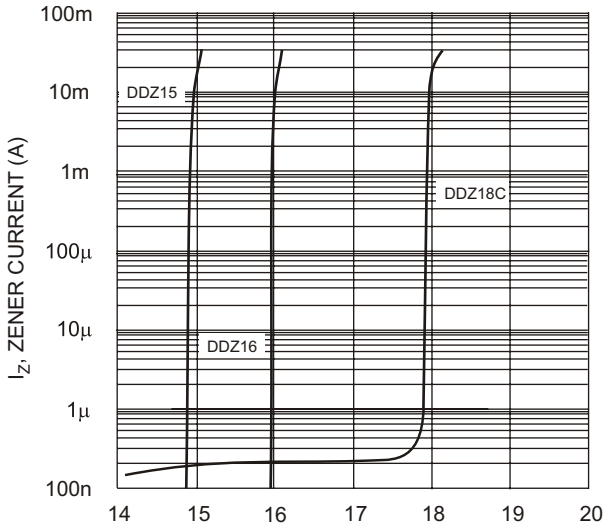
Electrical Characteristics @ T_A = 25°C unless otherwise specified

Table 1

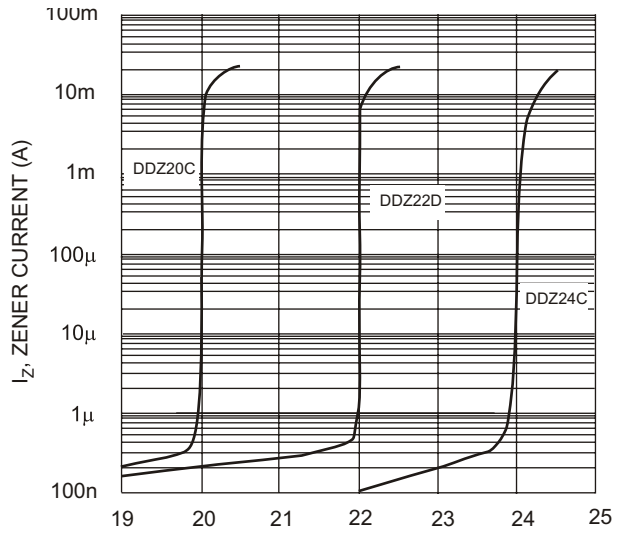
| Type Number | Marking Code | Zener Voltage Range (Notes 4,5) | | | Maximum Zener Impedance (Note 6) | | | Maximum Reverse Current (Note 7) | |
|-------------|--------------|------------------------------------|---------|-----------------|-------------------------------------|-----------------------------------|-----------------|-------------------------------------|------------------|
| | | 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 |
| DDZ3V3A | GG | 3.16 | 3.38 | 20 | 70 | 1000 | 1 | 20 | 1.0 |
| DDZ3V6B | KH | 3.600 | 3.845 | 20 | 60 | 1000 | 1 | 10 | 1.0 |
| DDZ3V9B | KJ | 3.89 | 4.16 | 20 | 50 | 1000 | 1 | 5 | 1.0 |
| DDZ4V3B | KK | 4.17 | 4.43 | 20 | 40 | 1000 | 1 | 5 | 1.0 |
| DDZ4V7B | KL | 4.55 | 4.80 | 20 | 25 | 900 | 1 | 5 | 1.0 |
| DDZ5V1B | KM | 4.94 | 5.20 | 20 | 17 | 480 | 1 | 5 | 1.5 |
| DDZ5V6B | KN | 5.45 | 5.73 | 20 | 11 | 400 | 1 | 0.5 | 2.5 |
| DDZ6V2B | KO | 5.96 | 6.27 | 20 | 7 | 150 | 1 | 0.5 | 4.0 |
| DDZ6V8B | KP | 6.49 | 6.83 | 20 | 5 | 150 | 0.5 | 0.1 | 5.0 |
| DDZ6V8C | YP | 6.66 | 7.01 | 20 | 5 | 150 | 0.5 | 0.1 | 5.0 |
| DDZ7V5B | KQ | 7.07 | 7.45 | 20 | 6 | 120 | 0.5 | 0.1 | 6.0 |
| DDZ7V5C | YQ | 7.29 | 7.67 | 20 | 6 | 120 | 0.5 | 0.1 | 6.0 |
| DDZ8V2B | KR | 7.78 | 8.19 | 20 | 8 | 120 | 0.5 | 0.1 | 6.5 |
| DDZ8V2C | YR | 8.03 | 8.45 | 20 | 8 | 120 | 0.5 | 0.1 | 6.5 |
| DDZ9V1B | KS | 8.57 | 9.01 | 20 | 8 | 120 | 0.5 | 0.1 | 7.0 |
| DDZ9V1C | YS | 8.83 | 9.30 | 20 | 8 | 120 | 0.5 | 0.1 | 7.0 |
| DDZ10B | KT | 9.41 | 9.90 | 20 | 8 | 120 | 0.5 | 0.1 | 8.0 |
| DDZ10C | YT | 9.70 | 10.20 | 20 | 8 | 120 | 0.5 | 0.1 | 8.0 |
| DDZ11B | KU | 10.50 | 11.05 | 10 | 10 | 120 | 0.5 | 0.1 | 8.4 |
| DDZ11C | YU | 10.82 | 11.38 | 10 | 10 | 120 | 0.5 | 0.1 | 8.4 |
| DDZ12B | KV | 11.44 | 12.03 | 10 | 12 | 110 | 0.5 | 0.1 | 9.1 |
| DDZ12C | YV | 11.74 | 12.35 | 10 | 12 | 110 | 0.5 | 0.1 | 9.1 |
| DDZ13B | KW | 12.55 | 13.21 | 10 | 14 | 110 | 0.5 | 0.1 | 10.0 |
| DDZ14 | GX | 13.44 | 14.13 | 10 | 16 | 110 | 0.5 | 0.05 | 11.0 |
| DDZ14B | KX | 13.89 | 14.62 | 10 | 16 | 110 | 0.5 | 0.05 | 11.0 |
| DDZ15 | GY | 14.80 | 15.57 | 10 | 18 | 150 | 0.5 | 0.05 | 12.0 |
| DDZ16B | KY | 15.25 | 16.04 | 10 | 18 | 150 | 0.5 | 0.05 | 12.0 |
| DDZ16 | YY | 15.69 | 16.51 | 10 | 18 | 150 | 0.5 | 0.05 | 12.0 |
| DDZ17 | KZ | 16.82 | 17.70 | 10 | 23 | 150 | 0.5 | 0.05 | 14.0 |
| DDZ18C | YZ | 17.42 | 18.33 | 10 | 23 | 150 | 0.5 | 0.05 | 14.0 |
| DDZ19 | ZJ | 18.63 | 19.59 | 10 | 28 | 200 | 0.5 | 0.05 | 15.0 |
| DDZ20C | PJ | 19.23 | 20.22 | 10 | 28 | 200 | 0.5 | 0.05 | 15.0 |
| DDZ21 | ZK | 20.64 | 21.71 | 5 | 30 | 200 | 0.5 | 0.05 | 17.0 |
| DDZ22D | 2K | 21.52 | 22.63 | 5 | 30 | 200 | 0.5 | 0.05 | 17.0 |
| DDZ23 | ZL | 22.61 | 23.77 | 5 | 35 | 200 | 0.5 | 0.05 | 19.0 |
| DDZ24C | PL | 23.12 | 24.31 | 5 | 35 | 200 | 0.5 | 0.05 | 19.0 |
| DDZ26 | ZM | 24.97 | 26.26 | 5 | 45 | 250 | 0.5 | 0.05 | 21.0 |
| DDZ27D | 2M | 26.29 | 27.64 | 5 | 45 | 250 | 0.5 | 0.05 | 21.0 |
| DDZ28 | ZN | 27.70 | 29.13 | 5 | 55 | 250 | 0.5 | 0.05 | 23.0 |
| DDZ30D | 2N | 29.02 | 30.51 | 5 | 55 | 250 | 0.5 | 0.05 | 23.0 |
| DDZ31 | ZO | 30.32 | 31.88 | 5 | 65 | 250 | 0.5 | 0.05 | 25.0 |
| DDZ33 | RP | 32.14 | 33.79 | 5 | 75 | 250 | 0.5 | 0.05 | 27.0 |
| DDZ34 | ZP | 32.79 | 34.49 | 5 | 75 | 250 | 0.5 | 0.05 | 27.0 |
| DDZ36 | ZQ | 35.36 | 37.19 | 5 | 85 | 250 | 0.5 | 0.05 | 30.0 |
| DDZ39F | 5Q | 38.14 | 40.11 | 5 | 85 | 250 | 0.5 | 0.05 | 30.0 |
| DDZ43 | ZR | 42.14 | 43.86 | 5 | 90 | — | — | 0.05 | 33.0 |

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

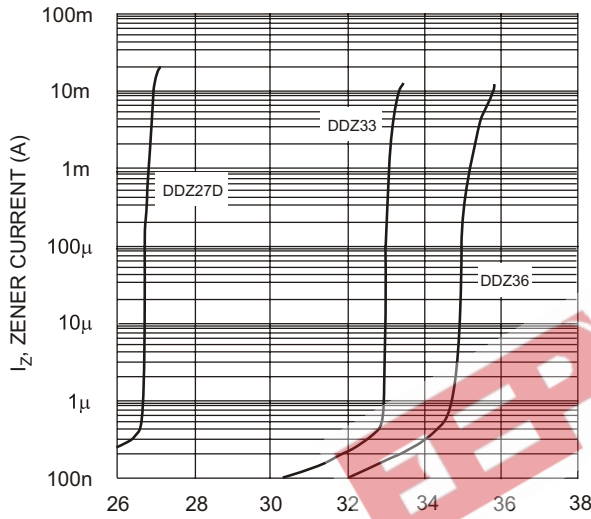




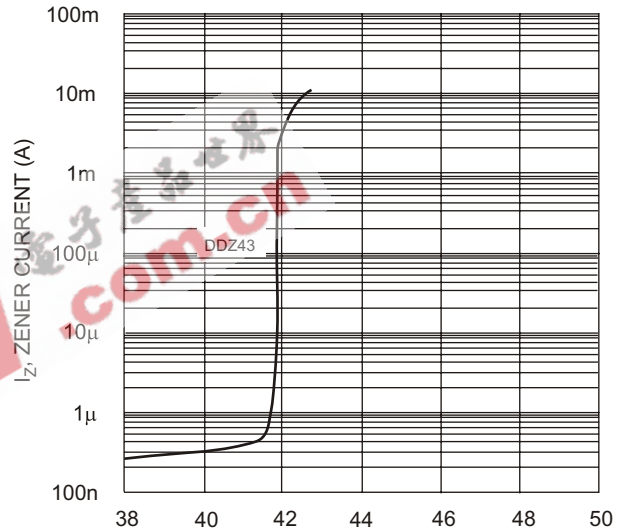
V_Z , ZENER BREAKDOWN VOLTAGE (V)
Fig. 6 Typical Reverse Characteristics, DDZ15 - DDZ18C



V_Z , ZENER BREAKDOWN VOLTAGE (V)
Fig. 7 Typical Reverse Characteristics, DDZ20C - DDZ24C



V_Z , ZENER BREAKDOWN VOLTAGE (V)
Fig. 8 Typical Reverse Characteristics, DDZ27D - DDZ36



V_Z , ZENER BREAKDOWN VOLTAGE (V)
Fig. 9 Typical Reverse Characteristics, DDZ43

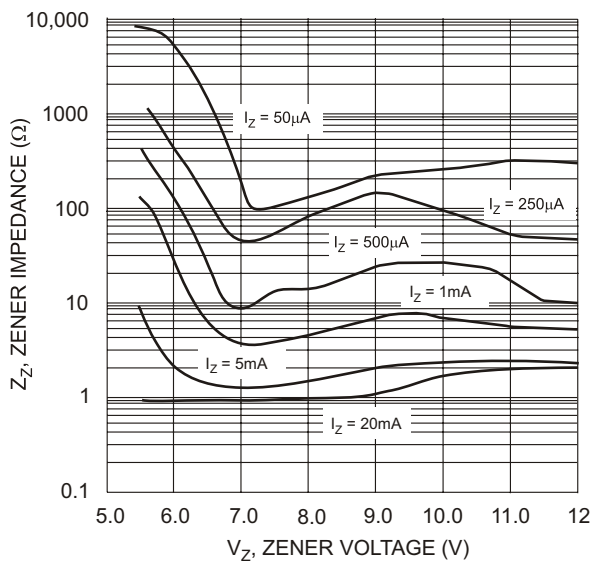


Fig. 10 Typical Zener Impedance Characteristics, DDZ5V6B - DDZ12C

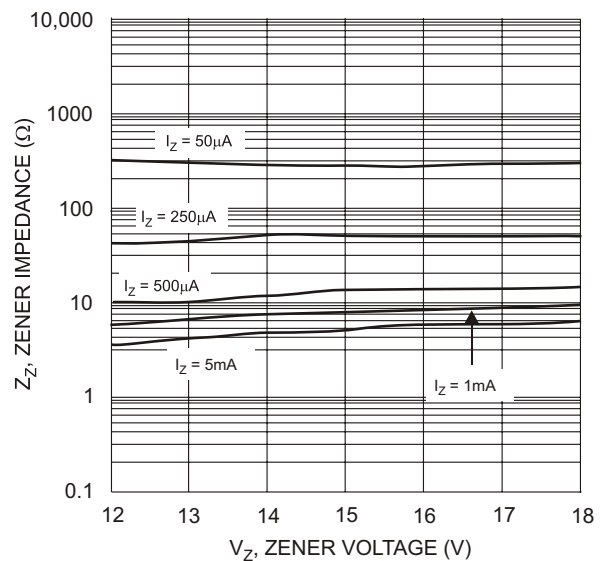


Fig. 11 Typical Zener Impedance Characteristics, DDZ12C - DDZ18C

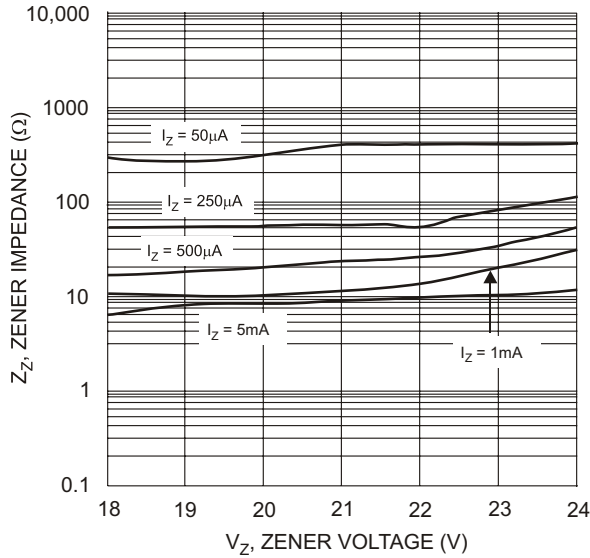


Fig. 12 Typical Zener Impedance Characteristics, DDZ18C - DDZ24C

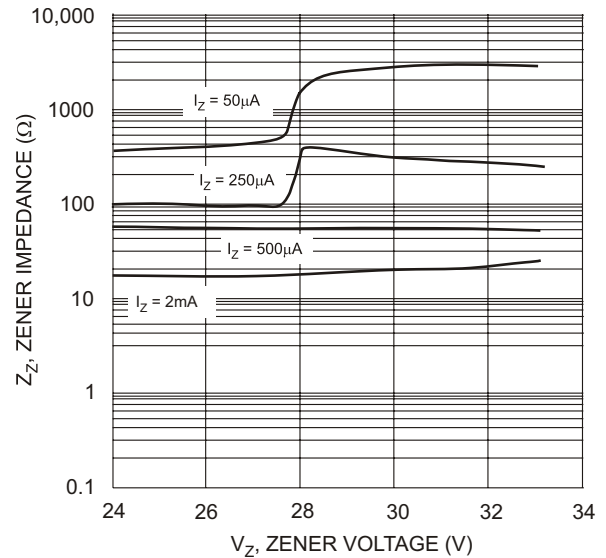


Fig. 13 Typical Zener Impedance Characteristics, DDZ24C - DDZ33

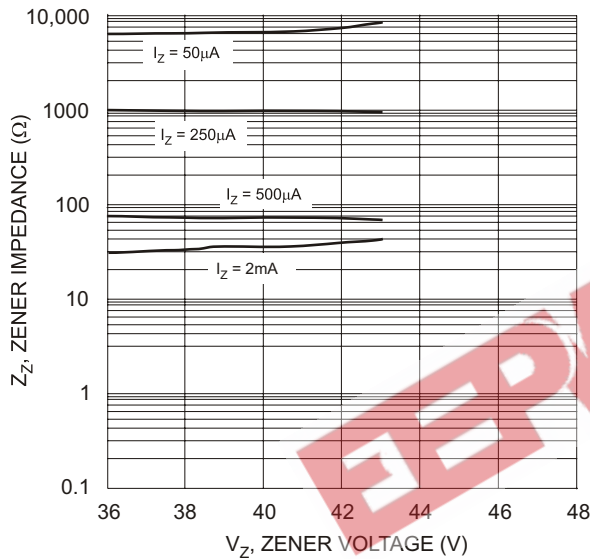


Fig. 14 Typical Zener Impedance Characteristics, DDZ36 - DDZ43

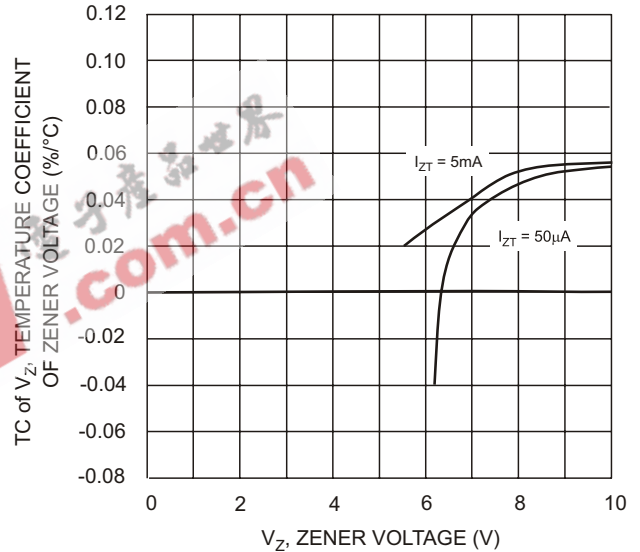


Fig. 15 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ6V2B-DDZ10C

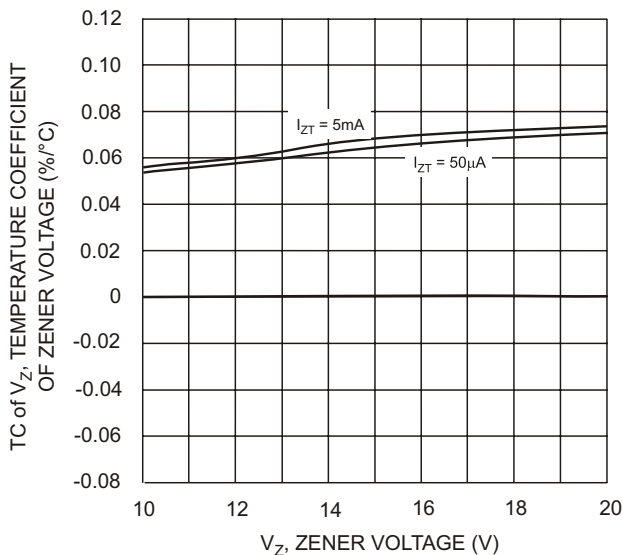


Fig. 16 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ10C-DDZ20C

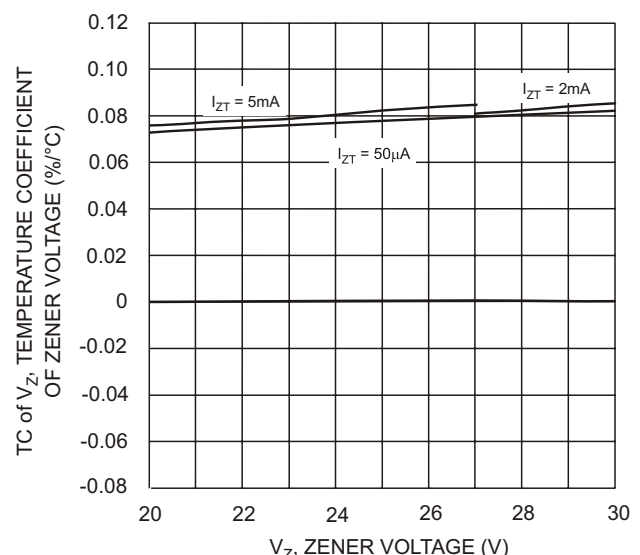


Fig. 17 Typical Temperature Coefficient of Zener Voltage, DDZ20C-DDZ30D

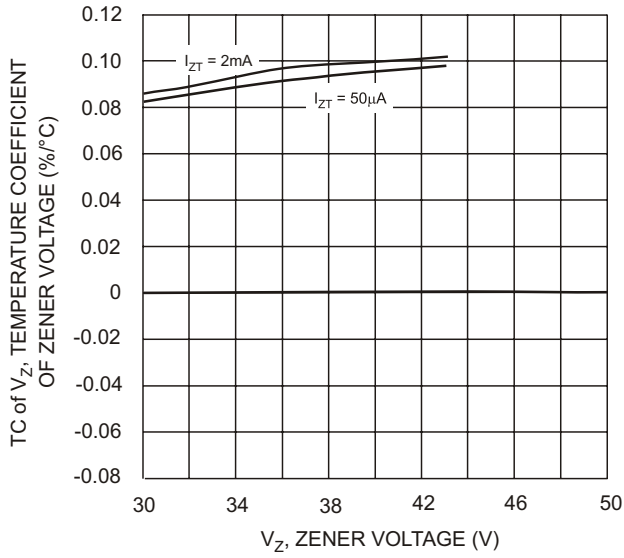


Fig. 18 Typical Temperature Coefficient of Zener Voltage, DDZ30D-DDZ43

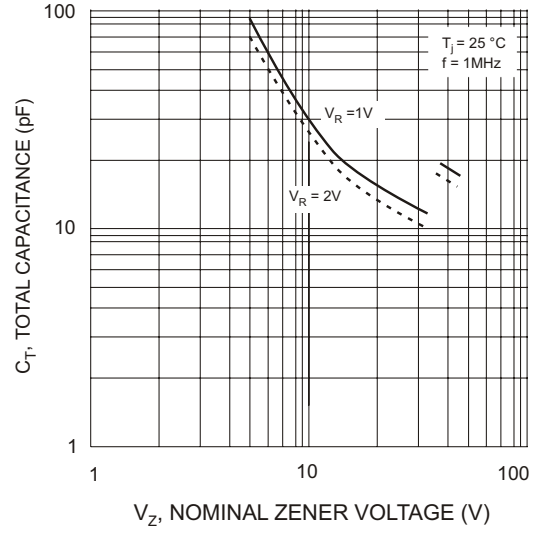


Fig. 19 Total Capacitance vs Nominal Zener Voltage

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