DDZX9682 - DDZX9717

SURFACE MOUNT PRECISION ZENER DIODE

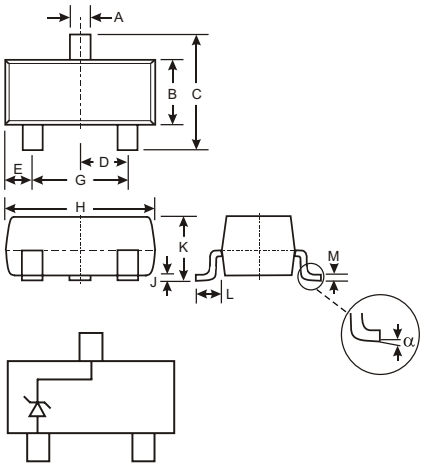
NEW PRODUCT

Features

- Very Sharp Breakdown Characteristics
- 300mW Power Dissipation on Ceramic 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

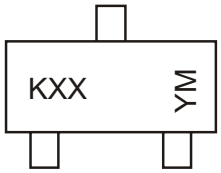
Note: 1. If lead-bearing terminal plating is required, please contact your Diodes Inc. sales representative for availability and minimum order details.
2. Device mounted on FR-4 PCB with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.

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 DDZX9691-7.
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
DDZX9682	HA	2.7	2.565	2.835	50	1	1
DDZX9683	HB	3.0	2.85	3.15	50	0.8	1
DDZX9684	HC	3.3	3.13	3.47	50	7.5	1.5
DDZX9685	HD	3.6	3.42	3.78	50	7.5	2
DDZX9686	HE	3.9	3.70	4.10	50	5	2
DDZX9687	HF	4.3	4.09	4.52	50	4	2
DDZX9688	HG	4.7	4.47	4.94	50	5	3
DDZX9689	HH	5.1	4.85	5.36	50	5	3
DDZX9690	HJ	5.6	5.32	5.88	50	2	4
DDZX9691	HK	6.2	5.89	6.51	50	1	5
DDZX9692	HL	6.8	6.46	7.14	50	0.1	5.1
DDZX9693	HM	7.5	7.13	7.88	50	0.1	5.7
DDZX9694	HN	8.2	7.79	8.61	50	0.1	6.2
DDZX9696	HP	9.1	8.65	9.56	50	0.1	6.9
DDZX9697	HQ	10	9.50	10.50	50	0.1	7.6
DDZX9698	HR	11	10.45	11.55	50	0.05	8.4
DDZX9699	HS	12	11.40	12.60	50	0.05	9.1
DDZX9700	HT	13	12.35	13.65	50	0.05	9.8
DDZX9701	HU	14	13.30	14.70	50	0.05	10.6
DDZX9702	HV	15	14.25	15.75	50	0.05	11.4
DDZX9703	HW	16	15.20	16.80	50	0.05	12.1
DDZX9705	HY	18	17.10	18.90	50	0.05	13.6
DDZX9707	MD	20	19.00	21.00	50	0.05	15.2
DDZX9708	ME	22	20.90	23.10	50	0.05	16.7
DDZX9709	MF	24	22.80	25.20	50	0.05	18.2
DDZX9711	MH	27	25.65	28.35	50	0.05	20.4
DDZX9712	MJ	28	26.60	29.40	50	0.05	21.2
DDZX9713	MK	30	28.50	31.50	50	0.05	22.8
DDZX9714	ML	33	31.35	34.65	50	0.05	25.0
DDZX9715	MM	36	34.20	37.80	50	0.05	27.3
DDZX9716	MN	39	37.05	40.95	50	0.05	29.6
DDZX9717	MO	43	40.85	45.15	50	0.05	32.6

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.

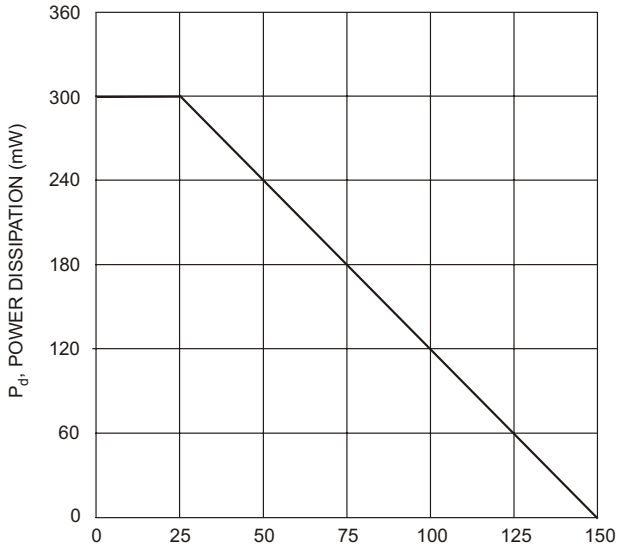


Fig. 1 Power Dissipation vs Ambient Temperature

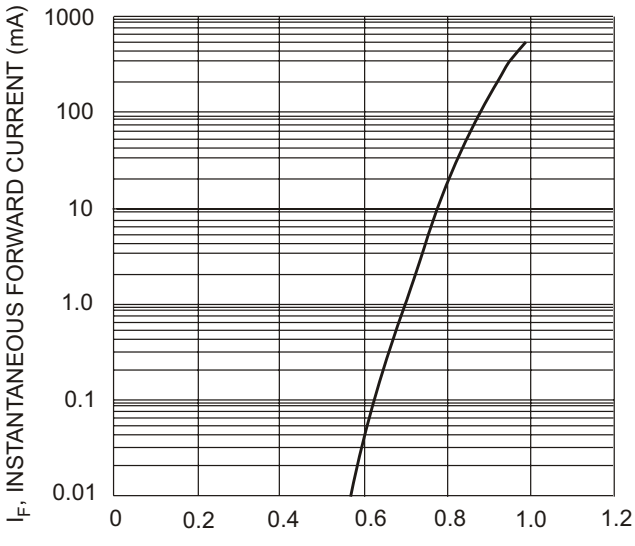


Fig. 2 Typical Forward Characteristics

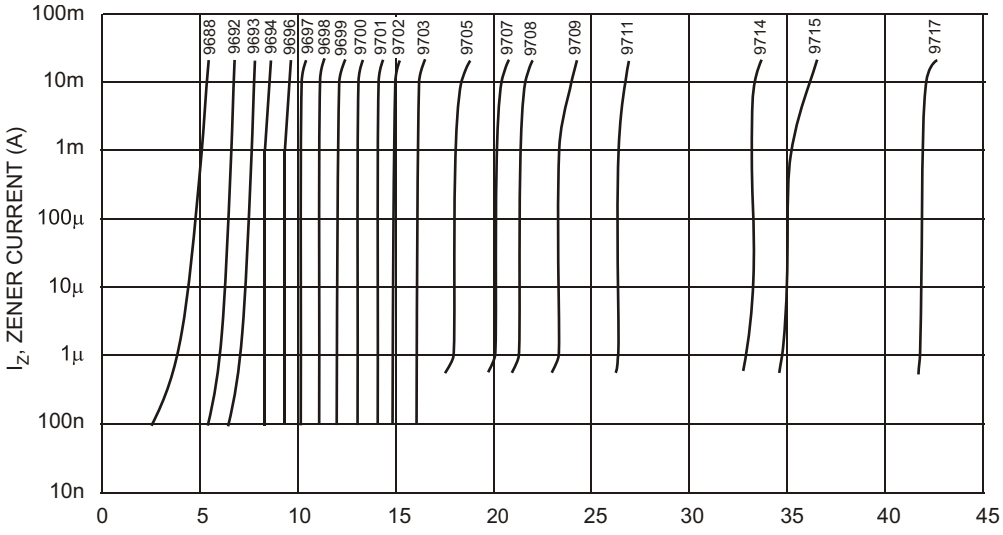


Fig. 3 Typical Reverse Characteristics

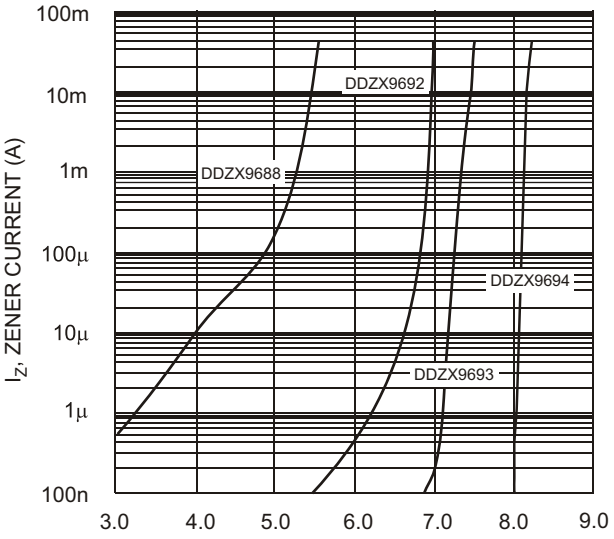


Fig. 4 Typical Reverse Characteristics, DDZX9688 - DDZX9694

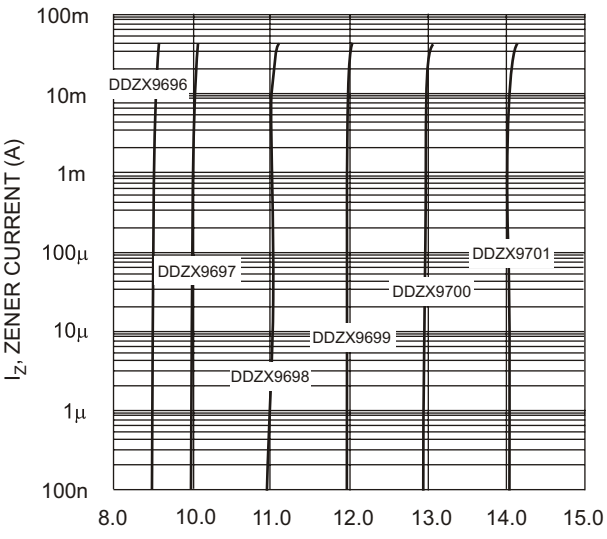


Fig. 5 Typical Reverse Characteristics, DDZX9696 - DDZX9701

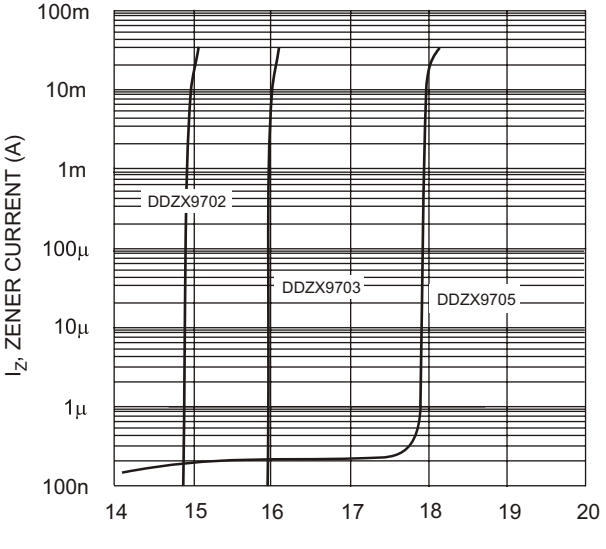


Fig. 6 Typical Reverse Characteristics, DDZX9702 - DDZX9705

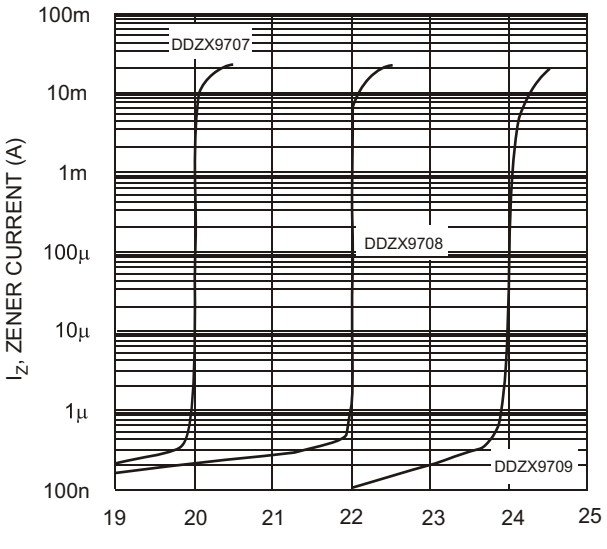


Fig. 7 Typical Reverse Characteristics, DDZX9707 - DDZX9709

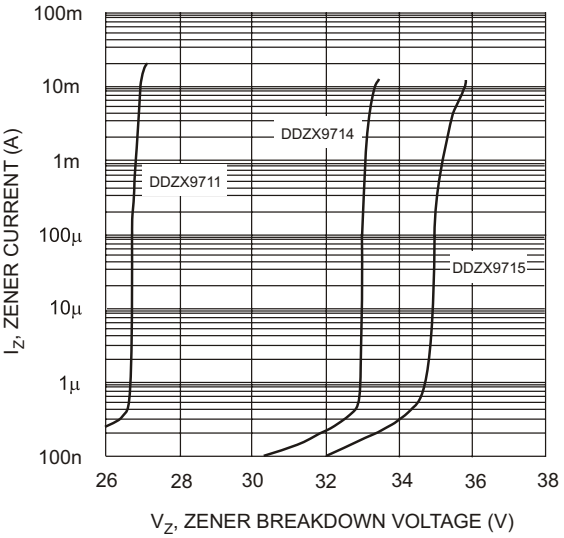


Fig. 8 Typical Reverse Characteristics, DDZX9711 - DDZX9715

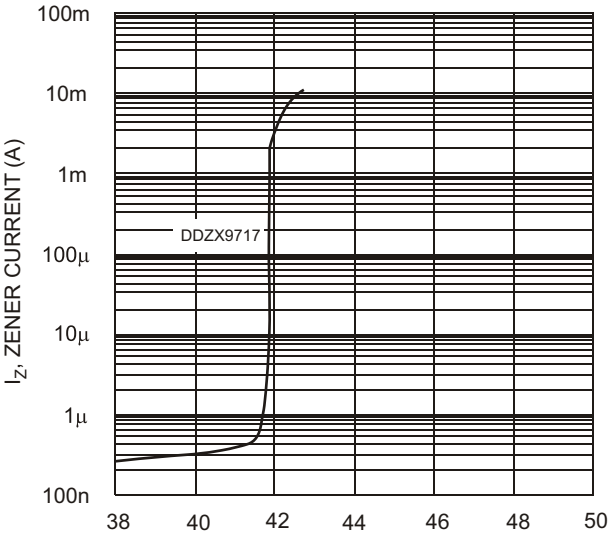


Fig. 9 Typical Reverse Characteristics, DDZX9717

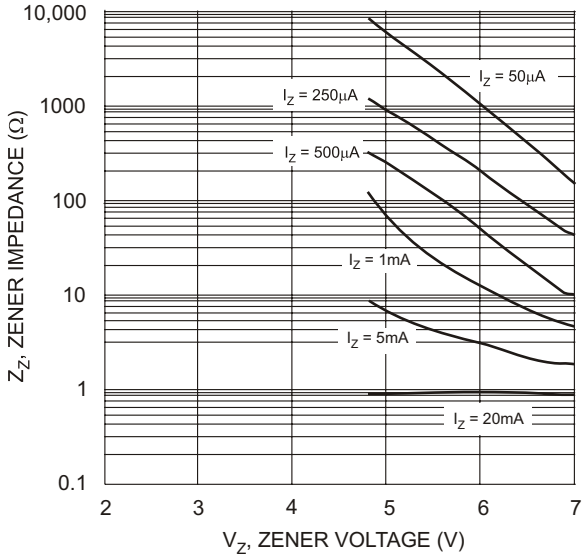


Fig. 10 Typical Zener Impedance Characteristics, DDZX9688 - DDZX9692

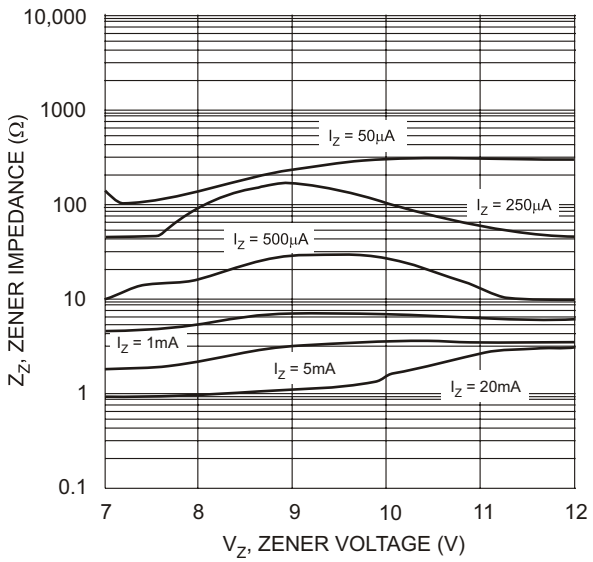


Fig. 11 Typical Zener Impedance Characteristics, DDZX9693 - DDZX9699

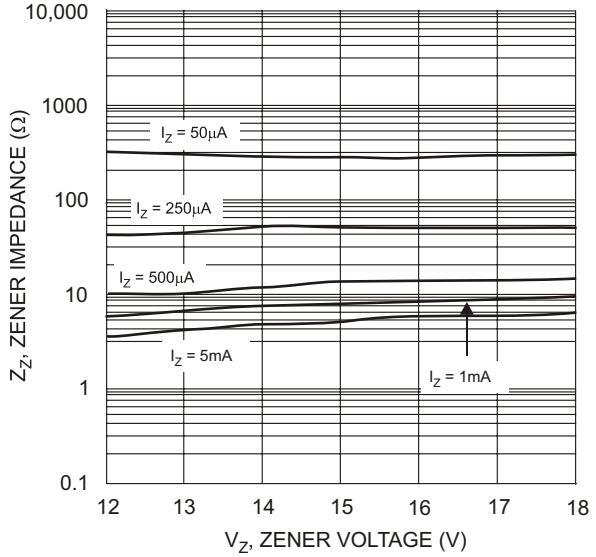


Fig. 12 Typical Zener Impedance Characteristics, DDZX9699 - DDZX9705

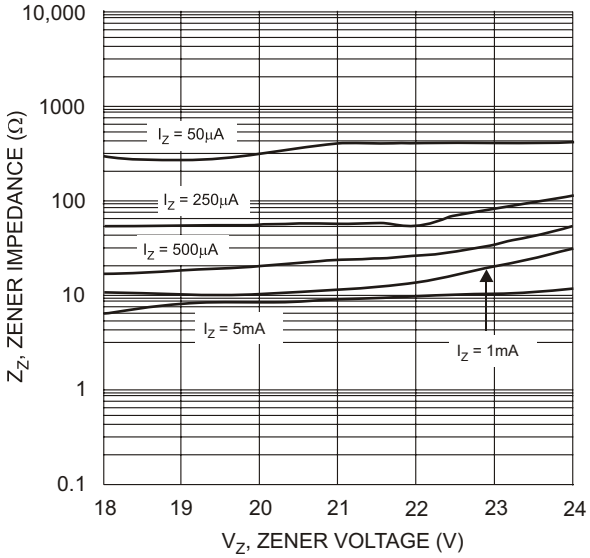


Fig. 13 Typical Zener Impedance Characteristics, DDZX9705 - DDZX9709

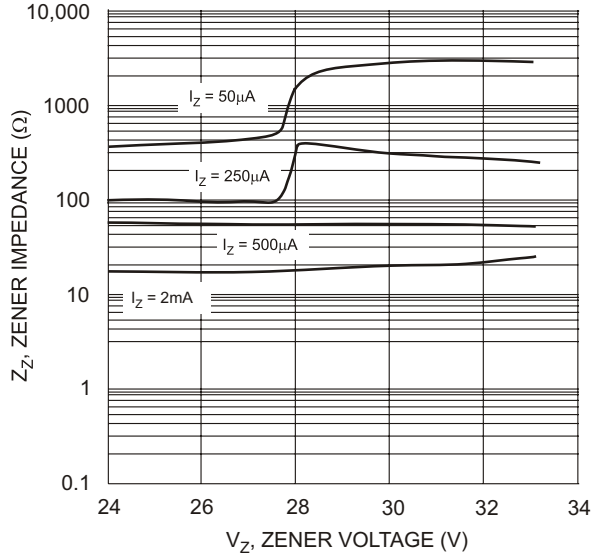


Fig. 14 Typical Zener Impedance Characteristics, DDZX9709 - DDZX9714

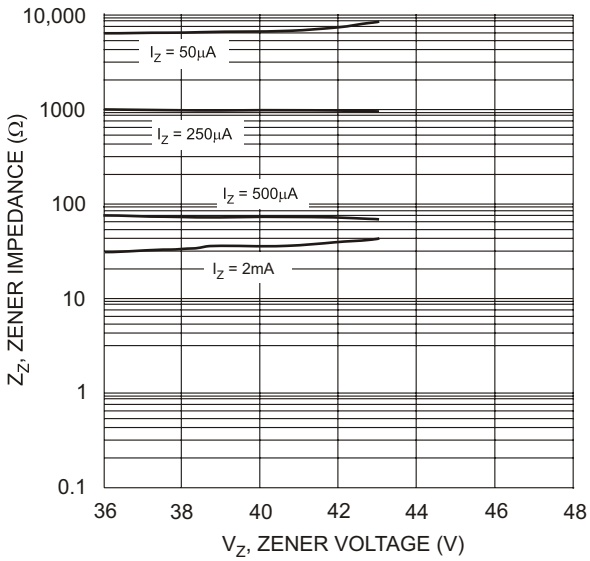


Fig. 15 Typical Zener Impedance Characteristics, DDZX9715 - DDZX9717

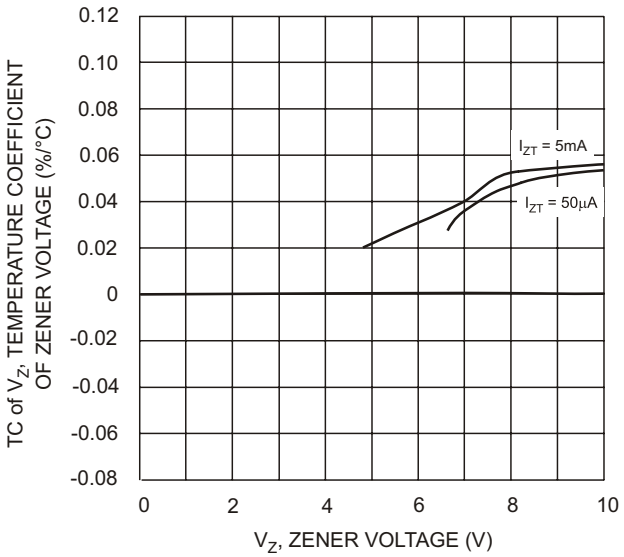


Fig. 16 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX9692 - DDZX9697

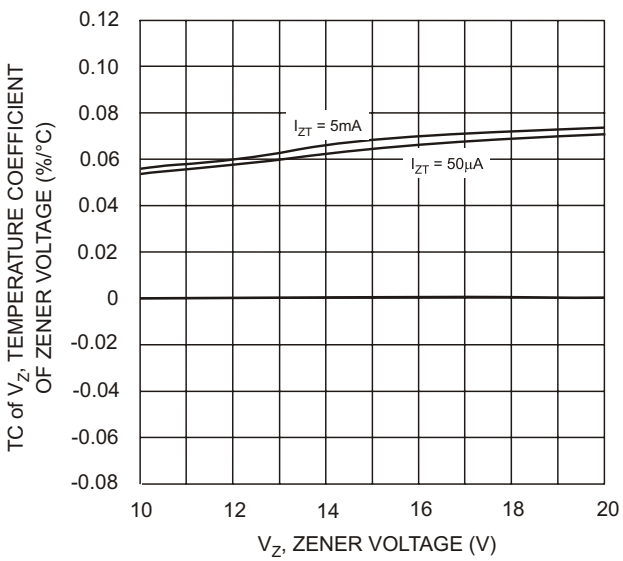


Fig. 17 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZX9697 - DDZX9707

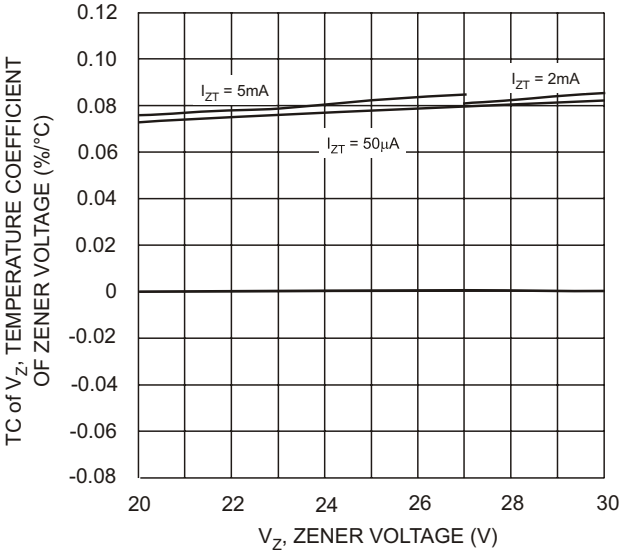


Fig. 18 Typical Temperature Coefficient of Zener Voltage, DDZX9707 - DDZX9713

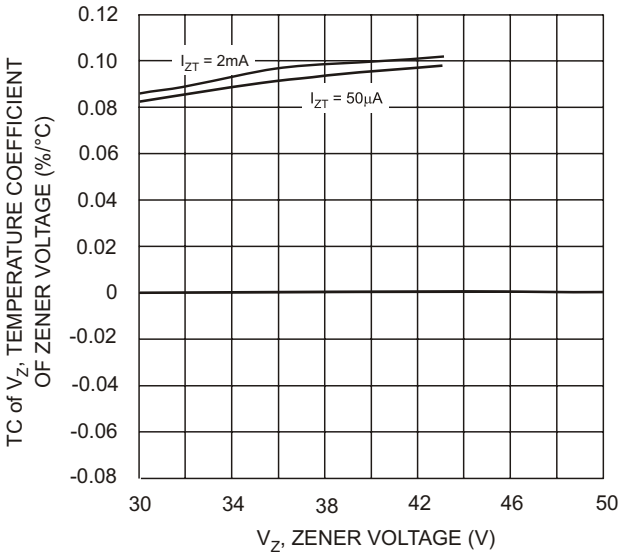


Fig. 19 Typical Temperature Coefficient of Zener Voltage, DDZX9713 - DDZX9717

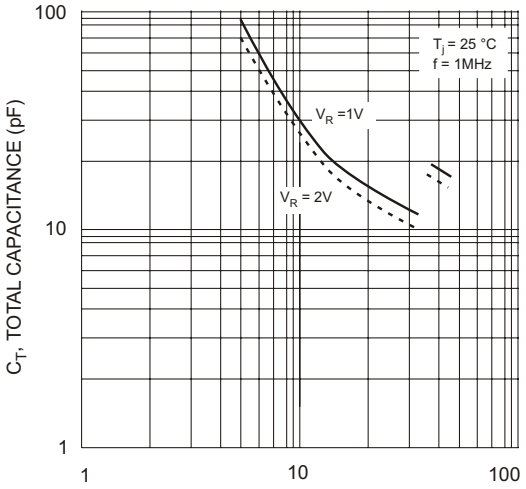


Fig. 20 Total Capacitance vs Nominal Zener Voltage