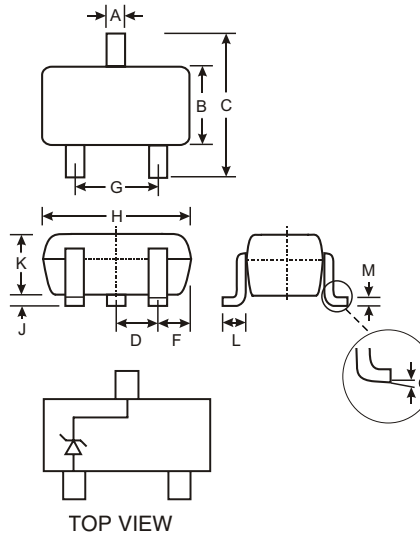


Features

- 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 |
| 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 | 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>.

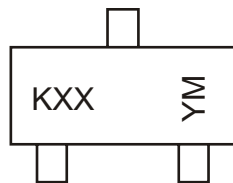
Ordering Information (Note 3)

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

* Example: The part number for the 6.2 Volt device would be DDZX9691W-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_A = 25°C unless otherwise specified

Table 1

| Type Number | Type Code | Zener Voltage Range (Note 4) | | | | Maximum Reverse Leakage Current (Note 5) | |
|-------------|-----------|----------------------------------|---------|---------|-----------------|--|------|
| | | V _Z @ I _{ZT} | | | I _{ZT} | I _R @ V _R | |
| | | Nom (V) | Min (V) | Max (V) | μA | μA | V |
| DDZX9682W | HA | 2.7 | 2.565 | 2.835 | 50 | 1 | 1 |
| DDZX9683W | HB | 3.0 | 2.85 | 3.15 | 50 | 0.8 | 1 |
| DDZX9684W | HC | 3.3 | 3.13 | 3.47 | 50 | 7.5 | 1.5 |
| DDZX9685W | HD | 3.6 | 3.42 | 3.78 | 50 | 7.5 | 2 |
| DDZX9686W | HE | 3.9 | 3.70 | 4.10 | 50 | 5 | 2 |
| DDZX9687W | HF | 4.3 | 4.09 | 4.52 | 50 | 4 | 2 |
| DDZX9688W | HG | 4.7 | 4.47 | 4.94 | 50 | 5 | 3 |
| DDZX9689W | HH | 5.1 | 4.85 | 5.36 | 50 | 5 | 3 |
| DDZX9690W | HJ | 5.6 | 5.32 | 5.88 | 50 | 2 | 4 |
| DDZX9691W | HK | 6.2 | 5.89 | 6.51 | 50 | 1 | 5 |
| DDZX9692W | HL | 6.8 | 6.46 | 7.14 | 50 | 0.1 | 5.1 |
| DDZX9693W | HM | 7.5 | 7.13 | 7.88 | 50 | 0.1 | 5.7 |
| DDZX9694W | HN | 8.2 | 7.79 | 8.61 | 50 | 0.1 | 6.2 |
| DDZX9696W | HP | 9.1 | 8.65 | 9.56 | 50 | 0.1 | 6.9 |
| DDZX9697W | HQ | 10 | 9.50 | 10.50 | 50 | 0.1 | 7.6 |
| DDZX9698W | HR | 11 | 10.45 | 11.55 | 50 | 0.05 | 8.4 |
| DDZX9699W | HS | 12 | 11.40 | 12.60 | 50 | 0.05 | 9.1 |
| DDZX9700W | HT | 13 | 12.35 | 13.65 | 50 | 0.05 | 9.8 |
| DDZX9701W | HU | 14 | 13.30 | 14.70 | 50 | 0.05 | 10.6 |
| DDZX9702W | HV | 15 | 14.25 | 15.75 | 50 | 0.05 | 11.4 |
| DDZX9703W | HW | 16 | 15.20 | 16.80 | 50 | 0.05 | 12.1 |
| DDZX9705W | HY | 18 | 17.10 | 18.90 | 50 | 0.05 | 13.6 |
| DDZX9707W | MD | 20 | 19.00 | 21.00 | 50 | 0.05 | 15.2 |
| DDZX9708W | ME | 22 | 20.90 | 23.10 | 50 | 0.05 | 16.7 |
| DDZX9709W | MF | 24 | 22.80 | 25.20 | 50 | 0.05 | 18.2 |
| DDZX9711W | MH | 27 | 25.65 | 28.35 | 50 | 0.05 | 20.4 |
| DDZX9712W | MJ | 28 | 26.60 | 29.40 | 50 | 0.05 | 21.2 |
| DDZX9713W | MK | 30 | 28.50 | 31.50 | 50 | 0.05 | 22.8 |
| DDZX9714W | ML | 33 | 31.35 | 34.65 | 50 | 0.05 | 25.0 |
| DDZX9715W | MM | 36 | 34.20 | 37.80 | 50 | 0.05 | 27.3 |
| DDZX9716W | MN | 39 | 37.05 | 40.95 | 50 | 0.05 | 29.6 |

Notes: 4. Nominal Zener voltage is measured with the device junction in thermal equilibrium at T_T = 30°C ±1°C.
5. Short duration pulse test used to minimize self-heating effect.

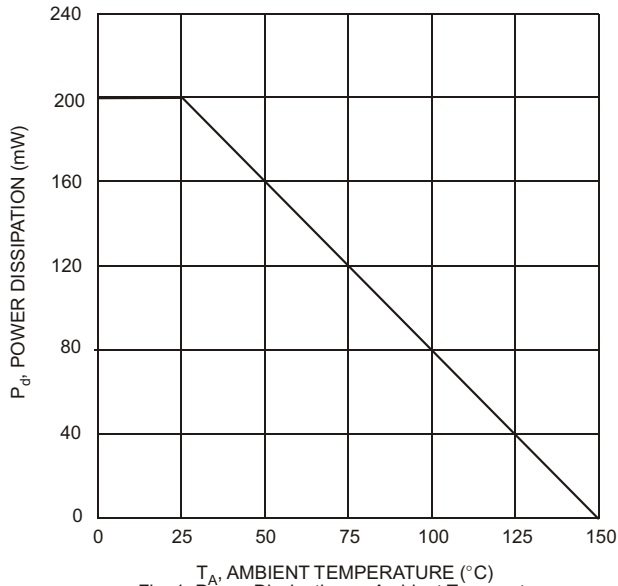


Fig. 1 Power Dissipation vs Ambient Temperature

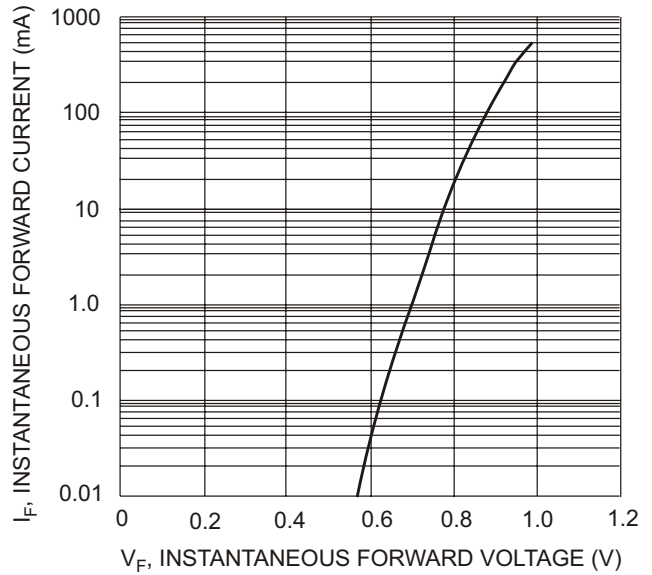


Fig. 2 Typical Forward Characteristics

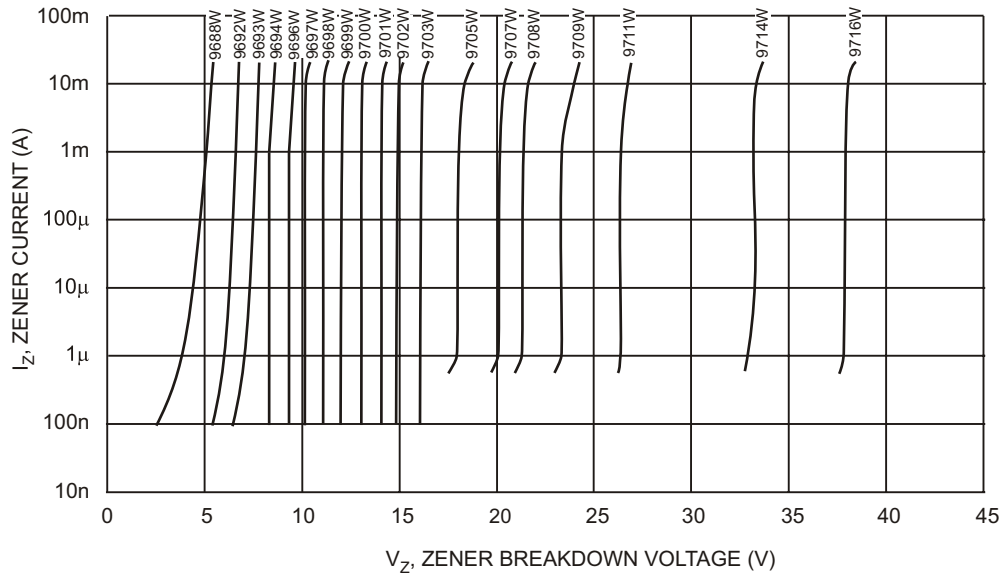


Fig. 3 Typical Reverse Characteristics

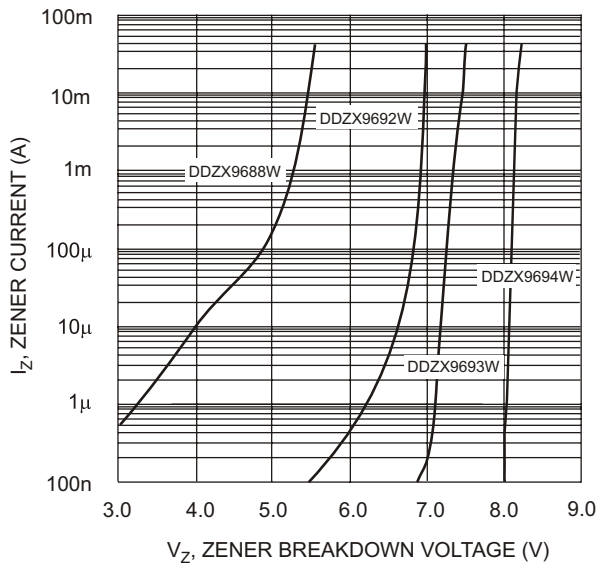


Fig. 4 Typical Reverse Characteristics, DDZX9688W - DDZX9694W

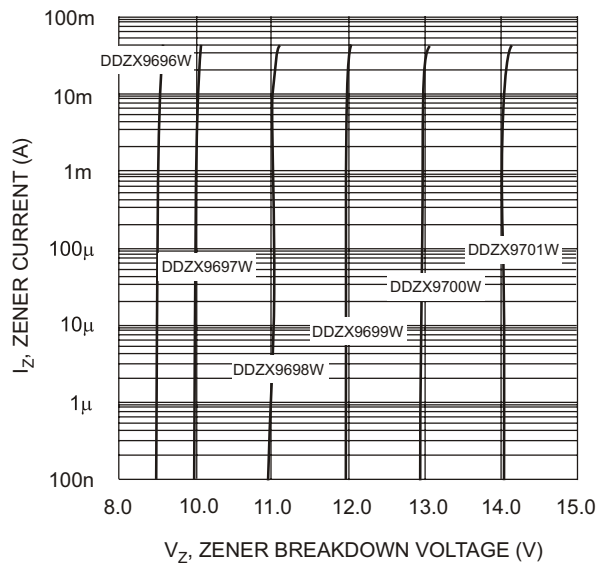


Fig. 5 Typical Reverse Characteristics, DDZX9696W - DDZX9701W

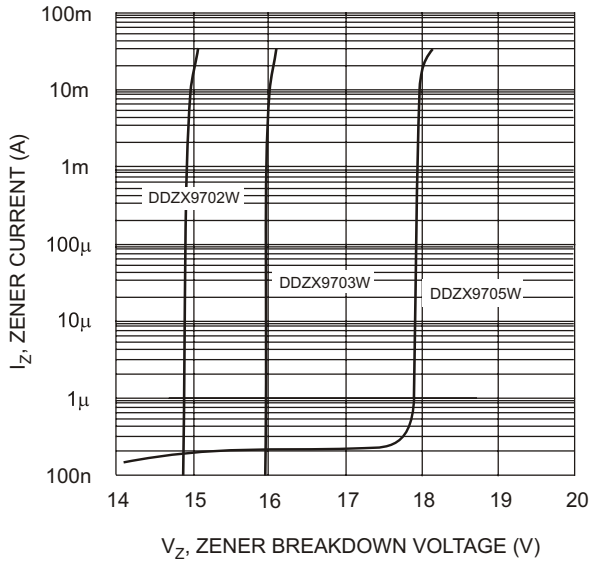


Fig. 6 Typical Reverse Characteristics, DDZX9702W - DDZX9705W

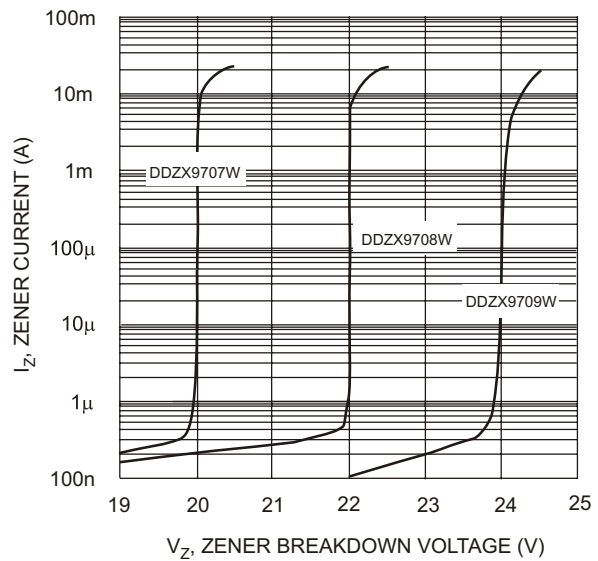


Fig. 7 Typical Reverse Characteristics, DDZX9707W - DDZX9709W

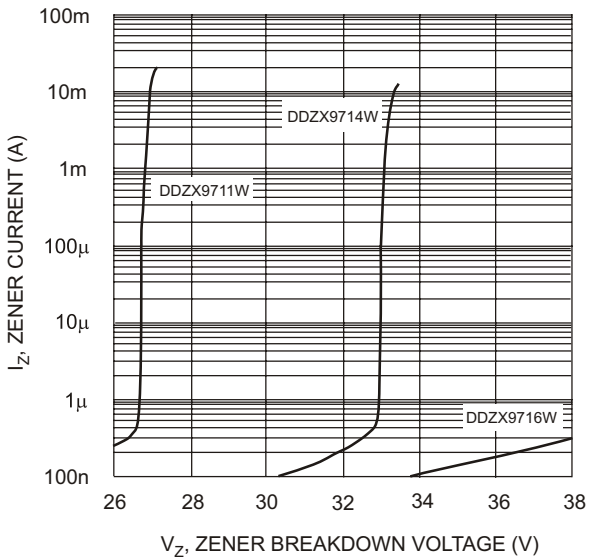


Fig. 8 Typical Reverse Characteristics, DDZX9711W - DDZX9715W

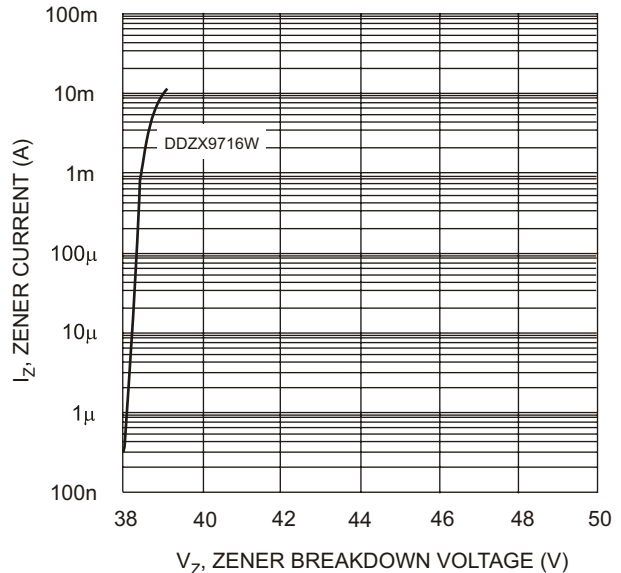


Fig. 9 Typical Reverse Characteristics, DDZX9716W

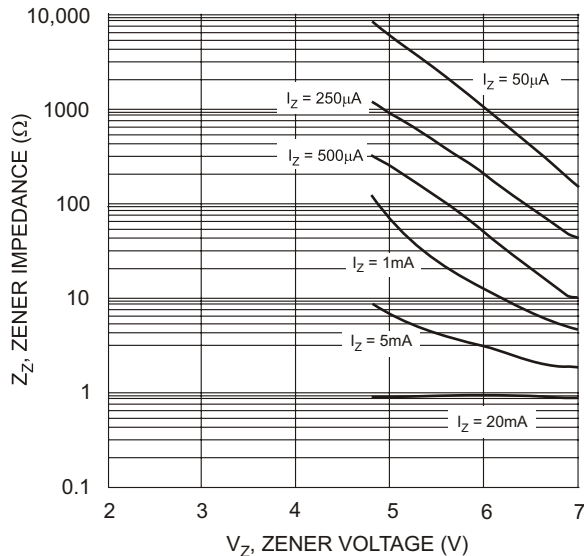


Fig. 10 Typical Zener Impedance Characteristics, DDZX9688W - DDZX9692W

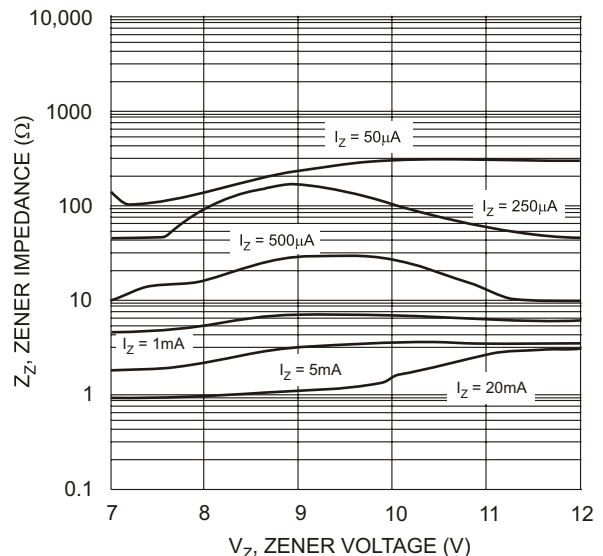


Fig. 11 Typical Zener Impedance Characteristics, DDZX9693W - DDZX9699W

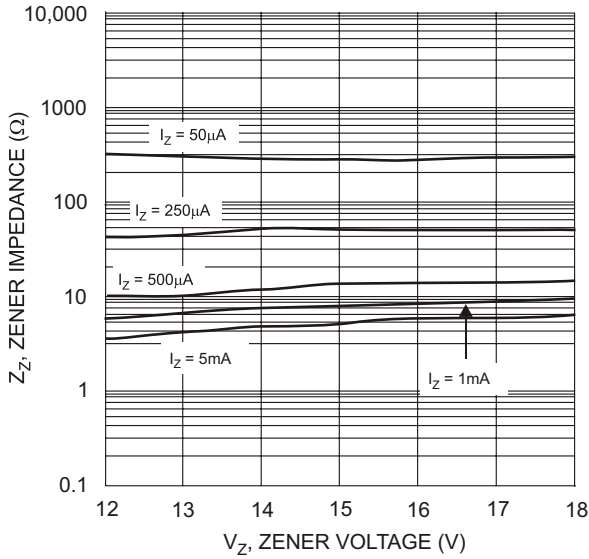


Fig. 12 Typical Zener Impedance Characteristics, DDZX9699W - DDZX9705W

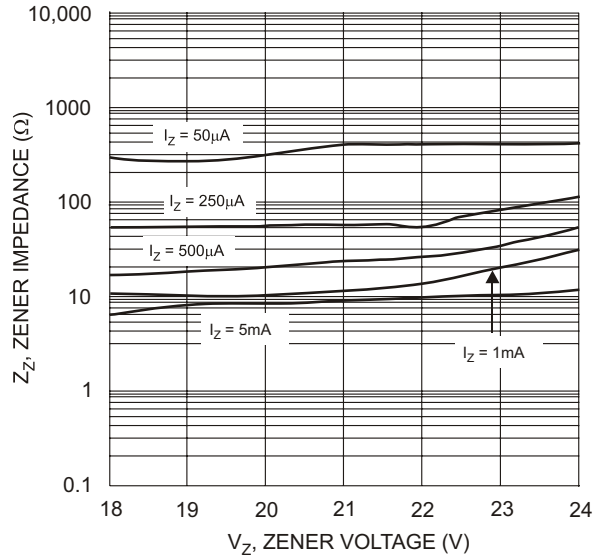


Fig. 13 Typical Zener Impedance Characteristics, DDZX9705W - DDZX9709W

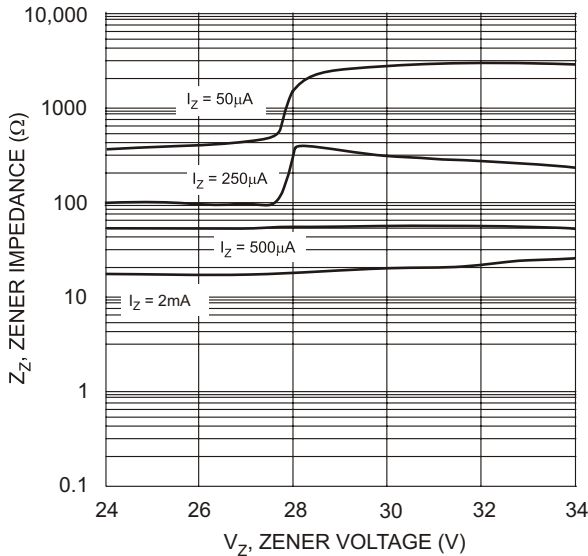


Fig. 14 Typical Zener Impedance Characteristics, DDZX9709W - DDZX9714W

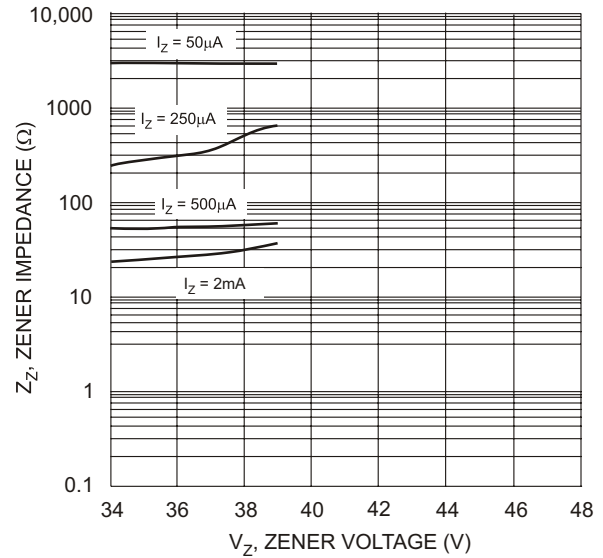


Fig. 15 Typical Zener Impedance Characteristics, DDZX9715W - DDZX9716W

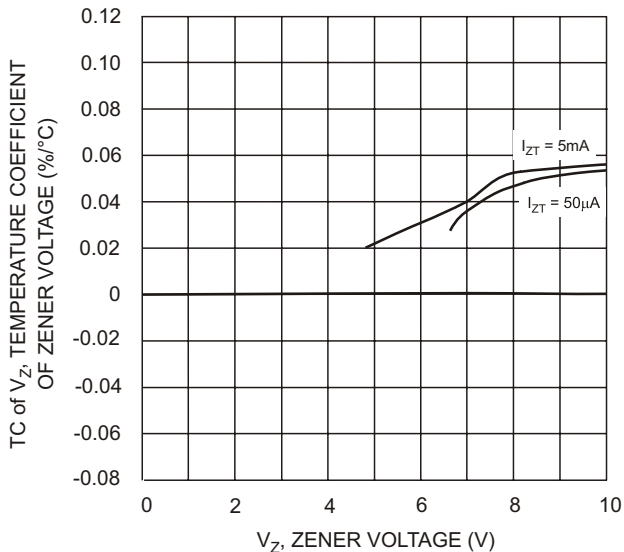


Fig. 16 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX9692W - DDZX9697W

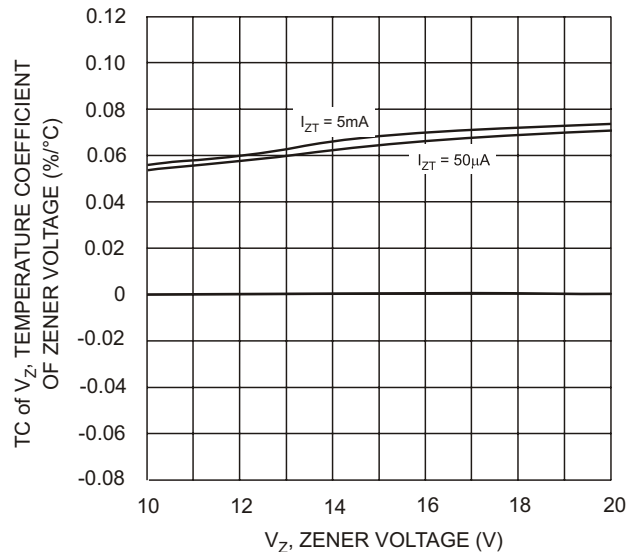


Fig. 17 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX9697W - DDZX9707W

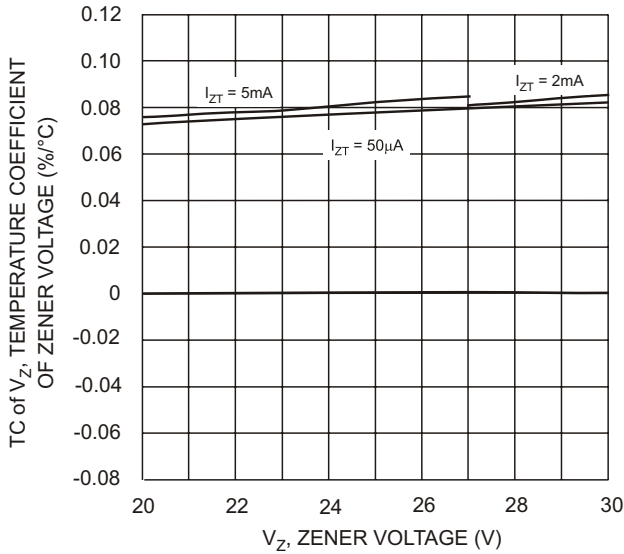


Fig. 18 Typical Temperature Coefficient of Zener Voltage, DDZX9707W - DDZX9713W

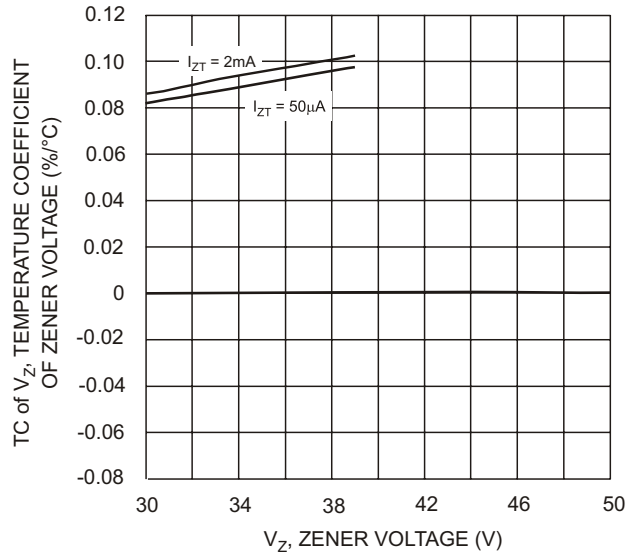


Fig. 19 Typical Temperature Coefficient of Zener Voltage, DDZ9713W - DDZ9716W

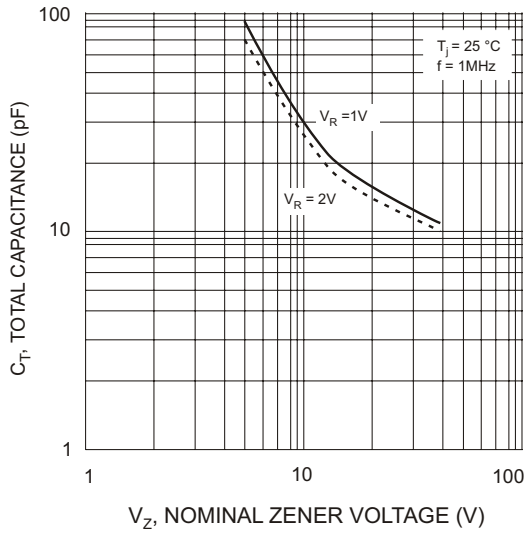


Fig. 20 Total Capacitance vs Nominal Zener Voltage