DDZX5V1B - DDZX43

SURFACE MOUNT PRECISION ZENER DIODE

SPICE MODEL: DDZX5V1B DDZX5V6B DDZX6V2B DDZX6V8C DDZX7V5C DDZX8V2C DDZX9V1C DDZX10C DDZX11C DDZX12C DDZX13B DDZX14 DDZX15 DDZX16 DDZX18C DDZX20C DDZX22D DDZX24C DDZX27D DDZX30D DDZX33 DDZX36 DDZX39F DDZX43

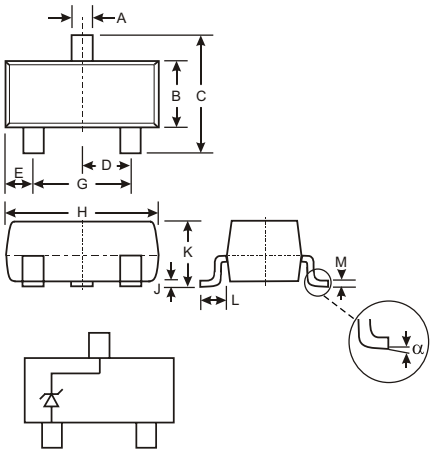
NEW PRODUCT

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

Mechanical Data

- Case: SOT-23, 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: 0.008 grams (approx.)



TOP VIEW

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
α	0°	8°
All Dimensions in mm		

Maximum Ratings

@ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Forward Voltage @ I_F = 10mA	V_F	0.9	V
Power Dissipation (Note 2)	P_d	300	mW
Thermal Resistance, Junction to Ambient Air (Note 2)	$R_{\theta JA}$	417	°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +150	°C

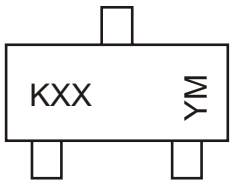
Note: 1. If lead-bearing terminal plating is required, please contact your Diodes Inc. sales representative for availability and minimum order details.
2. Device mounted on FR-4 PCB with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.

Ordering Information (Note 3)

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

* Example: The part number for the 6.2 Volt device would be DDZX6V2B-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	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	uA	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	13.44	14.13	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	38.14	40.11	5	85	250	0.5	0.05	30.0
DDZX43	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.

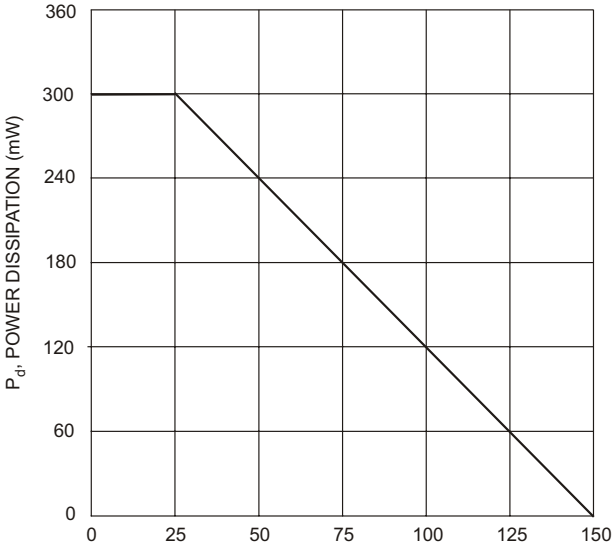


Fig. 1 Power Dissipation vs Ambient Temperature

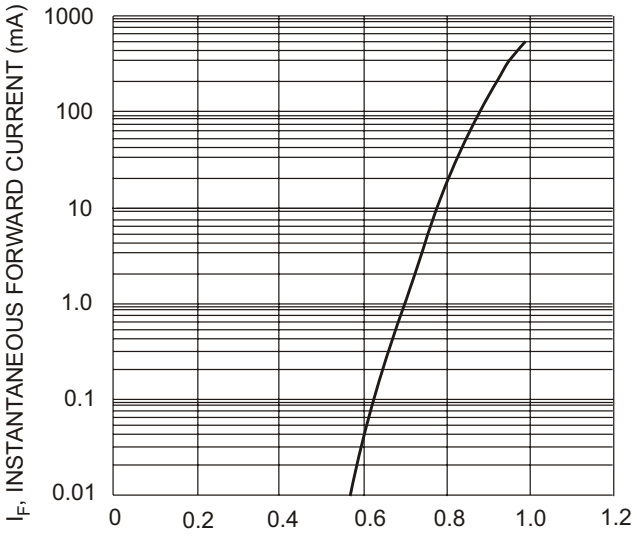


Fig. 2 Typical Forward Characteristics

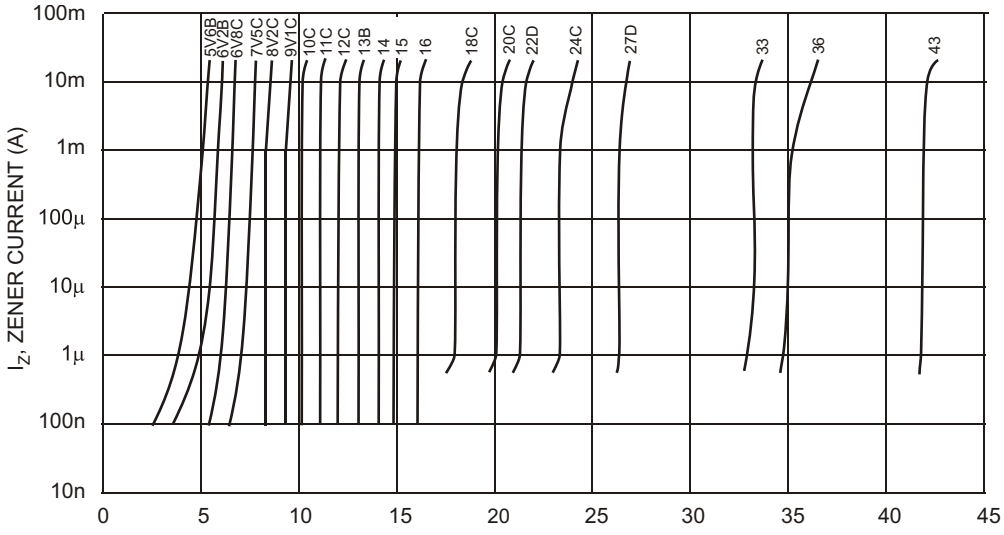


Fig. 3 Typical Reverse Characteristics

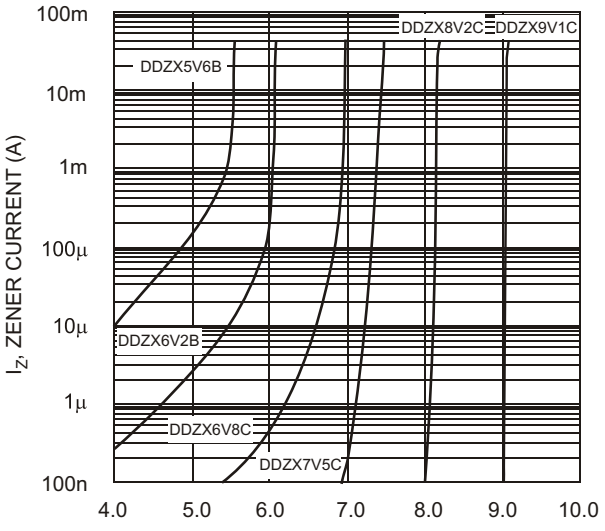


Fig. 4 Typical Reverse Characteristics, DDZX5V6B - DDZX9V1C

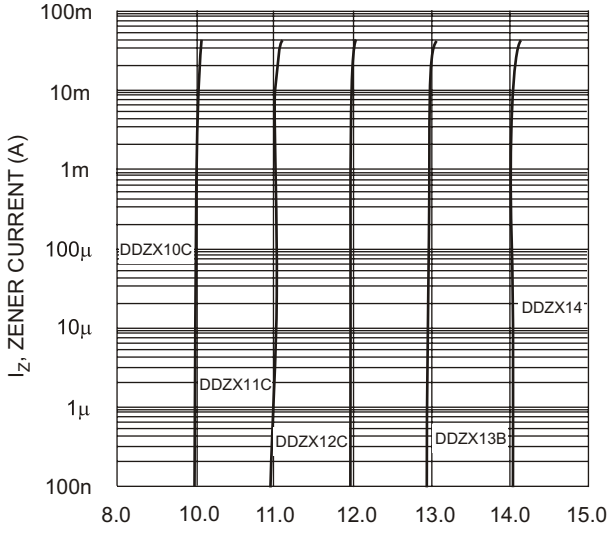


Fig. 5 Typical Reverse Characteristics, DDZX10C - DDZX14

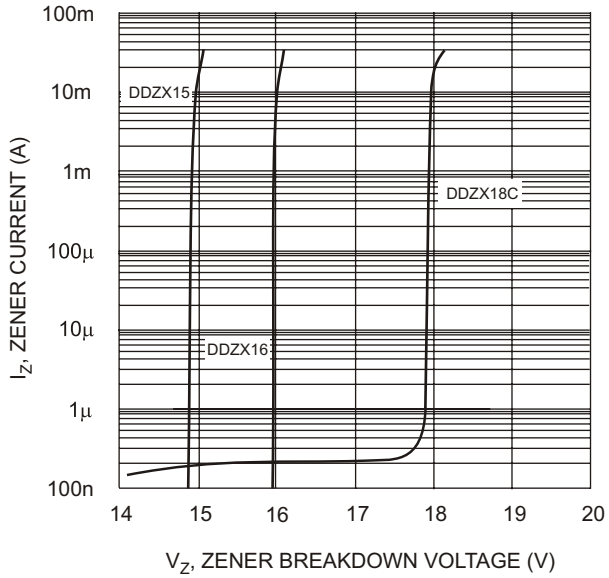


Fig. 6 Typical Reverse Characteristics, DDZX15 - DDZX18C

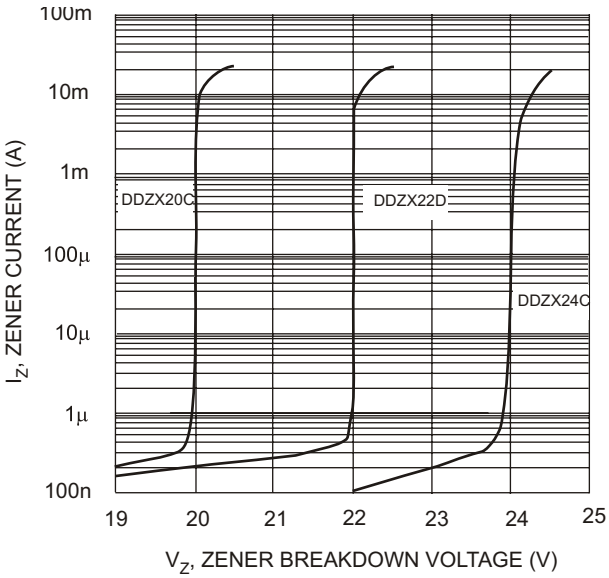


Fig. 7 Typical Reverse Characteristics, DDZX20C - DDZX24C

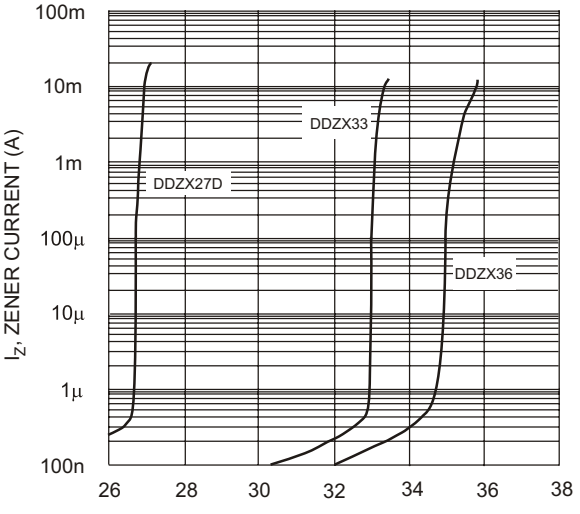


Fig. 8 Typical Reverse Characteristics, DDZX27D - DDZX36

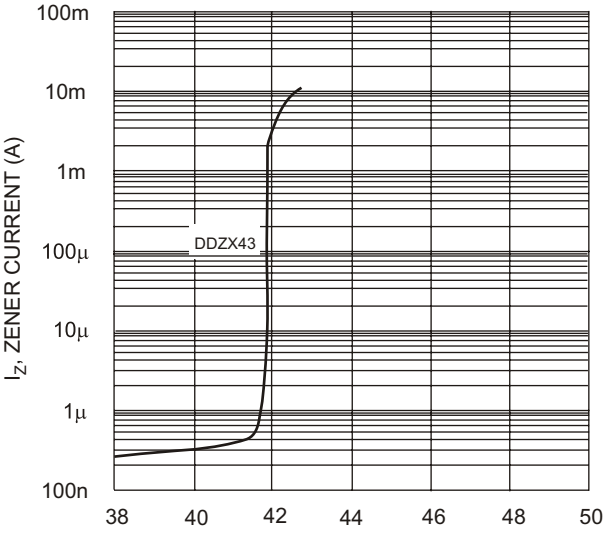


Fig. 9 Typical Reverse Characteristics, DDZX43

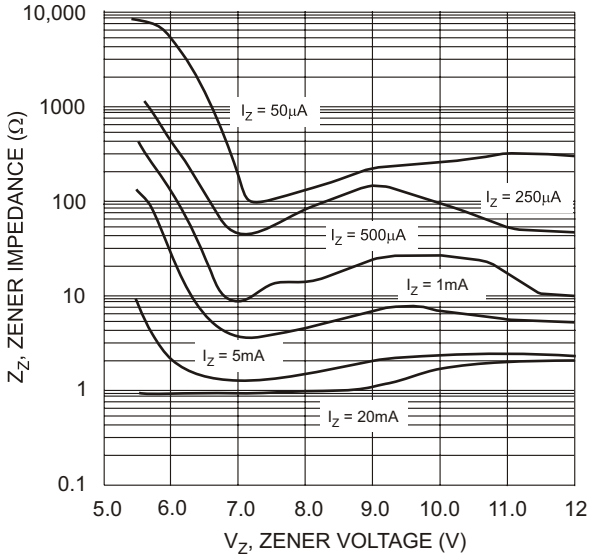


Fig. 10 Typical Zener Impedance Characteristics, DDZX5V6B - DDZX12C

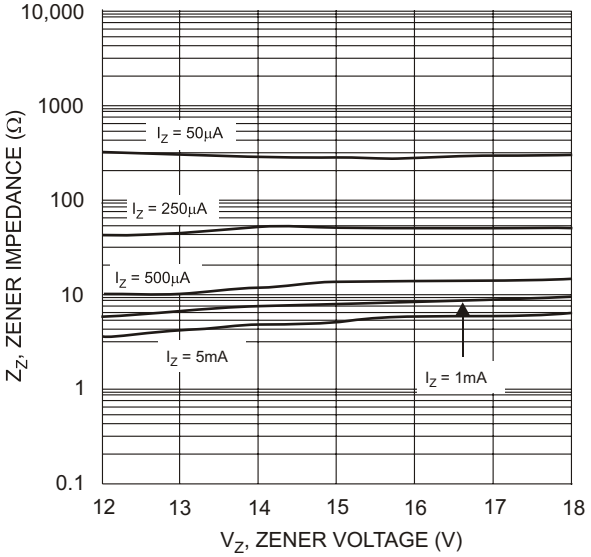


Fig. 11 Typical Zener Impedance Characteristics, DDZX12C - DDZX18C

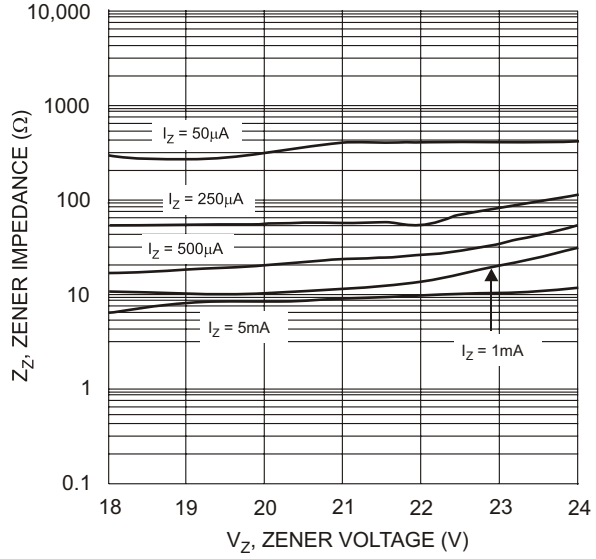


Fig. 12 Typical Zener Impedance Characteristics, DDZX18C - DDZX24C

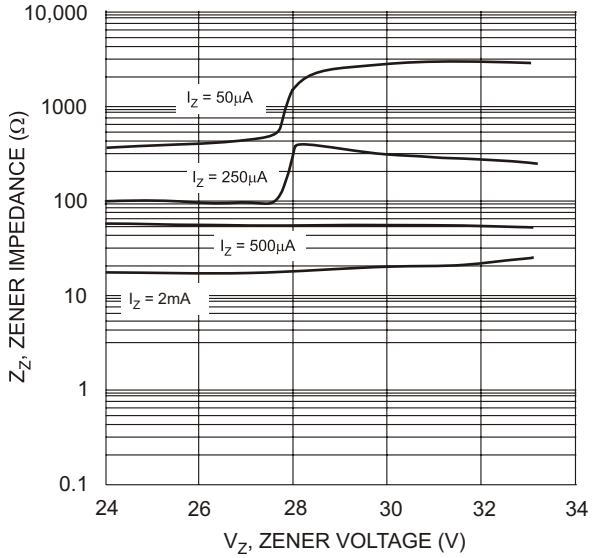


Fig. 13 Typical Zener Impedance Characteristics, DDZX24C - DDZX33

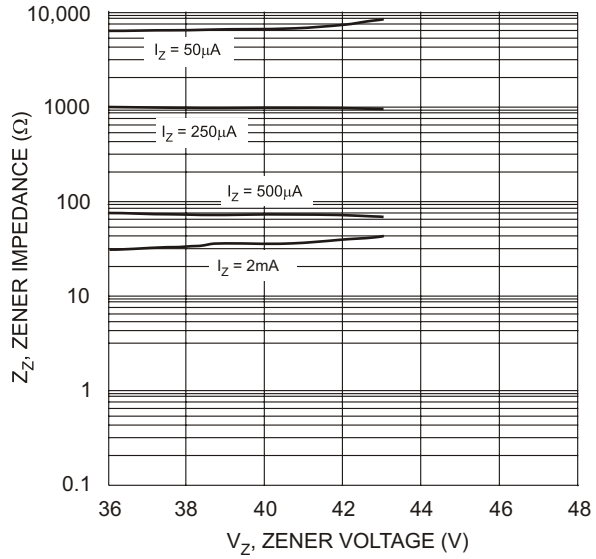


Fig. 14 Typical Zener Impedance Characteristics, DDZX36 - DDZX43

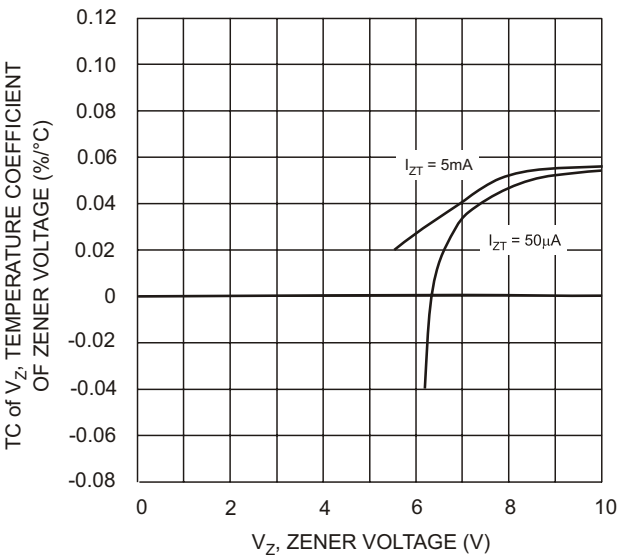


Fig. 15 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX6V2B-DDZX10C

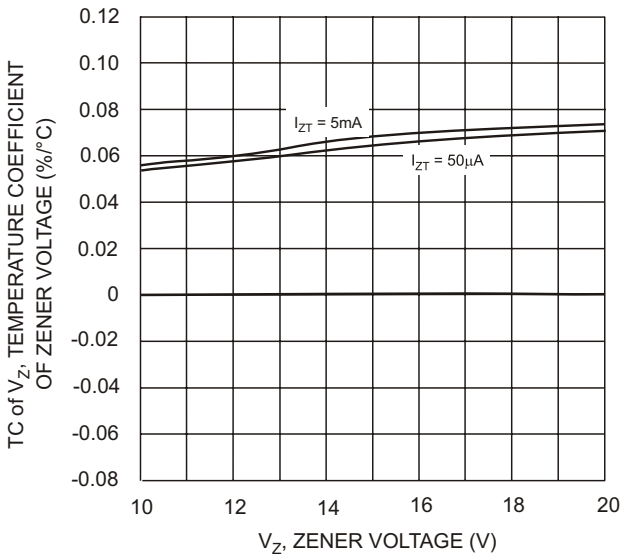


Fig. 16 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX10C-DDZX20C

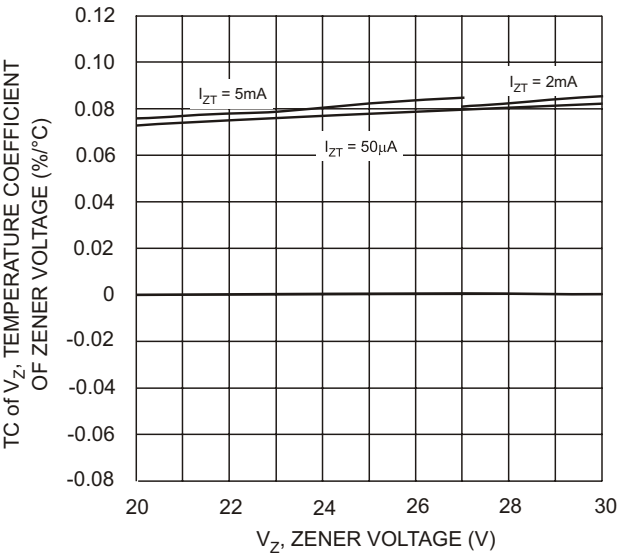


Fig. 17 Typical Temperature Coefficient of Zener Voltage, DDZX20C-DDZX30D

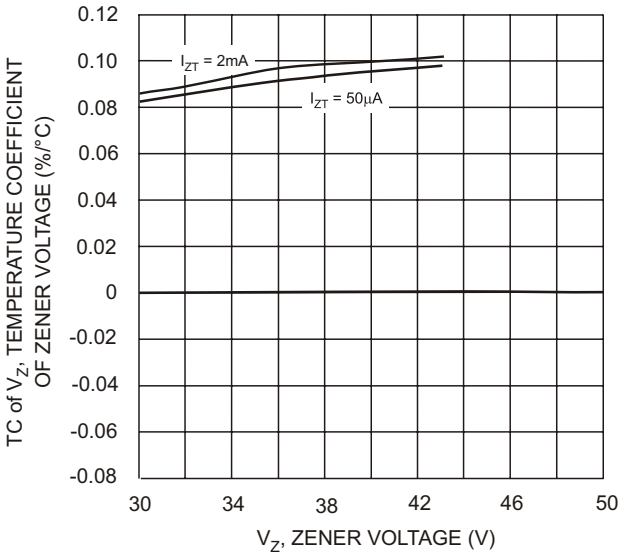


Fig. 18 Typical Temperature Coefficient of Zener Voltage, DDZX30D-DDZX43

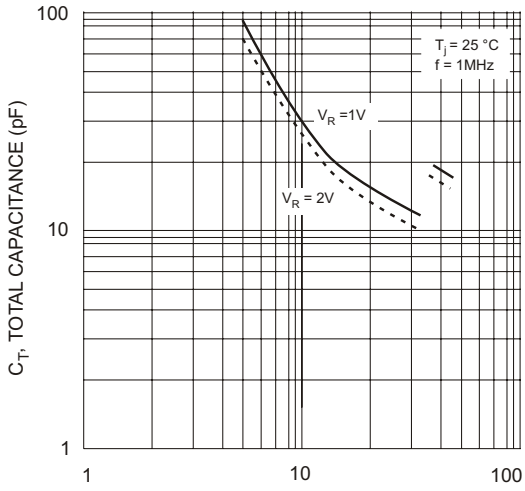


Fig. 19 Total Capacitance vs Nominal Zener Voltage