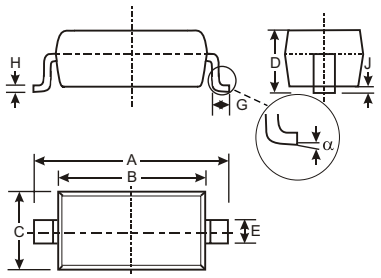
DDZ9681 - DDZ9717

SURFACE MOUNT PRECISION ZENER DIODE

NEW PRODUCT

Features

- Very Sharp Breakdown Characteristics
- 500mW Power Dissipation on Ceramic PCB
- Very Tight Tolerance on V_Z
- Ideally Suited for Automated Assembly Processes
- Very Low Leakage Current
- Lead Free Product



SOD-123		
Dim	**Min**	**Max**
A	3.55	3.85
B	2.55	2.85
C	1.40	1.70
D	—	1.35
E	0.55 Typical	
G	0.25	—
H	0.11 Typical	
J	—	0.10
α	0°	8°
All Dimensions in mm		

Mechanical Data

- Case: SOD-123, 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: Cathode Band
- Marking: See Below
- Weight: 0.01 grams (approx.)

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	500	mW
Thermal Resistance, Junction to Ambient Air (Note 2)	$R_{\theta JA}$	305	°C/W
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +150	°C

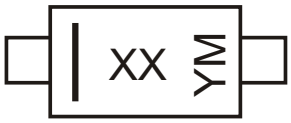
Note: 1. If lead-bearing terminal plating is required, please contact your Diodes Inc. sales representative for availability and minimum order details.
2. Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad areas 25mm^2.

Ordering Information (Note 3)

Device	Packaging	Shipping
(Type Number)-7*	SOD-123	3000/Tape & Reel

* Example: The part number for the 6.2 Volt device would be DDZ9691-7.
Note : 3. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



XX = 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
DDZ9681	H9	2.4	2.28	2.52	50	2	1
DDZ9682	HA	2.7	2.565	2.835	50	1	1
DDZ9683	HB	3.0	2.85	3.15	50	0.8	1
DDZ9684	HC	3.3	3.13	3.47	50	7.5	1.5
DDZ9685	HD	3.6	3.42	3.78	50	7.5	2
DDZ9686	HE	3.9	3.70	4.10	50	5	2
DDZ9687	HF	4.3	4.09	4.52	50	4	2
DDZ9688	HG	4.7	4.47	4.94	50	5	3
DDZ9689	HH	5.1	4.85	5.36	50	5	3
DDZ9690	HJ	5.6	5.32	5.88	50	2	4
DDZ9691	HK	6.2	5.89	6.51	50	1	5
DDZ9692	HL	6.8	6.46	7.14	50	0.1	5.1
DDZ9693	HM	7.5	7.13	7.88	50	0.1	5.7
DDZ9694	HN	8.2	7.79	8.61	50	0.1	6.2
DDZ9696	HP	9.1	8.65	9.56	50	0.1	6.9
DDZ9697	HQ	10	9.50	10.50	50	0.1	7.6
DDZ9698	HR	11	10.45	11.55	50	0.05	8.4
DDZ9699	HS	12	11.40	12.60	50	0.05	9.1
DDZ9700	HT	13	12.35	13.65	50	0.05	9.8
DDZ9701	HU	14	13.30	14.70	50	0.05	10.6
DDZ9702	HV	15	14.25	15.75	50	0.05	11.4
DDZ9703	HW	16	15.20	16.80	50	0.05	12.1
DDZ9705	HY	18	17.10	18.90	50	0.05	13.6
DDZ9707	MD	20	19.00	21.00	50	0.05	15.2
DDZ9708	ME	22	20.90	23.10	50	0.05	16.7
DDZ9709	MF	24	22.80	25.20	50	0.05	18.2
DDZ9711	MH	27	25.65	28.35	50	0.05	20.4
DDZ9712	MJ	28	26.60	29.40	50	0.05	21.2
DDZ9713	MK	30	28.50	31.50	50	0.05	22.8
DDZ9714	ML	33	31.35	34.65	50	0.05	25.0
DDZ9715	MM	36	34.20	37.80	50	0.05	27.3
DDZ9716	MN	39	37.05	40.95	50	0.05	29.6
DDZ9717	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.

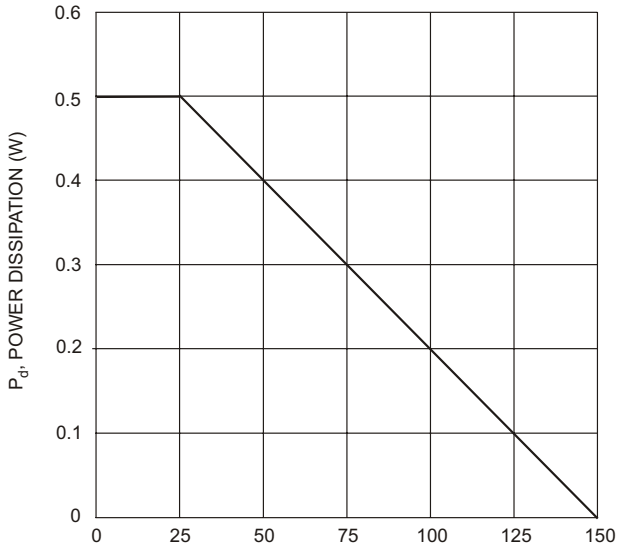


Fig. 1 Power Dissipation vs Ambient Temperature

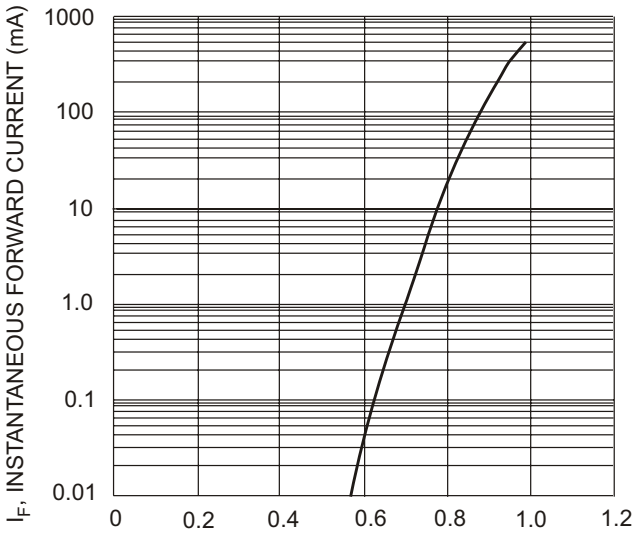


Fig. 2 Typical Forward Characteristics

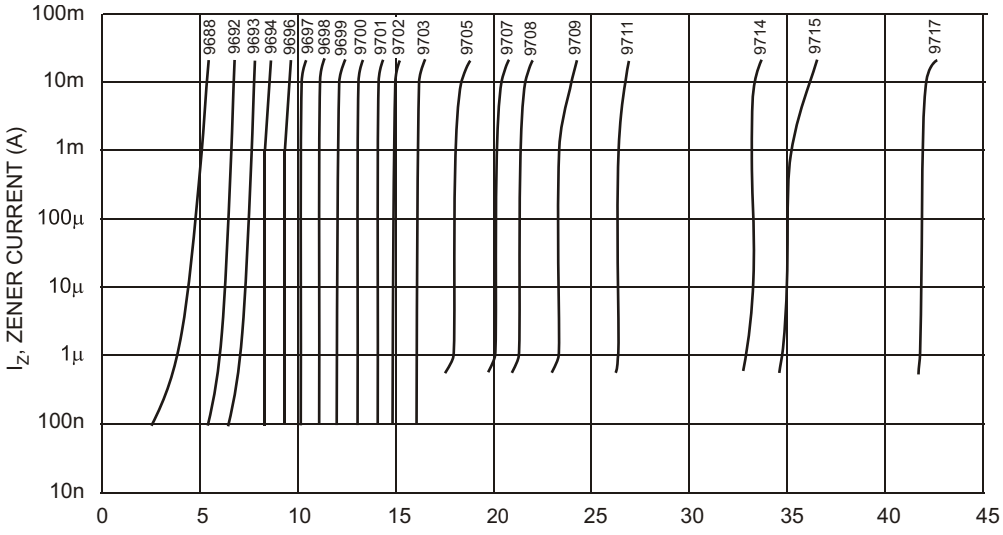


Fig. 3 Typical Reverse Characteristics

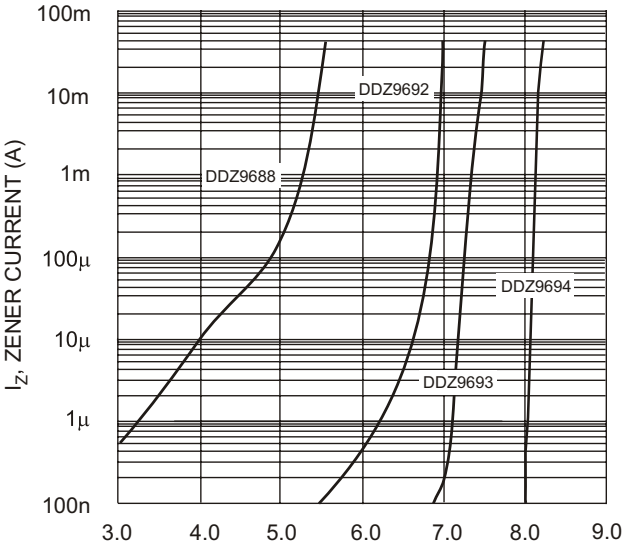


Fig. 4 Typical Reverse Characteristics, DDZ9688 - DDZ9694

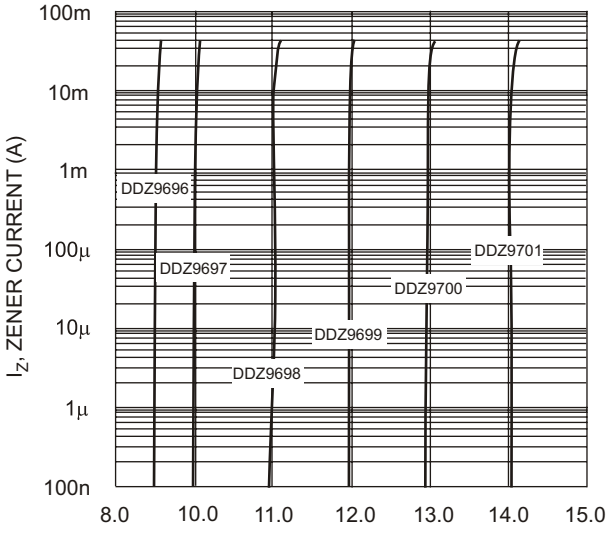


Fig. 5 Typical Reverse Characteristics, DDZ9696 - DDZ9701

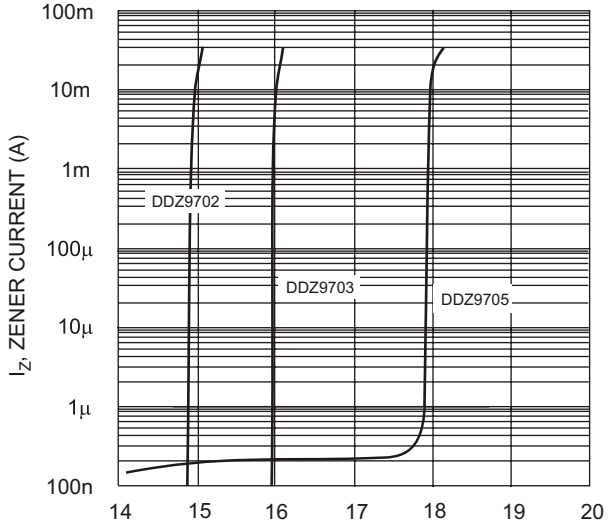


Fig. 6 Typical Reverse Characteristics, DDZ9702 - DDZ9705

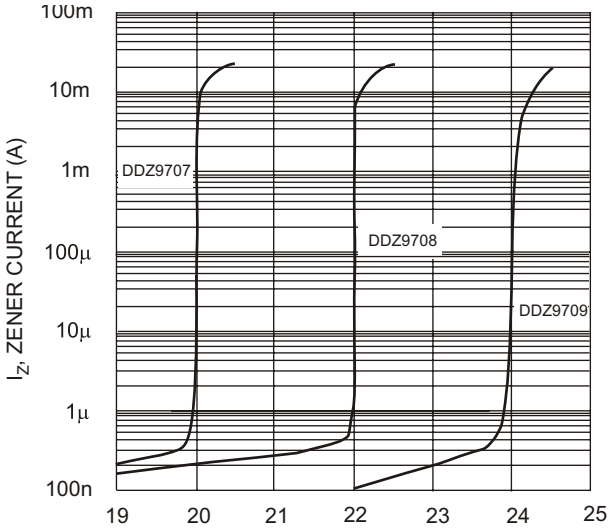


Fig. 7 Typical Reverse Characteristics, DDZ9707 - DDZ9709

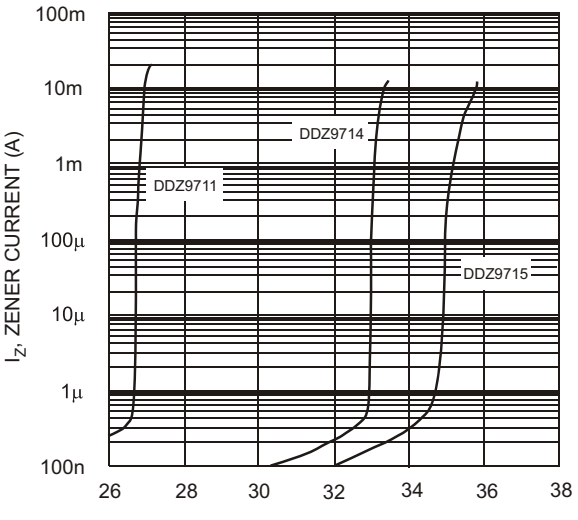


Fig. 8 Typical Reverse Characteristics, DDZ9711 - DDZ9715

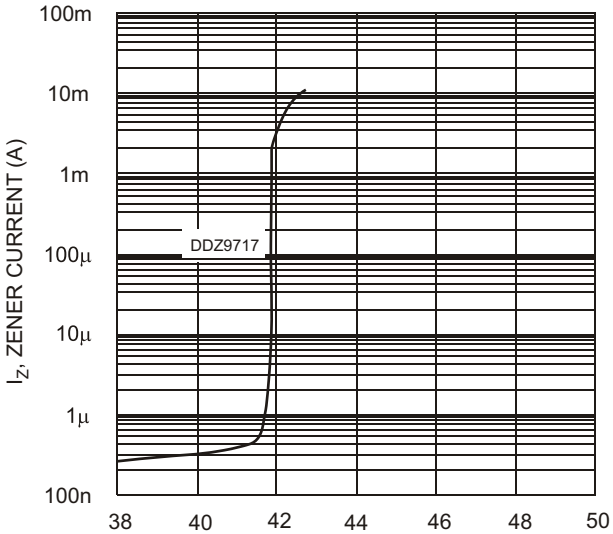


Fig. 9 Typical Reverse Characteristics, DDZ9717

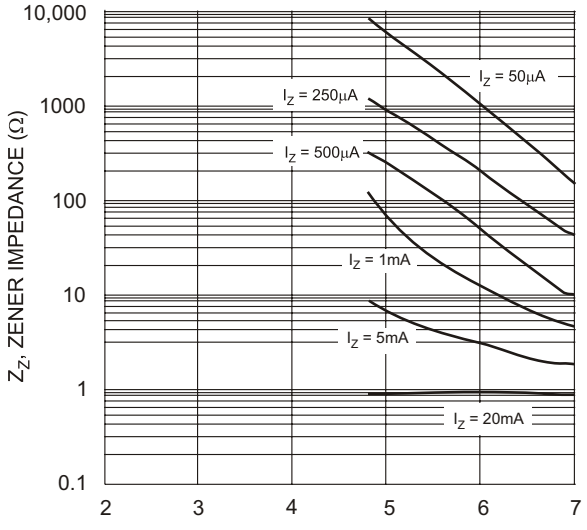


Fig. 10 Typical Zener Impedance Characteristics, DDZ9688 - DDZ9692

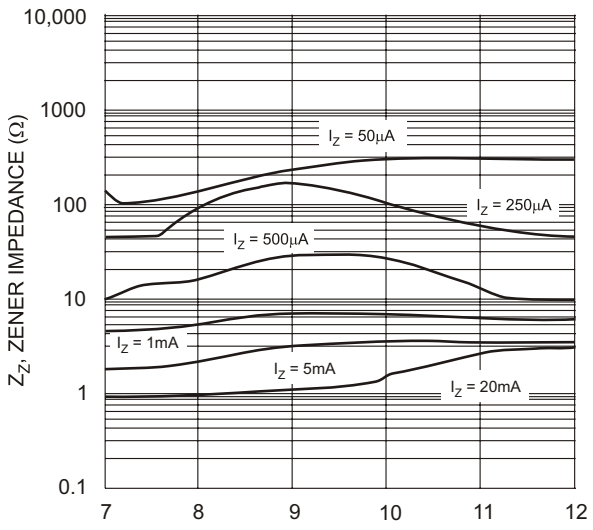


Fig. 11 Typical Zener Impedance Characteristics, DDZ9693 - DDZ9699

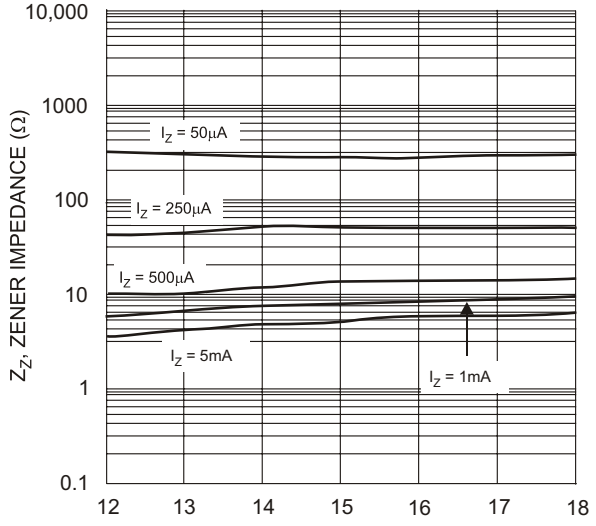


Fig. 12 Typical Zener Impedance Characteristics, DDZ9699 - DDZ9705

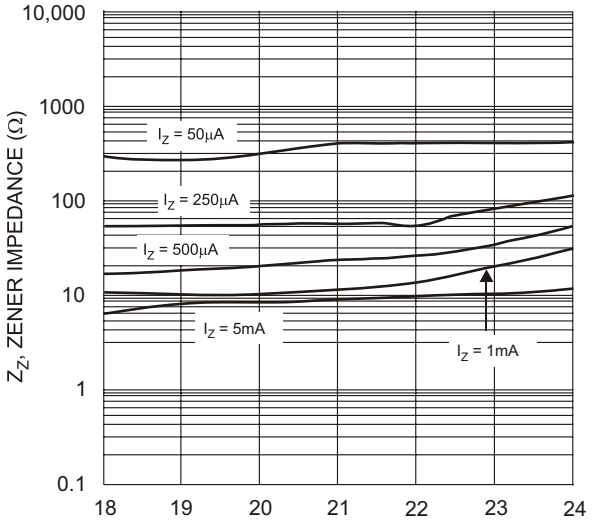


Fig. 13 Typical Zener Impedance Characteristics, DDZ9705 - DDZ9709

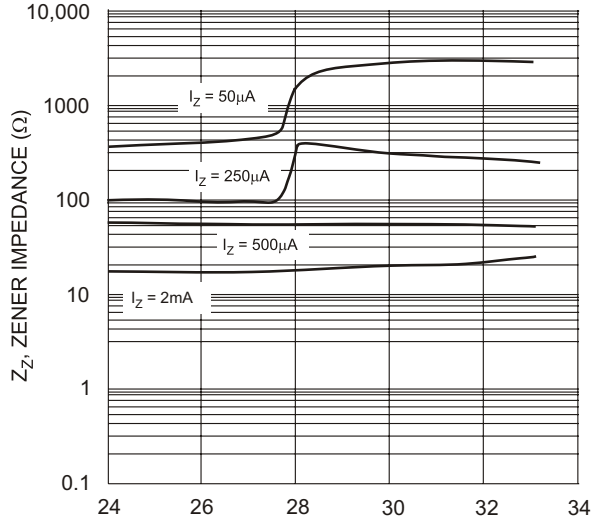


Fig. 14 Typical Zener Impedance Characteristics, DDZ9709 - DDZ9714

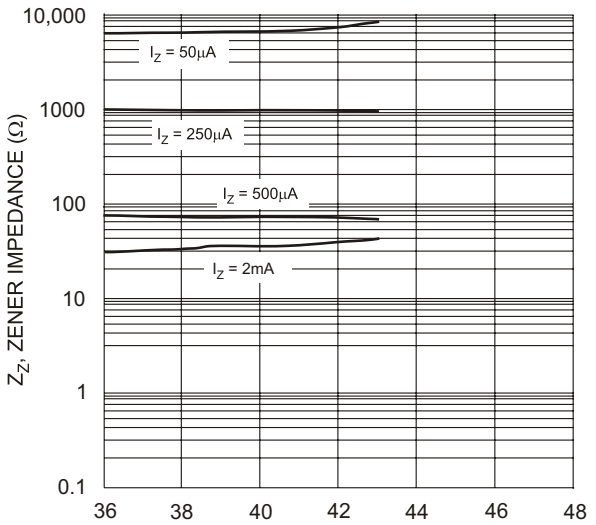


Fig. 15 Typical Zener Impedance Characteristics, DDZ9715 - DDZ9717

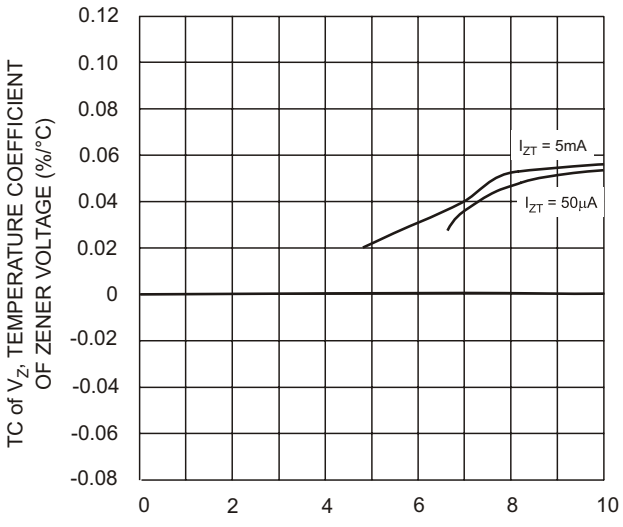


Fig. 16 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ9692 - DDZ9697

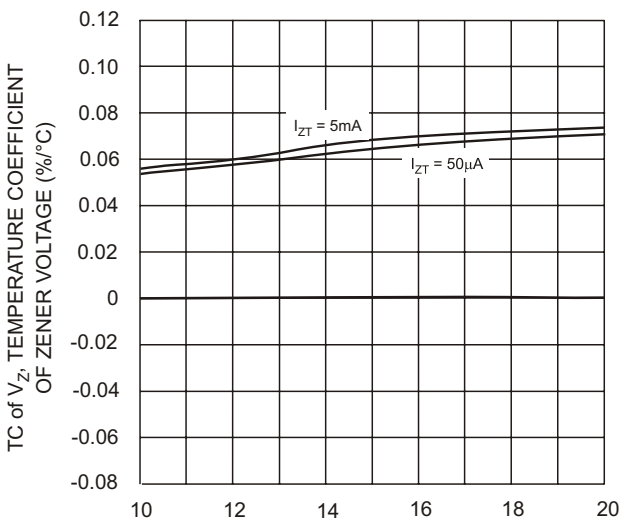


Fig. 17 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ9697 - DDZ9707

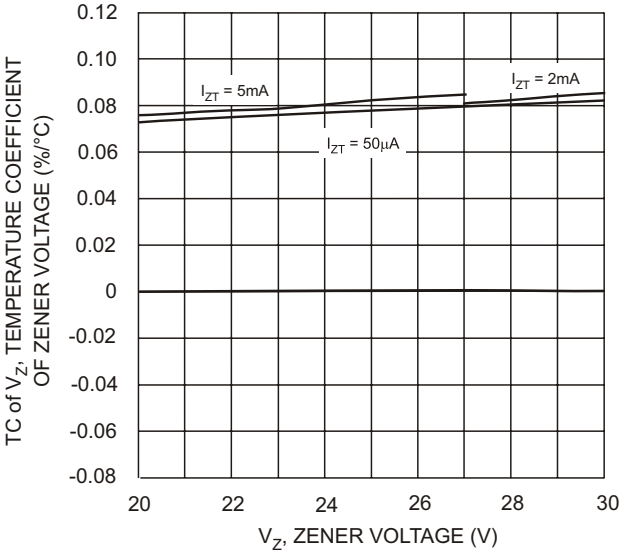


Fig. 18 Typical Temperature Coefficient of Zener Voltage, DDZ9707 - DDZ9713

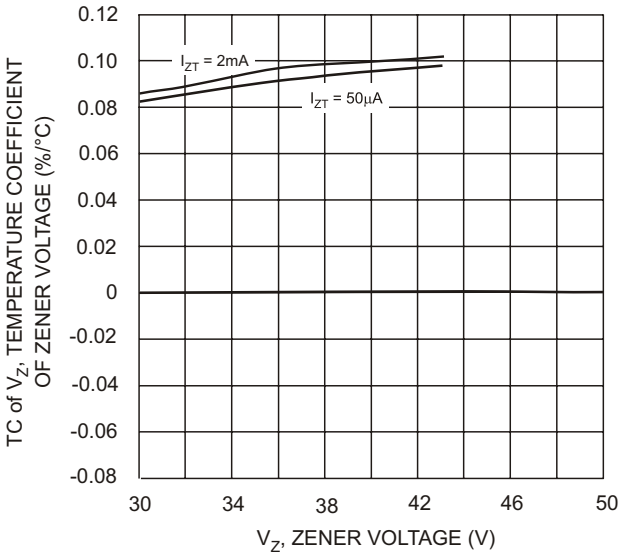


Fig. 19 Typical Temperature Coefficient of Zener Voltage, DDZ9713 - DDZ9717

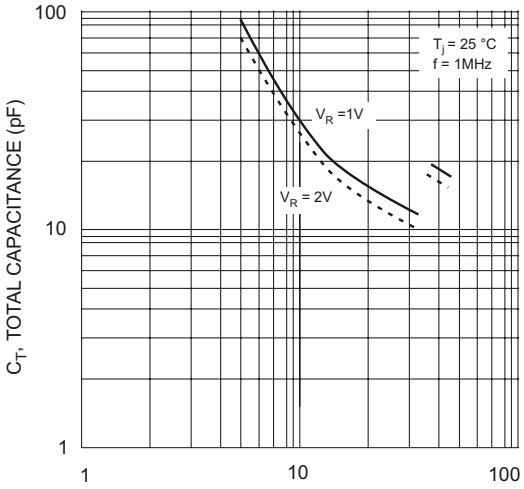


Fig. 20 Total Capacitance vs Nominal Zener Voltage

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