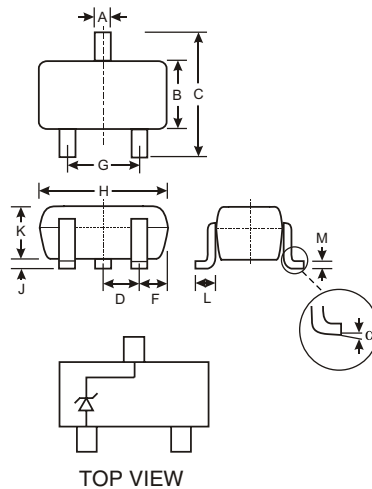


### Features

- Very Sharp Breakdown Characteristics
- Very Tight Tolerance on  $V_Z$
- Ideally Suited for Automated Assembly Processes
- Very Low Leakage Current
- Lead Free Device

### Mechanical Data

- Case: SOT-323, 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: See Diagram
- Marking: See Below
- Weight: 0.006 grams (approx.)



| SOT-323              |              |      |
|----------------------|--------------|------|
| Dim                  | Min          | Max  |
| A                    | 0.25         | 0.40 |
| B                    | 1.15         | 1.35 |
| C                    | 2.00         | 2.20 |
| D                    | 0.65 Nominal |      |
| E                    | 0.30         | 0.40 |
| G                    | 1.20         | 1.40 |
| H                    | 1.80         | 2.20 |
| J                    | 0.0          | 0.10 |
| K                    | 0.90         | 1.00 |
| L                    | 0.25         | 0.40 |
| M                    | 0.10         | 0.18 |
| $\alpha$             | 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)                           | $P_d$           | 200         | mW                 |
| Thermal Resistance, Junction to Ambient Air (Note 2) | $R_{\theta JA}$ | 625         | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range              | $T_j, T_{STG}$  | -65 to +150 | $^\circ\text{C}$   |

- Notes:
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 FR-4 PC board with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

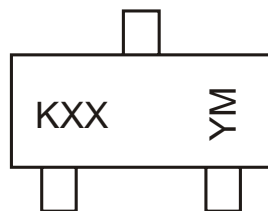
### Ordering Information (Note 3)

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

\* Example: The part number for the 6.2 Volt device would be DDZX6V2BW-7.

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

### Marking Information



KXX = 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    |

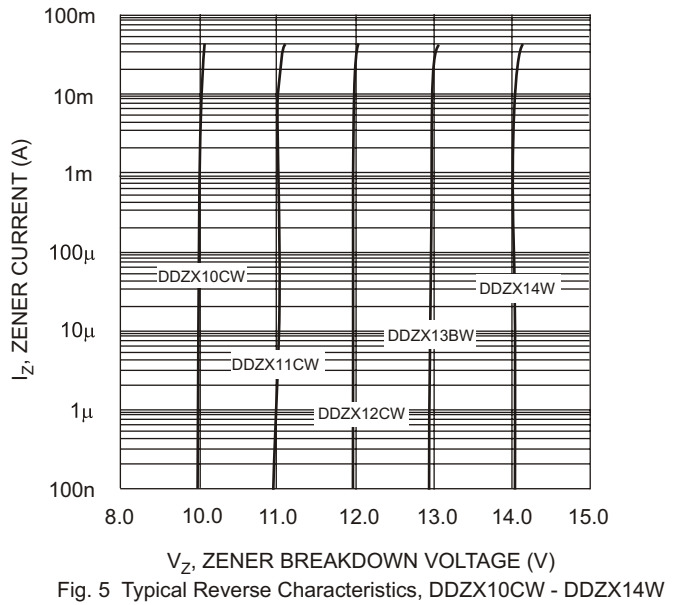
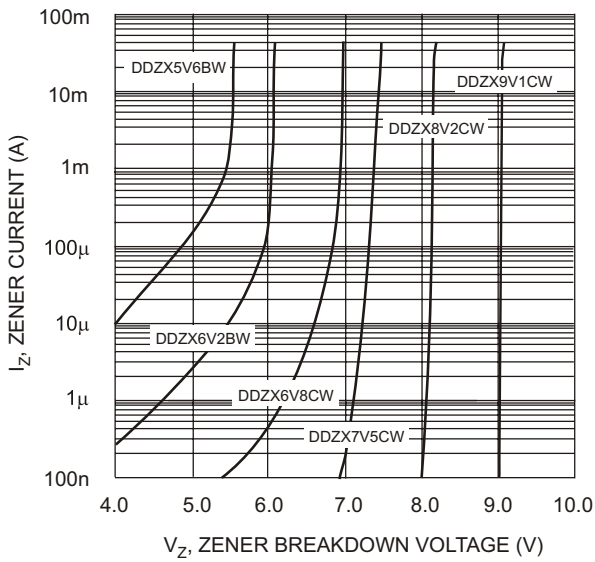
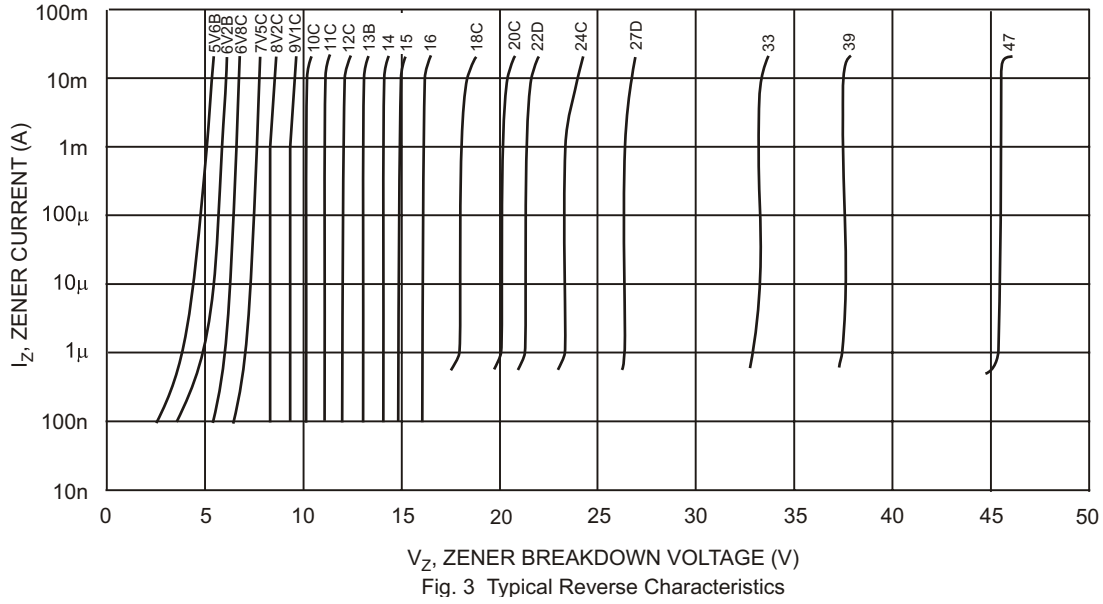
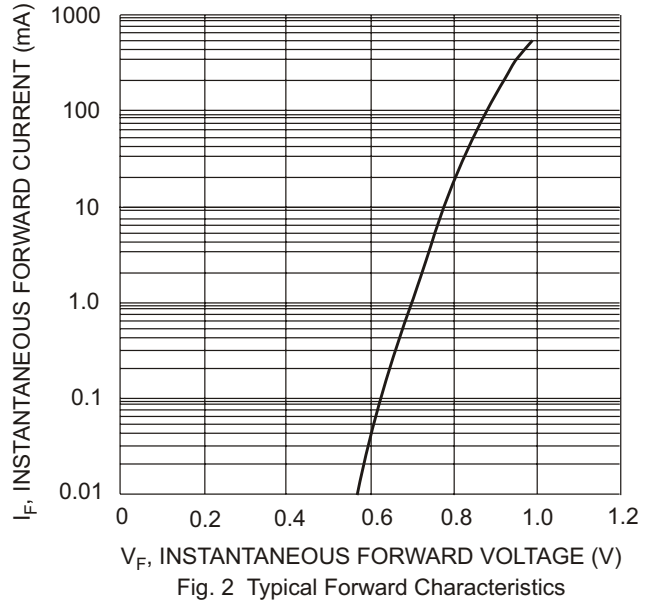
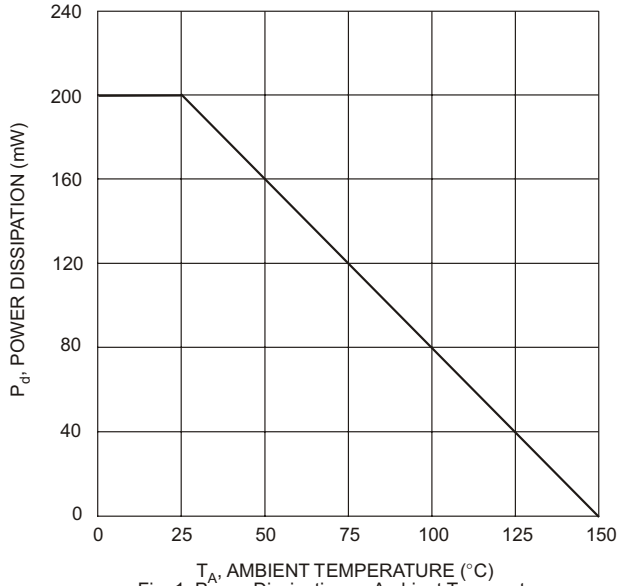
| Month | Jan | Feb | March | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------|-----|-----|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Code  | 1   | 2   | 3     | 4   | 5   | 6   | 7   | 8   | 9   | O   | N   | D   |

**Electrical Characteristics** @ T<sub>A</sub> = 25°C unless otherwise specified

**Table 1**

| Type Number | Marking Code | Zener Voltage Range<br>(Notes 4,5) |         |                 | Maximum Zener Impedance<br>(Note 6) |                                   |                 | Maximum Reverse<br>Current (Note 7) |                  |
|-------------|--------------|------------------------------------|---------|-----------------|-------------------------------------|-----------------------------------|-----------------|-------------------------------------|------------------|
|             |              | V <sub>Z</sub> @ I <sub>ZT</sub>   |         | I <sub>ZT</sub> | Z <sub>ZT</sub> @ I <sub>ZT</sub>   | Z <sub>ZK</sub> @ I <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub>                      | @ V <sub>R</sub> |
|             |              | Min (V)                            | Max (V) | mA              | Ω                                   |                                   | mA              | μA                                  | V                |
| DDZX5V1BW   | KM           | 4.94                               | 5.20    | 20              | 17                                  | 480                               | 1               | 5                                   | 1.5              |
| DDZX5V6BW   | KN           | 5.45                               | 5.73    | 20              | 11                                  | 400                               | 1               | 0.5                                 | 2.5              |
| DDZX6V2BW   | KO           | 5.96                               | 6.27    | 20              | 7                                   | 150                               | 1               | 0.5                                 | 4.0              |
| DDZX6V8CW   | YP           | 6.66                               | 7.01    | 20              | 5                                   | 150                               | 0.5             | 0.1                                 | 5.0              |
| DDZX7V5CW   | YQ           | 7.29                               | 7.67    | 20              | 6                                   | 120                               | 0.5             | 0.1                                 | 6.0              |
| DDZX8V2CW   | YR           | 8.03                               | 8.45    | 20              | 8                                   | 120                               | 0.5             | 0.1                                 | 6.5              |
| DDZX9V1CW   | YS           | 8.83                               | 9.30    | 20              | 8                                   | 120                               | 0.5             | 0.1                                 | 7.0              |
| DDZX10CW    | YT           | 9.70                               | 10.20   | 20              | 8                                   | 120                               | 0.5             | 0.1                                 | 8.0              |
| DDZX11CW    | YU           | 10.82                              | 11.38   | 10              | 10                                  | 120                               | 0.5             | 0.1                                 | 8.4              |
| DDZX12CW    | YV           | 11.74                              | 12.35   | 10              | 12                                  | 110                               | 0.5             | 0.1                                 | 9.1              |
| DDZX13BW    | KW           | 12.55                              | 13.21   | 10              | 14                                  | 110                               | 0.5             | 0.1                                 | 10.0             |
| DDZX14W     | GX           | 13.44                              | 14.13   | 10              | 16                                  | 110                               | 0.5             | 0.05                                | 11.0             |
| DDZX15W     | GY           | 14.80                              | 15.57   | 10              | 18                                  | 150                               | 0.5             | 0.05                                | 12.0             |
| DDZX16W     | YY           | 15.69                              | 16.51   | 10              | 18                                  | 150                               | 0.5             | 0.05                                | 12.0             |
| DDZX18CW    | YZ           | 17.42                              | 18.33   | 10              | 23                                  | 150                               | 0.5             | 0.05                                | 14.0             |
| DDZX20CW    | PJ           | 19.23                              | 20.22   | 10              | 28                                  | 200                               | 0.5             | 0.05                                | 15.0             |
| DDZX22DW    | 2K           | 21.52                              | 22.63   | 5               | 30                                  | 200                               | 0.5             | 0.05                                | 17.0             |
| DDZX24CW    | PL           | 23.12                              | 24.31   | 5               | 35                                  | 200                               | 0.5             | 0.05                                | 19.0             |
| DDZX27DW    | 2M           | 26.29                              | 27.64   | 5               | 45                                  | 250                               | 0.5             | 0.05                                | 21.0             |
| DDZX30DW    | 2N           | 29.02                              | 30.51   | 5               | 55                                  | 250                               | 0.5             | 0.05                                | 23.0             |
| DDZX33W     | RP           | 32.14                              | 33.79   | 5               | 75                                  | 250                               | 0.5             | 0.05                                | 27.0             |
| DDZX36W     | ZQ           | 35.36                              | 37.19   | 5               | 85                                  | 250                               | 0.5             | 0.05                                | 30.0             |
| DDZX39FW    | 5Q           | 38.14                              | 40.11   | 5               | 85                                  | 250                               | 0.5             | 0.05                                | 30.0             |
| DDZX43W     | ZR           | 42.14                              | 43.86   | 5               | 90                                  | —                                 | —               | 0.05                                | 33.0             |
| DDZX47W     | ZS           | 46.06                              | 47.94   | 5               | 90                                  | —                                 | —               | 0.05                                | 36.0             |

- 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.



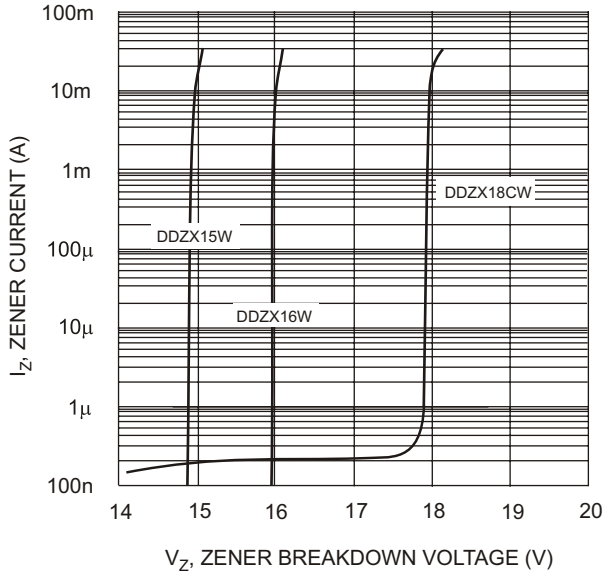


Fig. 6 Typical Reverse Characteristics, DDZX15W - DDZX18CW

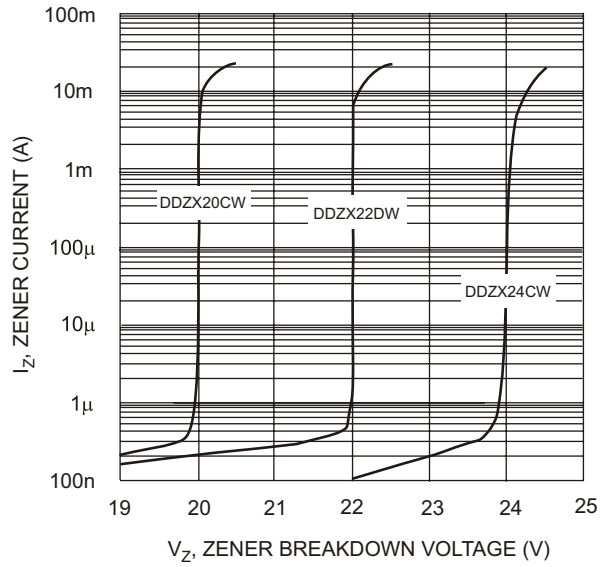


Fig. 7 Typical Reverse Characteristics, DDZX20CW - DDZX24CW

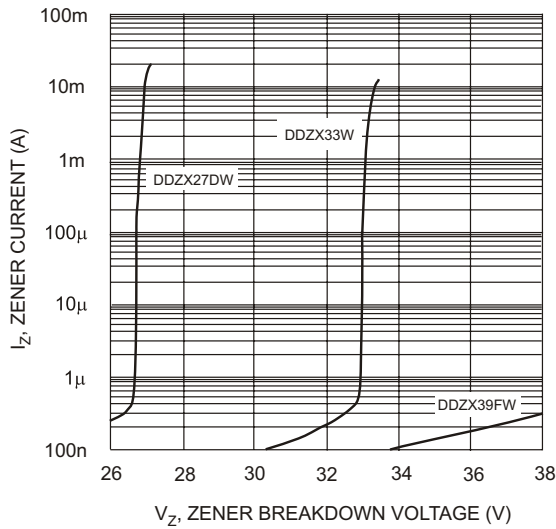


Fig. 8 Typical Reverse Characteristics, DDZX27DW - DDZX39FW

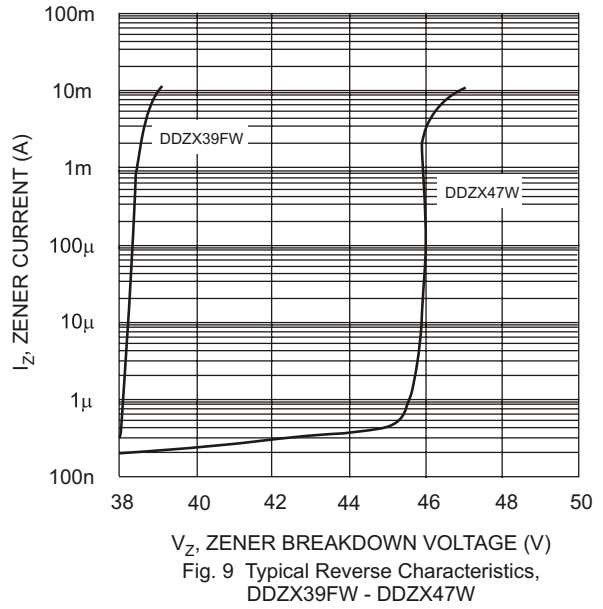


Fig. 9 Typical Reverse Characteristics, DDZX39FW - DDZX47W

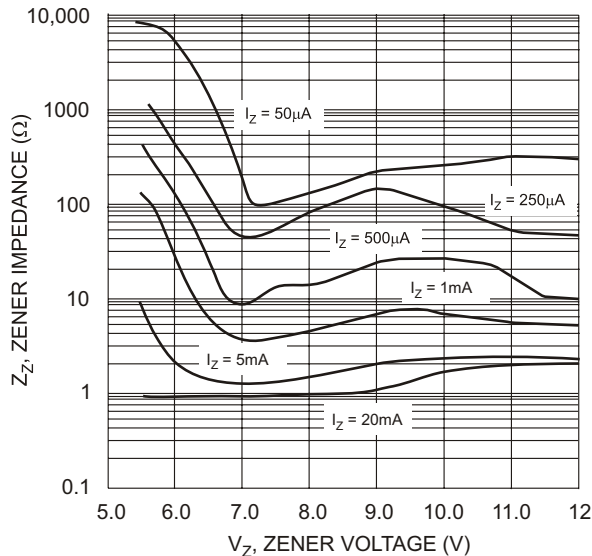


Fig. 10 Typical Zener Impedance Characteristics, DDZX5V6BW - DDZX12CW

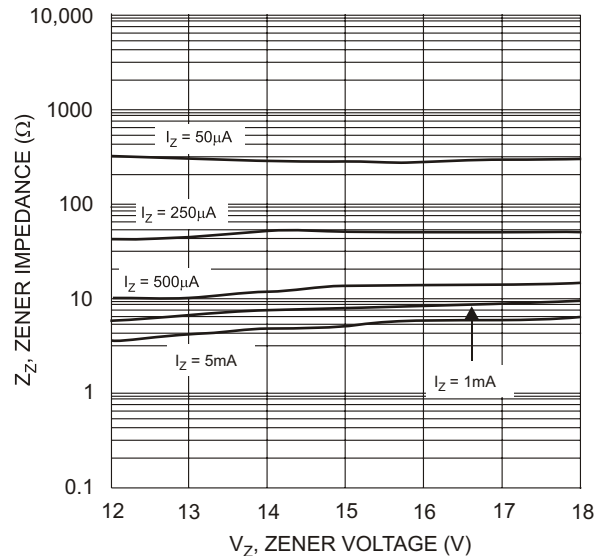


Fig. 11 Typical Zener Impedance Characteristics, DDZX12CW - DDZX18CW

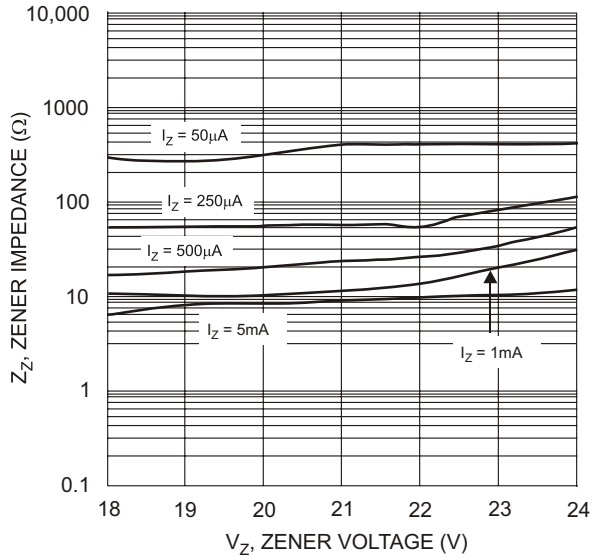


Fig. 12 Typical Zener Impedance Characteristics, DDZX18CW - DDZX24CW

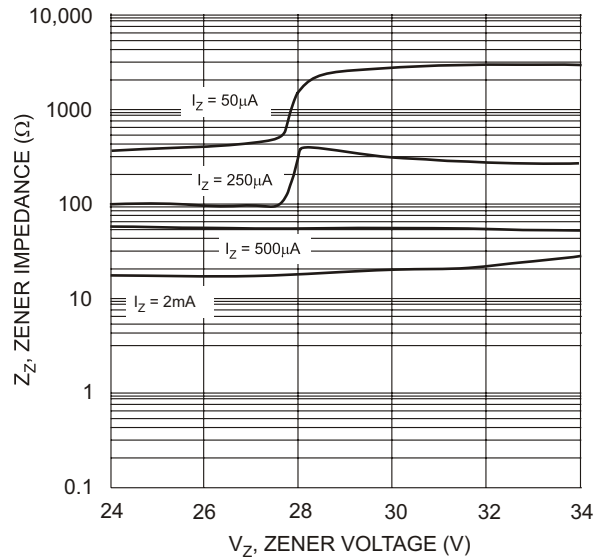


Fig. 13 Typical Zener Impedance Characteristics, DDZX24CW - DDZX33W

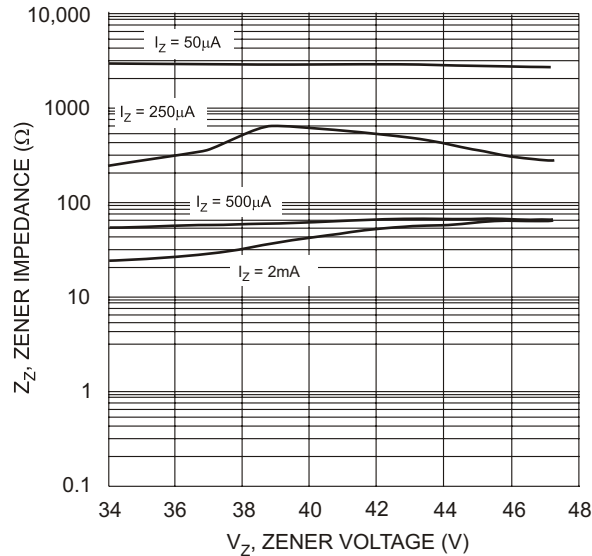


Fig. 14 Typical Zener Impedance Characteristics, DDZX36W - DDZX47W

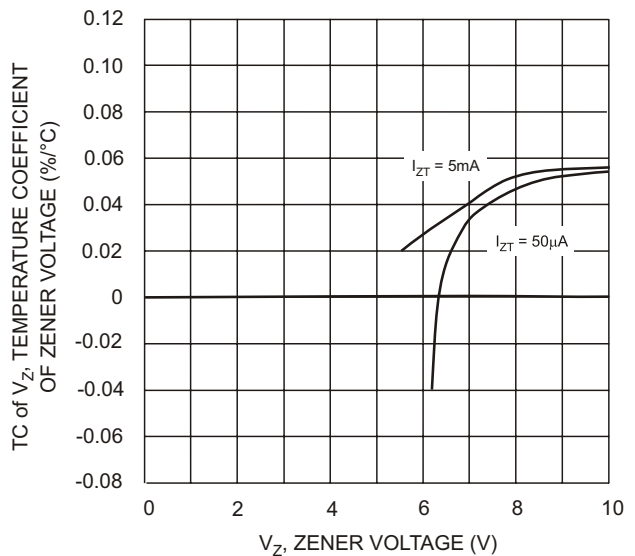


Fig. 15 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX6V2BW - DDZX10CW

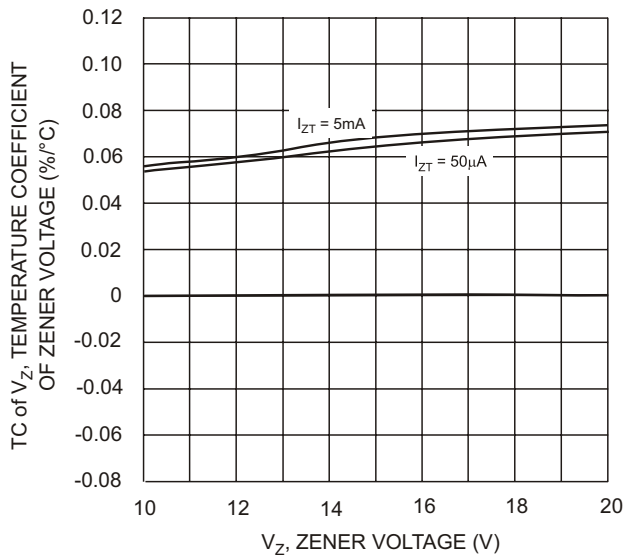


Fig. 16 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX10CW - DDZX20CW

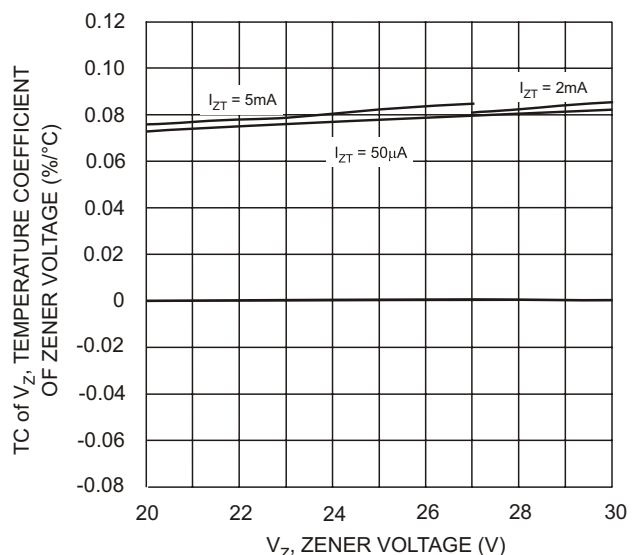


Fig. 17 Typical Temperature Coefficient of Zener Voltage, DDZX20CW - DDZX30DW

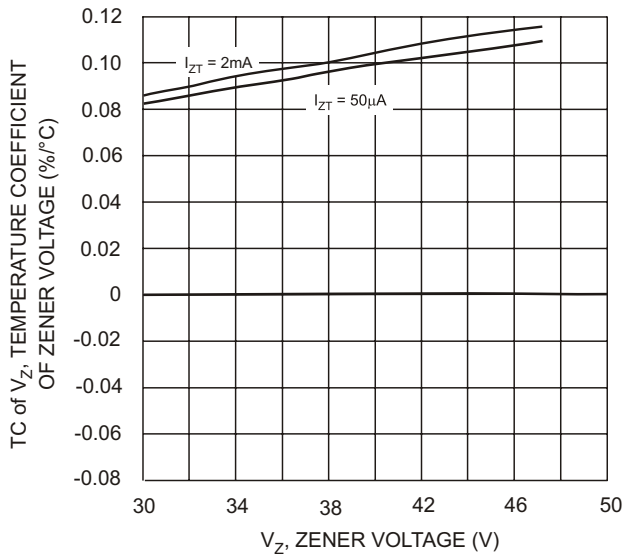


Fig. 18 Typical Temperature Coefficient of Zener Voltage, DDZX30DW - DDZX47W

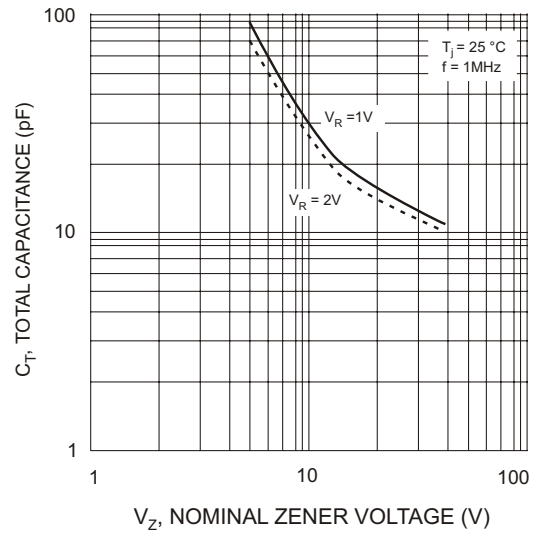


Fig. 19 Total Capacitance vs Nominal Zener Voltage