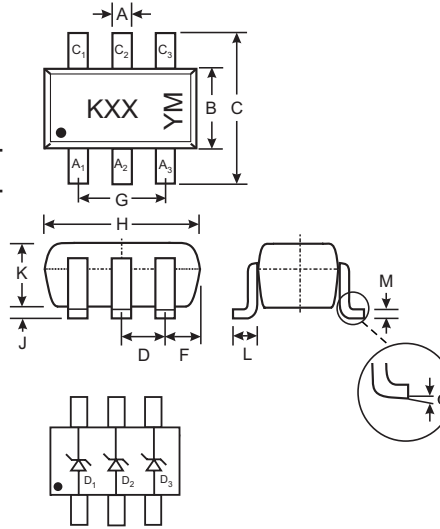


Features

- 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: SOT-363
- 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
- Orientation: See Diagram
- Marking & Type Code Information: See Electrical Specifications Table
- Ordering Information: See Last Page
- Weight: 0.006 grams (approximate)



| SOT-363 | | |
|----------------------|--------------|------|
| Dim | Min | Max |
| A | 0.10 | 0.30 |
| B | 1.15 | 1.35 |
| C | 2.00 | 2.20 |
| D | 0.65 Nominal | |
| F | 0.30 | 0.40 |
| H | 1.80 | 2.20 |
| J | — | 0.10 |
| K | 0.90 | 1.00 |
| L | 0.25 | 0.40 |
| M | 0.10 | 0.25 |
| 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 | $^\circ\text{C}$ |

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 | $^\circ\text{C/W}$ |

Notes: 1. Device mounted on FR-4 PC board with recommended pad layout, which can be found on our web 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 | uA | V |
| DDZX5V1BTS | KM | 4.94 | 5.20 | 20 | 17 | 480 | 1 | 5 | 1.5 |
| DDZX5V6BTS | KN | 5.45 | 5.73 | 20 | 11 | 400 | 1 | 0.5 | 2.5 |
| DDZX6V2BTS | KO | 5.96 | 6.27 | 20 | 7 | 150 | 1 | 0.5 | 4.0 |
| DDZX6V8CTS | YP | 6.66 | 7.01 | 20 | 5 | 150 | 0.5 | 0.1 | 5.0 |
| DDZX7V5CTS | YQ | 7.29 | 7.67 | 20 | 6 | 120 | 0.5 | 0.1 | 6.0 |
| DDZX8V2CTS | YR | 8.03 | 8.45 | 20 | 8 | 120 | 0.5 | 0.1 | 6.5 |
| DDZX9V1CTS | YS | 8.83 | 9.30 | 20 | 8 | 120 | 0.5 | 0.1 | 7.0 |
| DDZX10CTS | YT | 9.70 | 10.20 | 20 | 8 | 120 | 0.5 | 0.1 | 8.0 |
| DDZX11CTS | YU | 10.82 | 11.38 | 10 | 10 | 120 | 0.5 | 0.1 | 8.4 |
| DDZX12CTS | YV | 11.74 | 12.35 | 10 | 12 | 110 | 0.5 | 0.1 | 9.1 |
| DDZX13BTS | KW | 12.55 | 13.21 | 10 | 14 | 110 | 0.5 | 0.1 | 10.0 |
| DDZX14TS | GX | 13.65 | 14.35 | 10 | 16 | 110 | 0.5 | 0.05 | 11.0 |
| DDZX15TS | GY | 14.80 | 15.57 | 10 | 18 | 150 | 0.5 | 0.05 | 12.0 |
| DDZX16TS | YY | 15.69 | 16.51 | 10 | 18 | 150 | 0.5 | 0.05 | 12.0 |
| DDZX18CTS | YZ | 17.42 | 18.33 | 10 | 23 | 150 | 0.5 | 0.05 | 14.0 |
| DDZX20CTS | PJ | 19.23 | 20.22 | 10 | 28 | 200 | 0.5 | 0.05 | 15.0 |
| DDZX22DTS | 2K | 21.52 | 22.63 | 5 | 30 | 200 | 0.5 | 0.05 | 17.0 |
| DDZX24CTS | PL | 23.12 | 24.31 | 5 | 35 | 200 | 0.5 | 0.05 | 19.0 |
| DDZX27DTS | 2M | 26.29 | 27.64 | 5 | 45 | 250 | 0.5 | 0.05 | 21.0 |
| DDZX30DTS | 2N | 29.02 | 30.51 | 5 | 55 | 250 | 0.5 | 0.05 | 23.0 |
| DDZX33TS | RP | 32.14 | 33.79 | 5 | 75 | 250 | 0.5 | 0.05 | 27.0 |
| DDZX36TS | ZQ | 35.36 | 37.19 | 5 | 85 | 250 | 0.5 | 0.05 | 30.0 |
| DDZX39FTS | 5Q | 38.02 | 39.98 | 5 | 85 | 250 | 0.5 | 0.05 | 30.0 |
| DDZX43TS | ZR | 42.14 | 43.86 | 5 | 90 | — | — | 0.05 | 33.0 |

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

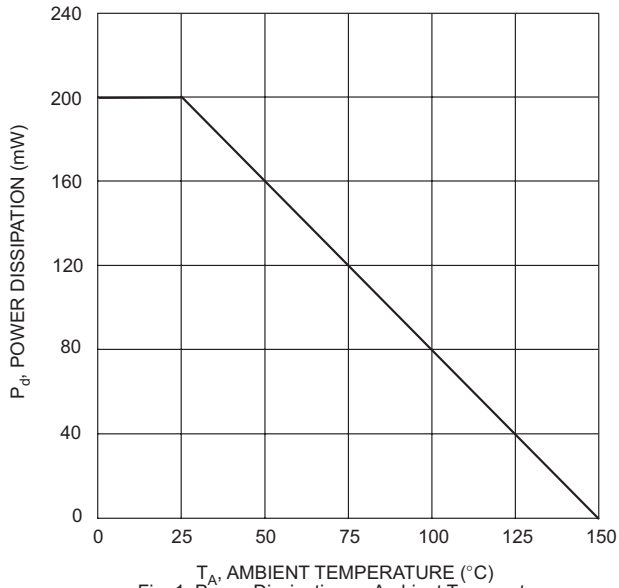


Fig. 1 Power Dissipation vs Ambient Temperature

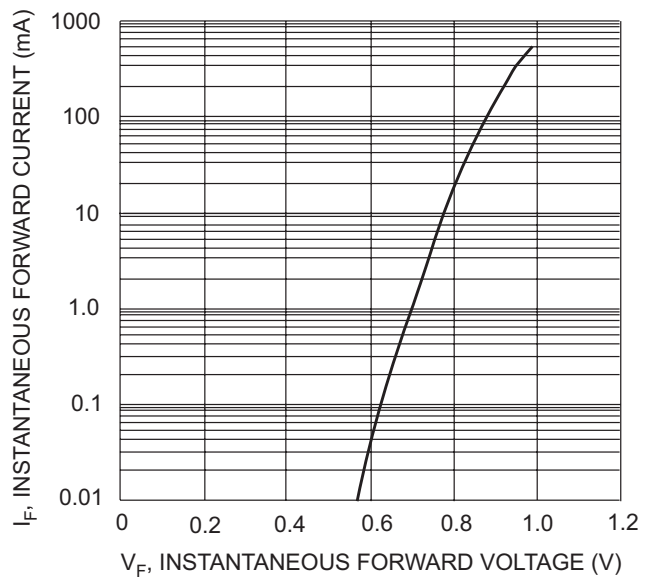


Fig. 2 Typical Forward Characteristics

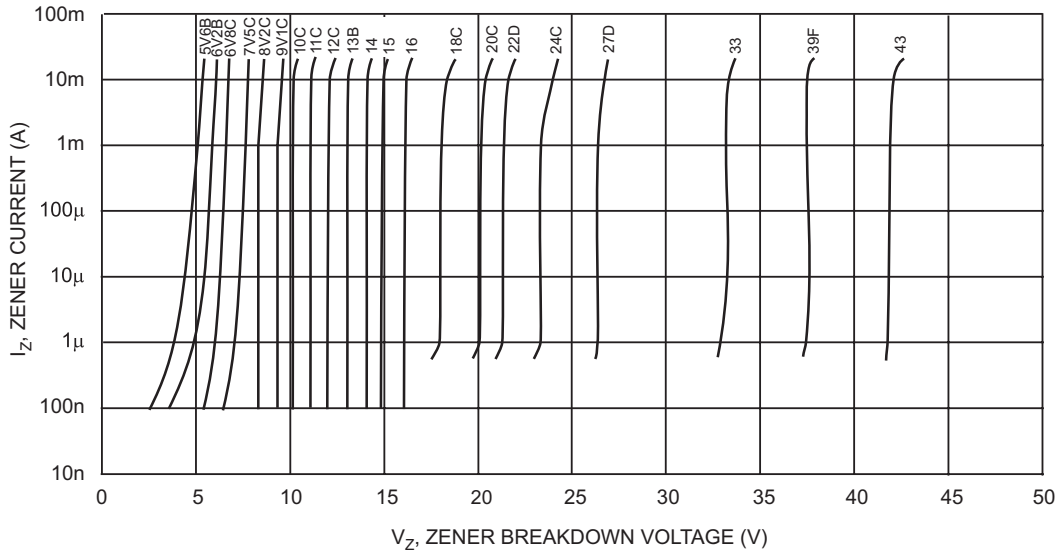


Fig. 3 Typical Reverse Characteristics

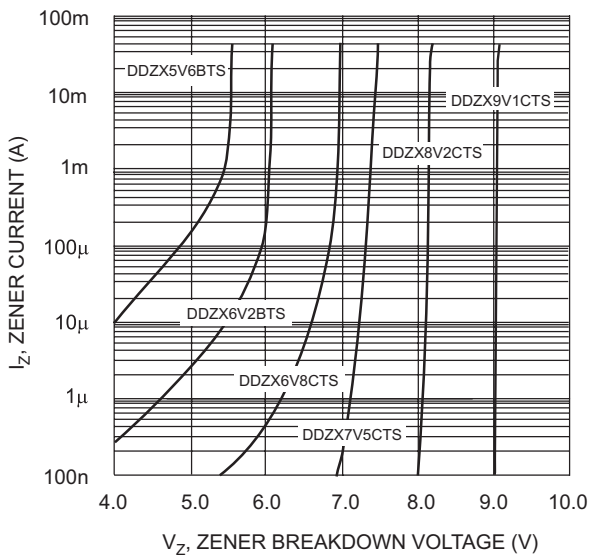


Fig. 4 Typical Reverse Characteristics, DDZX5V6BTS - DDZX9V1CTS

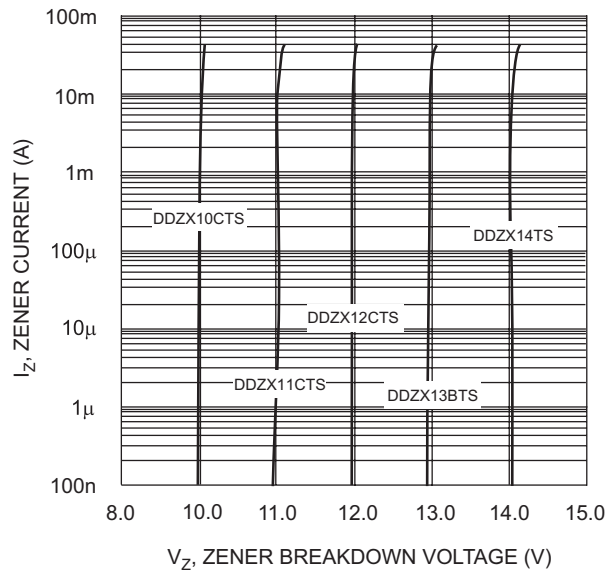


Fig. 5 Typical Reverse Characteristics, DDZX10CTS - DDZX14TS

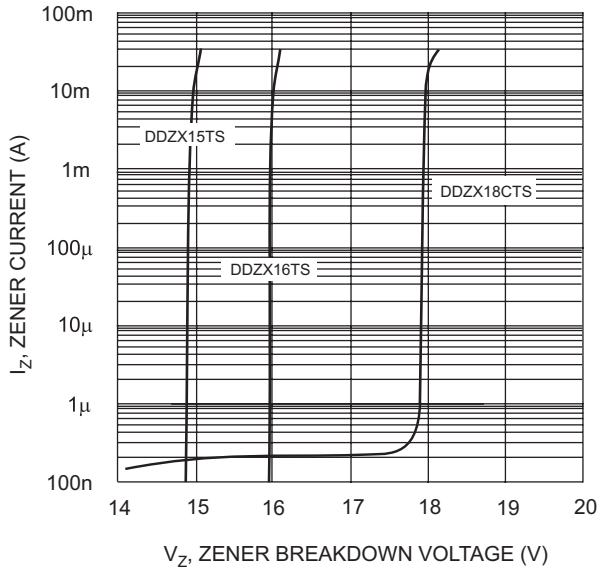


Fig. 6 Typical Reverse Characteristics, DDZX15TS - DDZX18CTS

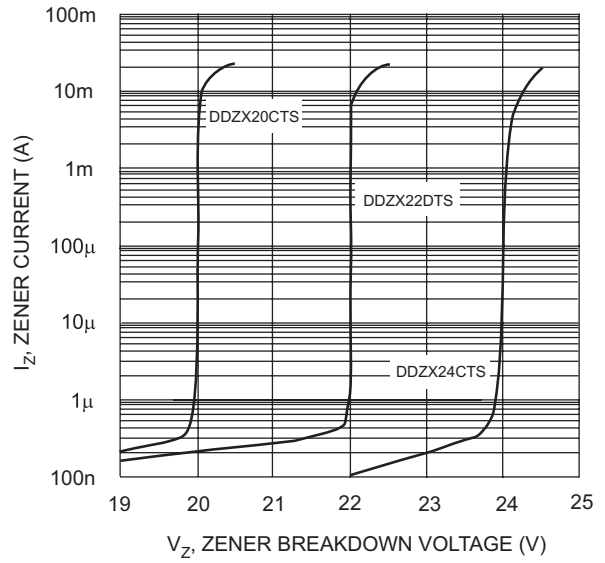


Fig. 7 Typical Reverse Characteristics, DDZX20CTS - DDZX24CTS

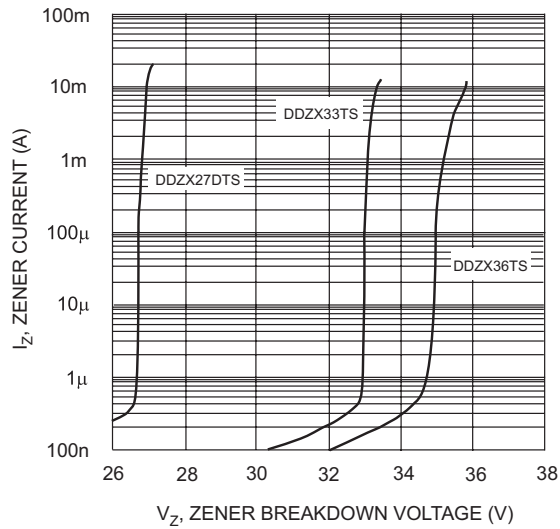


Fig. 8 Typical Reverse Characteristics, DDZX27DTS - DDZX36TS

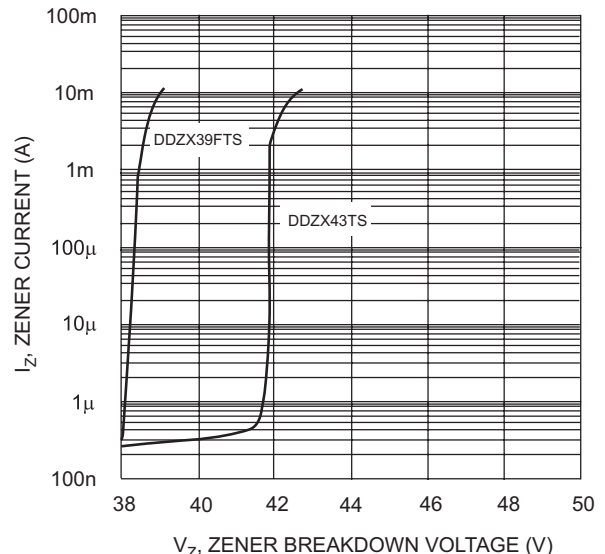


Fig. 9 Typical Reverse Characteristics, DDZX39FTS - DDZX43TS

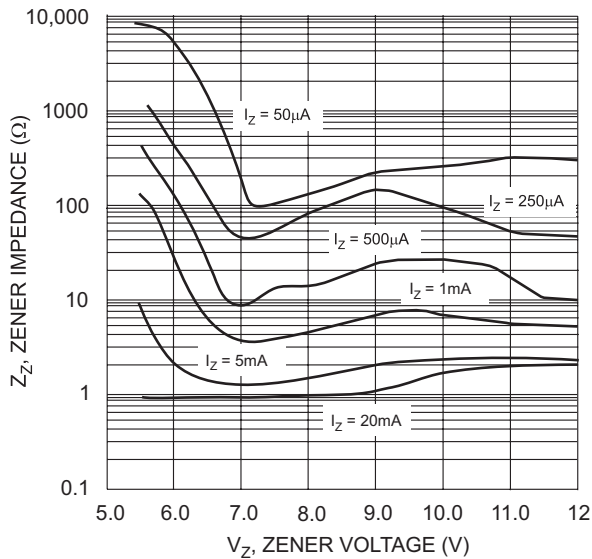


Fig. 10 Typical Zener Impedance Characteristics, DDZX5V6BTS - DDZX12CTS

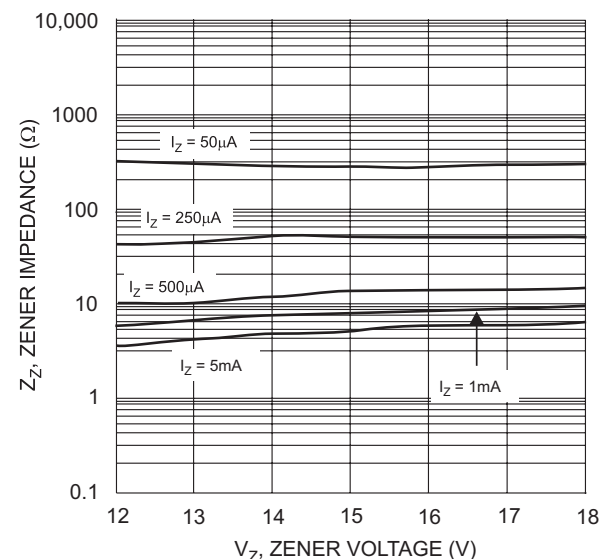


Fig. 11 Typical Zener Impedance Characteristics, DDZX12CTS - DDZX18CTS

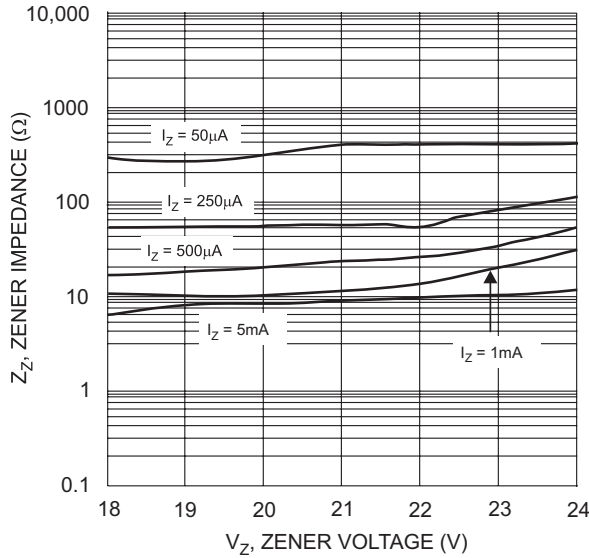


Fig. 12 Typical Zener Impedance Characteristics, DDZX18CTS - DDZX24CTS

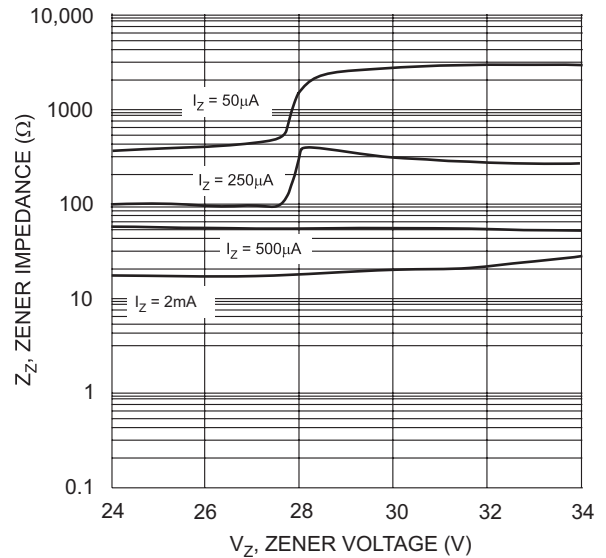


Fig. 13 Typical Zener Impedance Characteristics, DDZX24CTS - DDZX33TS

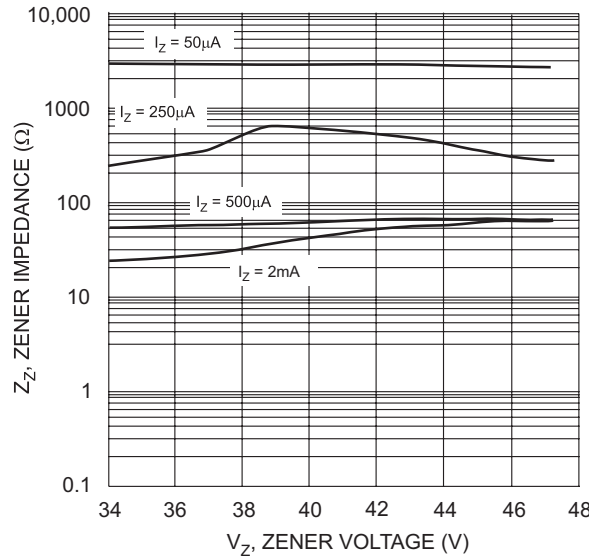


Fig. 14 Typical Zener Impedance Characteristics, DDZX36TS - DDZX43TS

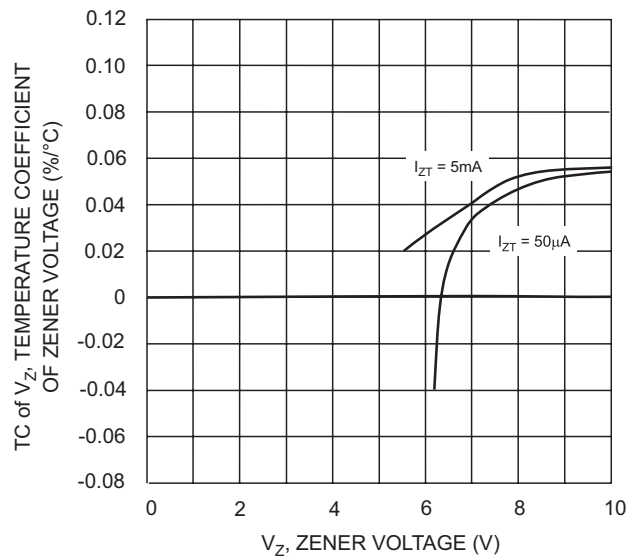


Fig. 15 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX6V62TS-DDZX10CTS

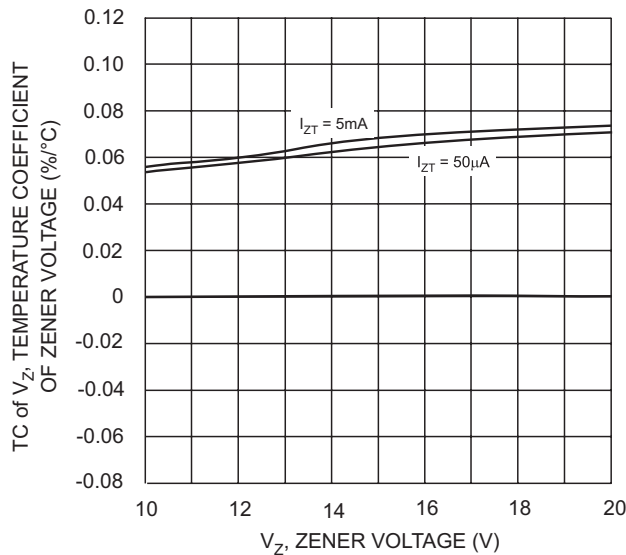


Fig. 16 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX10CTS-DDZX20CTS

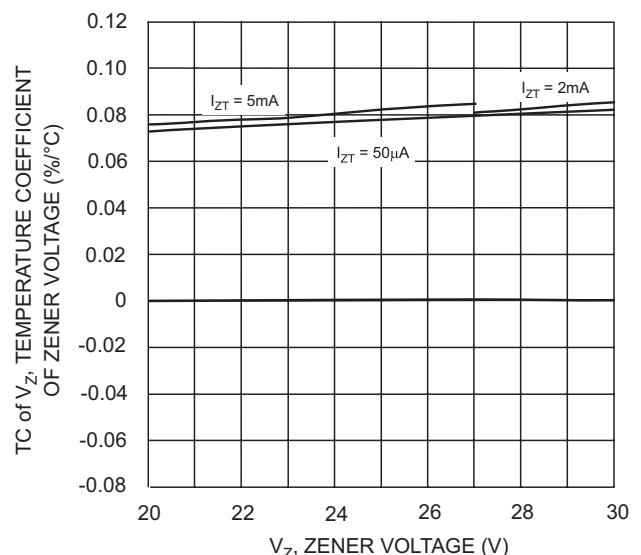


Fig. 17 Typical Temperature Coefficient of Zener Voltage, DDZX20CTS-DDZX30DTS

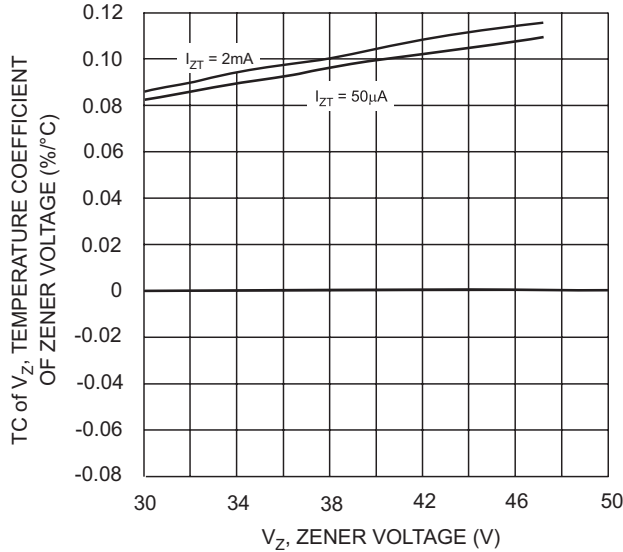


Fig. 18 Typical Temperature Coefficient of Zener Voltage, DDZX30DTS-DDZX43TS

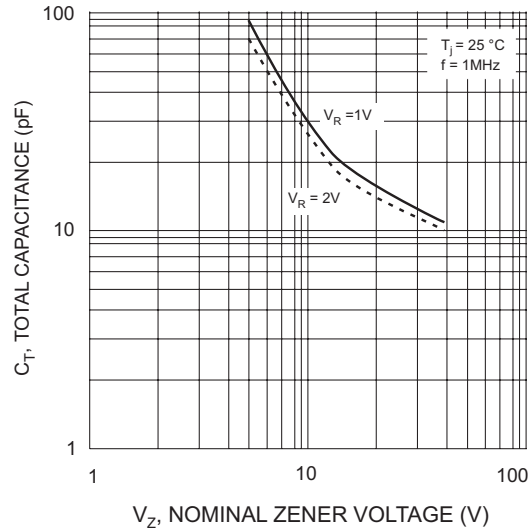


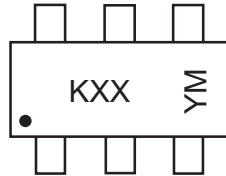
Fig. 19 Total Capacitance vs Nominal Zener Voltage

Ordering Information (Note 6)

| Device | Packaging | Shipping |
|------------------|-----------|------------------|
| (Type Number)-7* | SOT-363 | 3000/Tape & Reel |

* Example: The part number for the 6.2 Volt device would be DDZX6V2BTS-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



KXX = Product Type Marking Code (See Table 1)
 YM = Date Code Marking
 Y = Year ex: T = 2006
 M = Month ex: 9 = September

Date Code Key

| Year | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|------|------|------|------|------|------|------|------|
| Code | T | U | V | W | X | Y | Z |

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

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