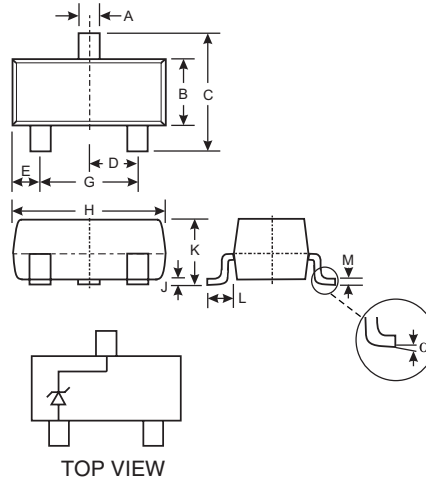


### Features

- Very Sharp Breakdown Characteristics
- 300mW Power Dissipation on FR-4 PCB
- Very Tight Tolerance on  $V_Z$
- Ideally Suited for Automated Assembly Processes
- Very Low Leakage Current
- **Lead Free By Design/RoHS Compliant (Note 7)**
- **Qualified to AEC-Q101 Standards for High Reliability**

### Mechanical Data

- Case: SOT-23
- 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: See Diagram
- Marking & Type Code Information: See Electrical Specifications Table
- Ordering Information: See Last Page
- Weight: 0.008 grams (approximate)



SOT-23		
Dim	Min	Max
A	0.37	0.51
B	1.20	1.40
C	2.30	2.50
D	0.89	1.03
E	0.45	0.60
G	1.78	2.05
H	2.80	3.00
J	0.013	0.10
K	0.903	1.10
L	0.45	0.61
M	0.085	0.180
$\alpha$	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
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
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Power Dissipation (Note 1)	$P_d$	300	mW

Note: 1. Device mounted on FR-4 PCB with recommended pad layout, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>.

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

**Table 1**

Type Number	Marking Code	Zener Voltage Range (Notes 2, 3)			Maximum Zener Impedance (Note 4)			Maximum Reverse Current (Note 5)	
		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
DDZX5V1B	KM	4.94	5.20	20	17	480	1	5	1.5
DDZX5V6B	KN	5.45	5.73	20	11	400	1	0.5	2.5
DDZX6V2B	KO	5.96	6.27	20	7	150	1	0.5	4.0
DDZX6V8C	YP	6.66	7.01	20	5	150	0.5	0.1	5.0
DDZX7V5C	YQ	7.29	7.67	20	6	120	0.5	0.1	6.0
DDZX8V2C	YR	8.03	8.45	20	8	120	0.5	0.1	6.5
DDZX9V1C	YS	8.83	9.30	20	8	120	0.5	0.1	7.0
DDZX10C	YT	9.70	10.20	20	8	120	0.5	0.1	8.0
DDZX11C	YU	10.82	11.38	10	10	120	0.5	0.1	8.4
DDZX12C	YV	11.74	12.35	10	12	110	0.5	0.1	9.1
DDZX13B	KW	12.55	13.21	10	14	110	0.5	0.1	10.0
DDZX14	GX	13.65	14.35	10	16	110	0.5	0.05	11.0
DDZX15	GY	14.80	15.57	10	18	150	0.5	0.05	12.0
DDZX16	YY	15.69	16.51	10	18	150	0.5	0.05	12.0
DDZX18C	YZ	17.42	18.33	10	23	150	0.5	0.05	14.0
DDZX20C	PJ	19.23	20.22	10	28	200	0.5	0.05	15.0
DDZX22D	2K	21.52	22.63	5	30	200	0.5	0.05	17.0
DDZX24C	PL	23.12	24.31	5	35	200	0.5	0.05	19.0
DDZX27D	2M	26.29	27.64	5	45	250	0.5	0.05	21.0
DDZX30D	2N	29.02	30.51	5	55	250	0.5	0.05	23.0
DDZX33	RP	32.14	33.79	5	75	250	0.5	0.05	27.0
DDZX36	ZQ	35.36	37.19	5	85	250	0.5	0.05	30.0
DDZX39F	5Q	38.02	39.98	5	85	250	0.5	0.05	30.0
DDZX43	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 pulse test used to minimize self-heating effect.

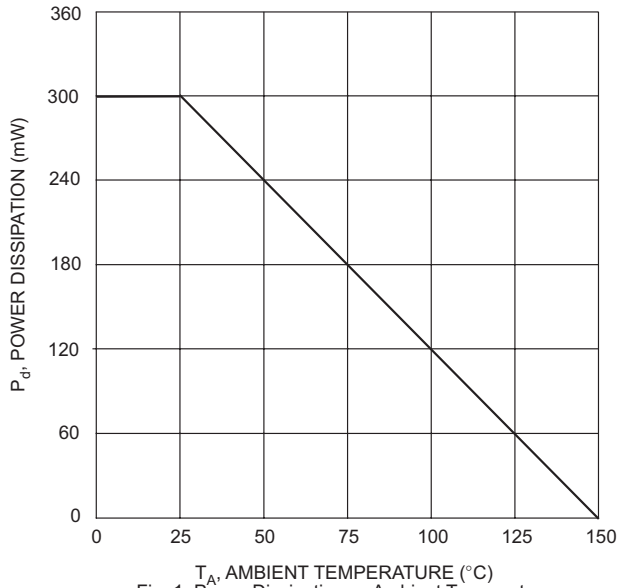


Fig. 1 Power Dissipation vs Ambient Temperature

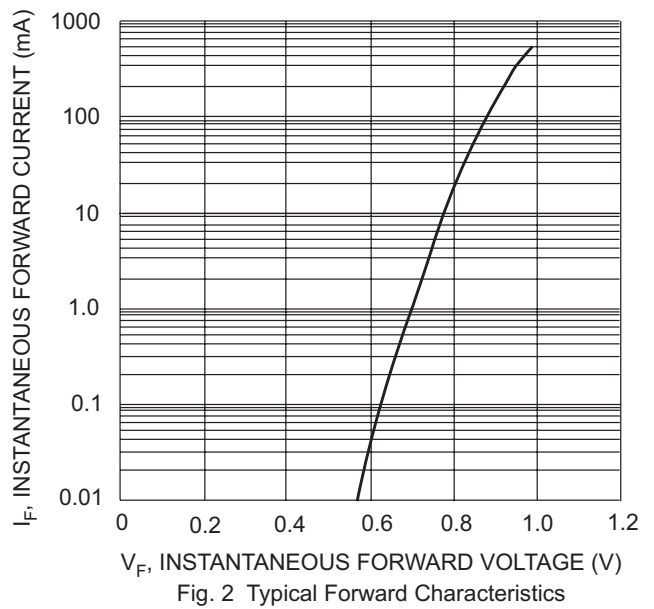


Fig. 2 Typical Forward Characteristics

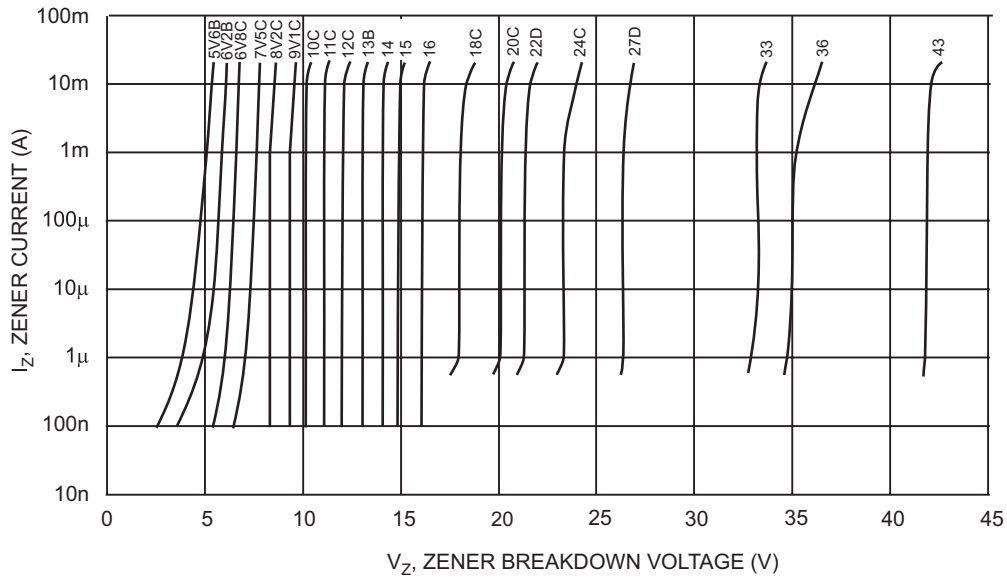


Fig. 3 Typical Reverse Characteristics

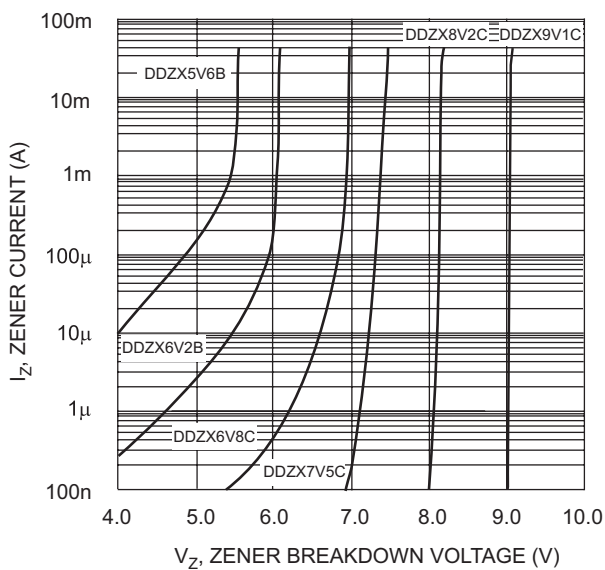


Fig. 4 Typical Reverse Characteristics, DDZX5V6B - DDZX9V1C

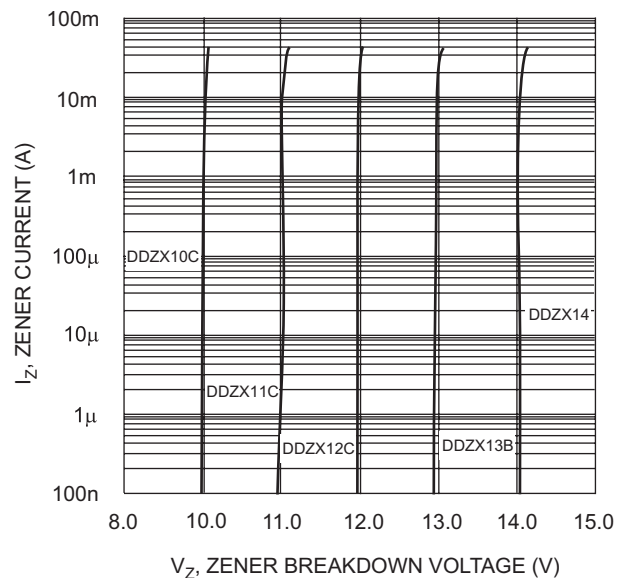


Fig. 5 Typical Reverse Characteristics, DDZX10C - DDZX14

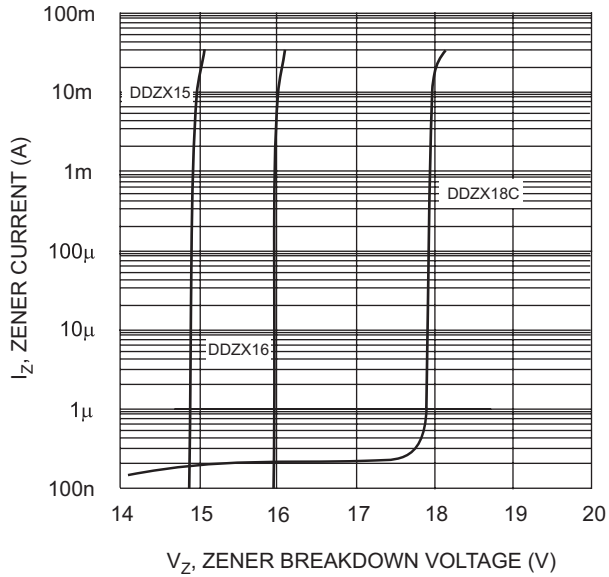


Fig. 6 Typical Reverse Characteristics, DDZX15 - DDZX18C

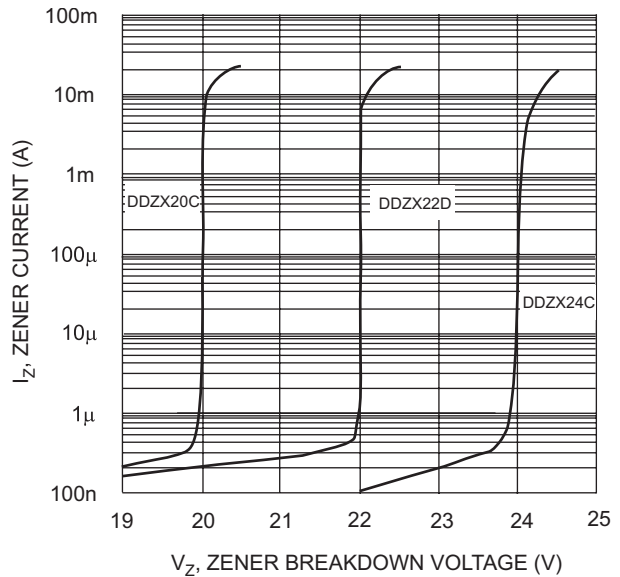


Fig. 7 Typical Reverse Characteristics, DDZX20C - DDZX24C

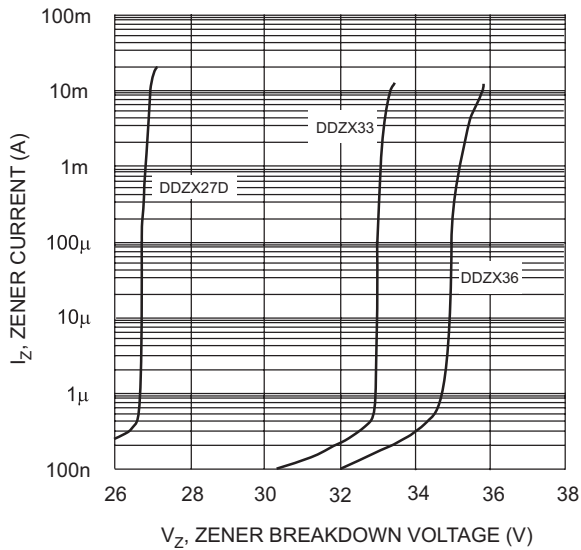


Fig. 8 Typical Reverse Characteristics, DDZX27D - DDZX36

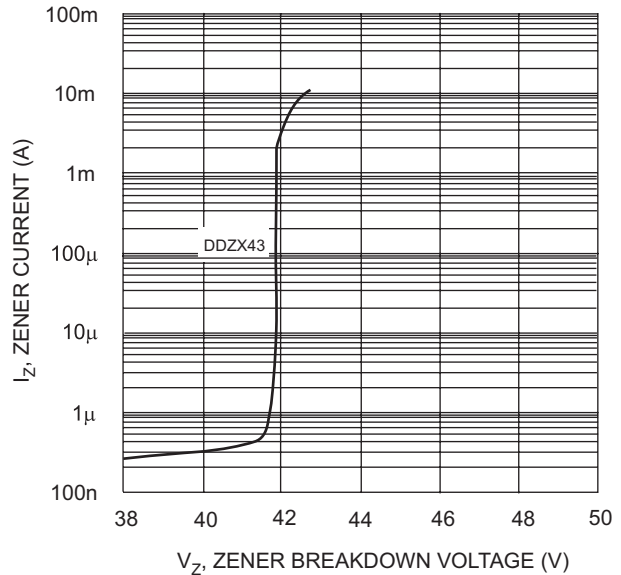


Fig. 9 Typical Reverse Characteristics, DDZX43

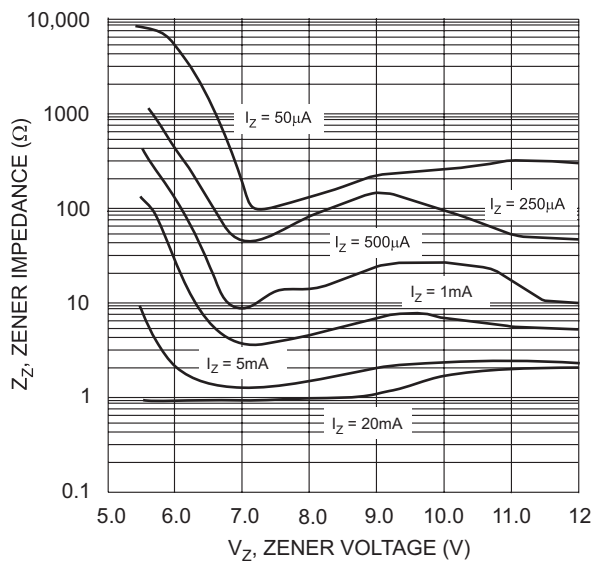


Fig. 10 Typical Zener Impedance Characteristics, DDZX5V6B - DDZX12C

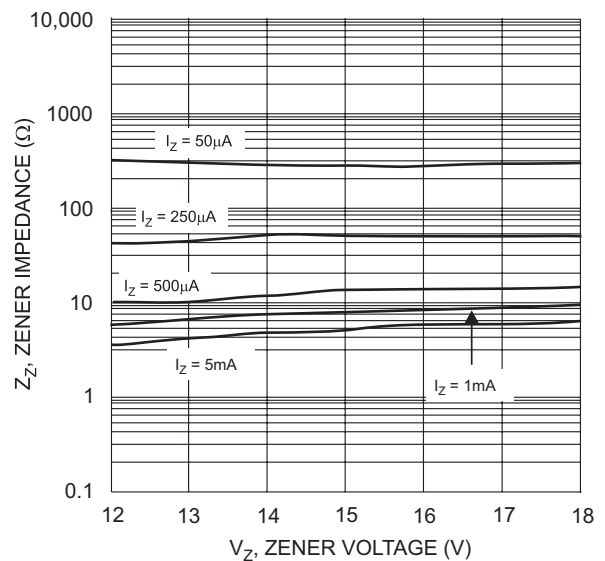


Fig. 11 Typical Zener Impedance Characteristics, DDZX12C - DDZX18C

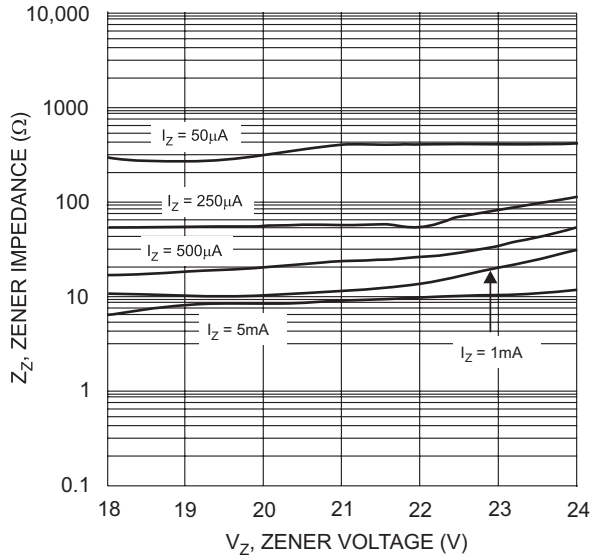


Fig. 12 Typical Zener Impedance Characteristics, DDZX18C - DDZX24C

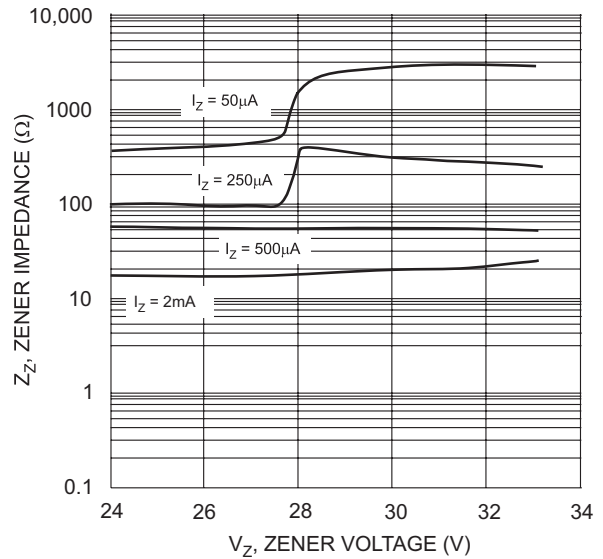


Fig. 13 Typical Zener Impedance Characteristics, DDZX24C - DDZX33

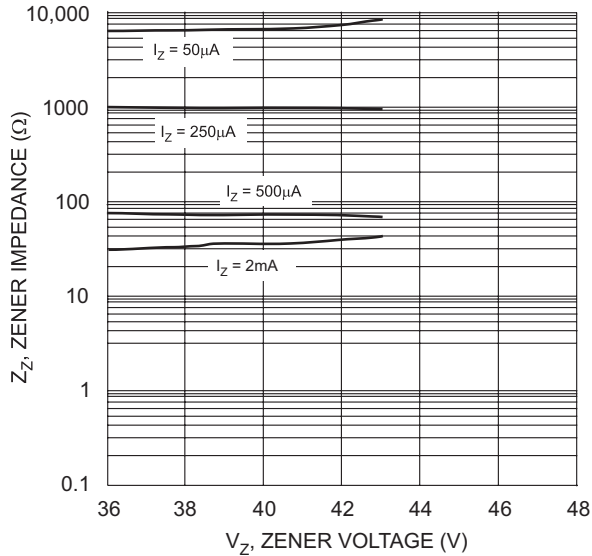


Fig. 14 Typical Zener Impedance Characteristics, DDZX36 - DDZX43

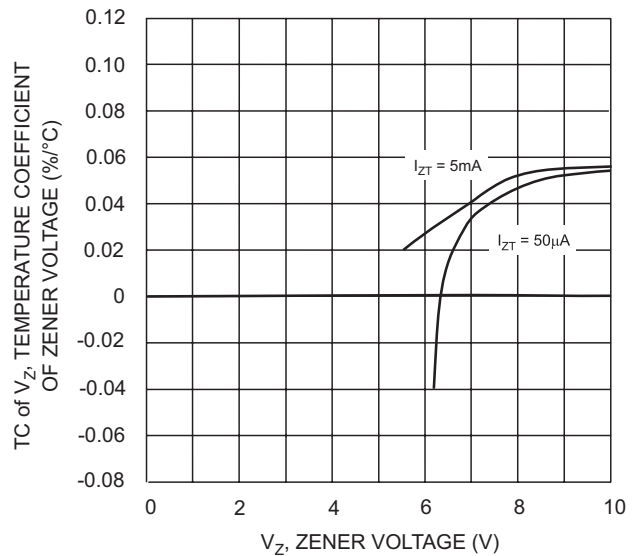


Fig. 15 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX6V2B-DDZX10C

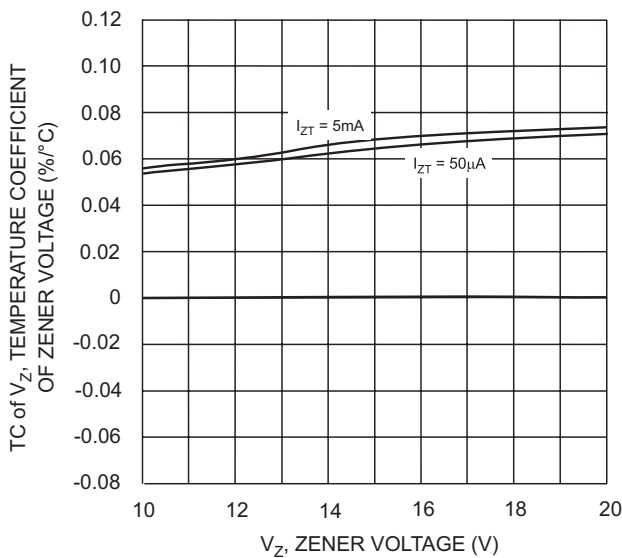


Fig. 16 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX10C-DDZX20C

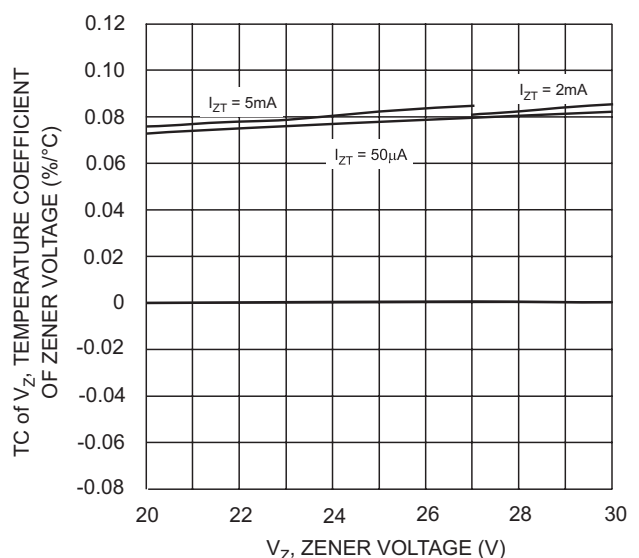


Fig. 17 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX20C-DDZX30D

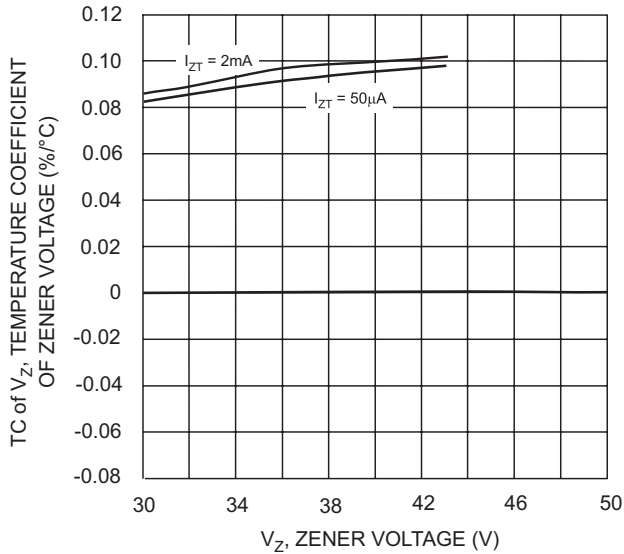


Fig. 18 Typical Temperature Coefficient of Zener Voltage, DDZX30D-DDZX43

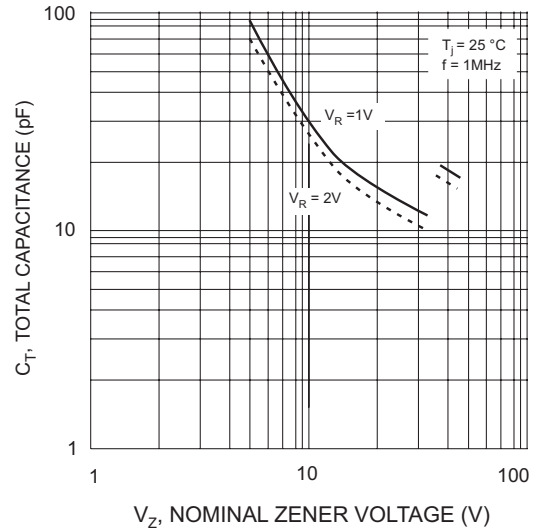


Fig. 19 Total Capacitance vs Nominal Zener Voltage

**Ordering Information** (Note 6)

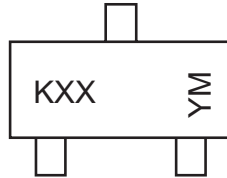
Device	Packaging	Shipping
(Type Number)-7*	SOT-23	3000/Tape & Reel

\* Example: The part number for the 6.2 Volt device would be DDZX6V2B-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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