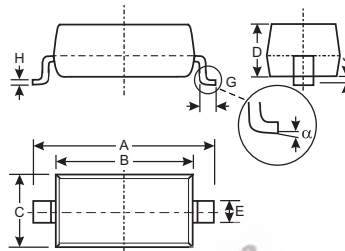


### Features

- 500mW Power Dissipation on Ceramic PCB
- Very Tight Tolerance on  $V_Z$
- Ideally Suited for Automated Assembly Processes
- **Lead Free By Design/RoHS Compliant (Note 7)**

### Mechanical Data

- Case: SOD-123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminal Connections: Cathode Band
- Terminals: Finish - Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208
- Marking & Type Code Information: See Electrical Specifications Table
- Ordering Information: See Page 6
- Weight: 0.01 grams (approximate)



SOD-123		
Dim	Min	Max
A	3.55	3.85
B	2.55	2.85
C	1.40	1.70
D	—	1.35
E	0.45	0.65
	0.55 Typical	
G	0.25	—
H	0.11 Typical	
J	—	0.10
$\alpha$	0°	8°
<b>All Dimensions in mm</b>		

### 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)	$P_d$	500	mW
Thermal Resistance, Junction to Ambient Air (Note 1)	$R_{\theta JA}$	305	$^\circ\text{C/W}$

Note: 1. Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad areas 25mm<sup>2</sup>.

**Electrical Characteristics** @  $T_A = 25^\circ\text{C}$  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)	
		$V_Z @ I_{ZT}$		$I_{ZT}$	$Z_{ZT} @ I_{ZT}$	$Z_{ZK} @ I_{ZK}$	$I_{ZK}$	$I_R$	@ $V_R$
		Min (V)	Max (V)	mA	$\Omega$		mA	$\mu\text{A}$	V
DDZ5V1B	KM	4.94	5.20	20	17	480	1	5	1.5
DDZ5V6B	KN	5.45	5.73	20	11	400	1	0.5	2.5
DDZ6V2B	KO	5.96	6.27	20	7	150	1	0.5	4.0
DDZ6V8B	KP	6.49	6.83	20	5	150	0.5	0.1	5.0
DDZ6V8C	YP	6.66	7.01	20	5	150	0.5	0.1	5.0
DDZ7V5B	KQ	7.07	7.45	20	6	120	0.5	0.1	6.0
DDZ7V5C	YQ	7.29	7.67	20	6	120	0.5	0.1	6.0
DDZ8V2B	KR	7.78	8.19	20	8	120	0.5	0.1	6.5
DDZ8V2C	YR	8.03	8.45	20	8	120	0.5	0.1	6.5
DDZ9V1B	KS	8.57	9.01	20	8	120	0.5	0.1	7.0
DDZ9V1C	YS	8.83	9.30	20	8	120	0.5	0.1	7.0
DDZ10B	KT	9.41	9.90	20	8	120	0.5	0.1	8.0
DDZ10C	YT	9.70	10.20	20	8	120	0.5	0.1	8.0
DDZ11B	KU	10.50	11.05	10	10	120	0.5	0.1	8.4
DDZ11C	YU	10.82	11.38	10	10	120	0.5	0.1	8.4
DDZ12B	KV	11.44	12.03	10	12	110	0.5	0.1	9.1
DDZ12C	YV	11.74	12.35	10	12	110	0.5	0.1	9.1
DDZ13B	KW	12.55	13.21	10	14	110	0.5	0.1	10.0
DDZ14	GX	13.65	14.35	10	16	110	0.5	0.05	11.0
DDZ14B	KX	13.89	14.62	10	16	110	0.5	0.05	11.0
DDZ15	GY	14.80	15.57	10	18	150	0.5	0.05	12.0
DDZ16B	KY	15.25	16.04	10	18	150	0.5	0.05	12.0
DDZ16	YY	15.69	16.51	10	18	150	0.5	0.05	12.0
DDZ17	KZ	16.82	17.70	10	23	150	0.5	0.05	14.0
DDZ18C	YZ	17.42	18.33	10	23	150	0.5	0.05	14.0
DDZ19	ZJ	18.63	19.59	10	28	200	0.5	0.05	15.0
DDZ20C	PJ	19.23	20.22	10	28	200	0.5	0.05	15.0
DDZ21	ZK	20.64	21.71	5	30	200	0.5	0.05	17.0
DDZ22D	2K	21.52	22.63	5	30	200	0.5	0.05	17.0
DDZ23	ZL	22.61	23.77	5	35	200	0.5	0.05	19.0
DDZ24C	PL	23.12	24.31	5	35	200	0.5	0.05	19.0
DDZ26	ZM	24.97	26.26	5	45	250	0.5	0.05	21.0
DDZ27D	2M	26.29	27.64	5	45	250	0.5	0.05	21.0
DDZ28	ZN	27.70	29.13	5	55	250	0.5	0.05	23.0
DDZ30D	2N	29.02	30.51	5	55	250	0.5	0.05	23.0
DDZ31	ZO	30.32	31.88	5	65	250	0.5	0.05	25.0
DDZ33	RP	32.14	33.79	5	75	250	0.5	0.05	27.0
DDZ34	ZP	32.79	34.49	5	75	250	0.5	0.05	27.0
DDZ36	ZQ	35.36	37.19	5	85	250	0.5	0.05	30.0
DDZ39F	5Q	38.02	39.98	5	85	250	0.5	0.05	30.0
DDZ43	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.
  - $f = 1\text{kHz}$ .
  - Short duration pulse test used to minimize self-heating effect.

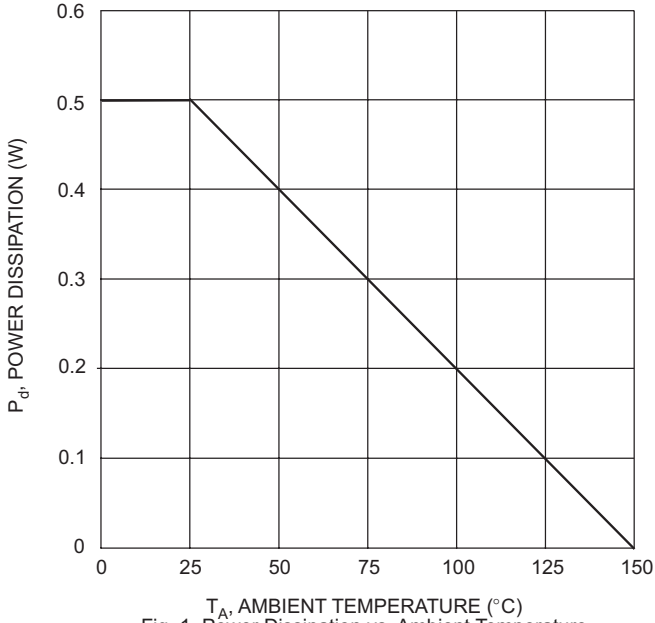


Fig. 1 Power Dissipation vs. Ambient Temperature

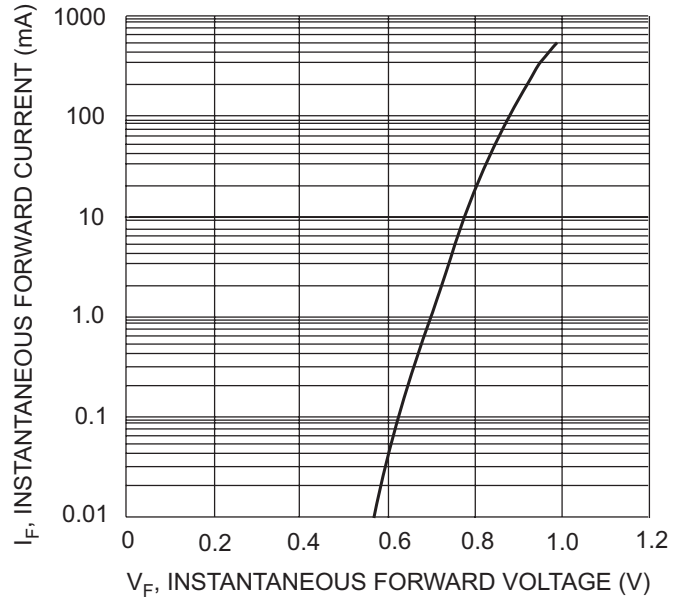


Fig. 2 Typical Forward Characteristics

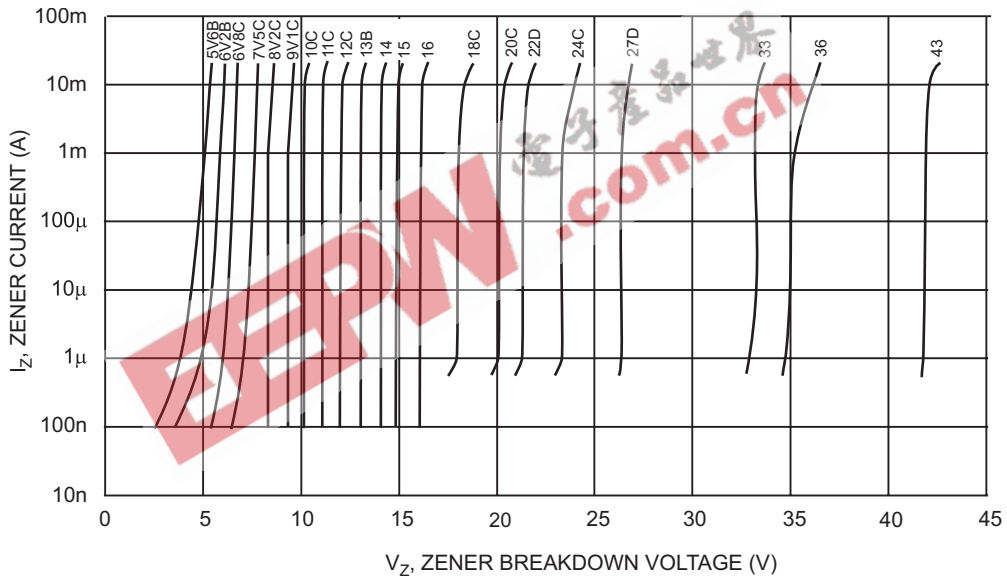


Fig. 3 Typical Reverse Characteristics

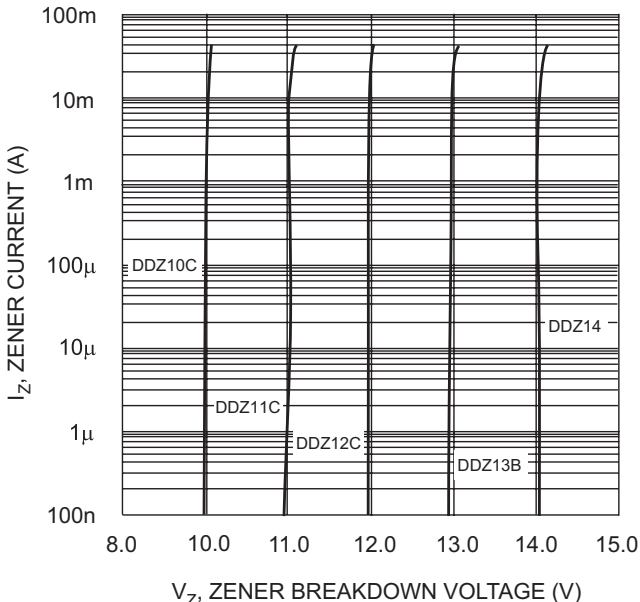


Fig. 5 Typical Reverse Characteristics, DDZ10C - DDZ14

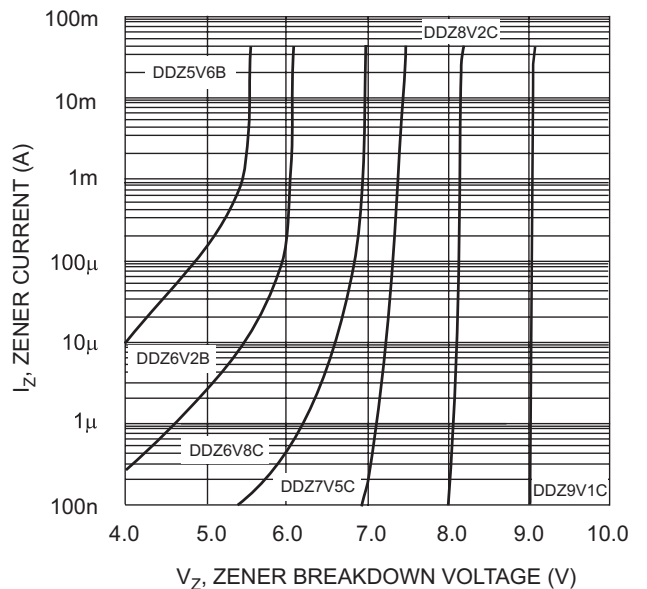
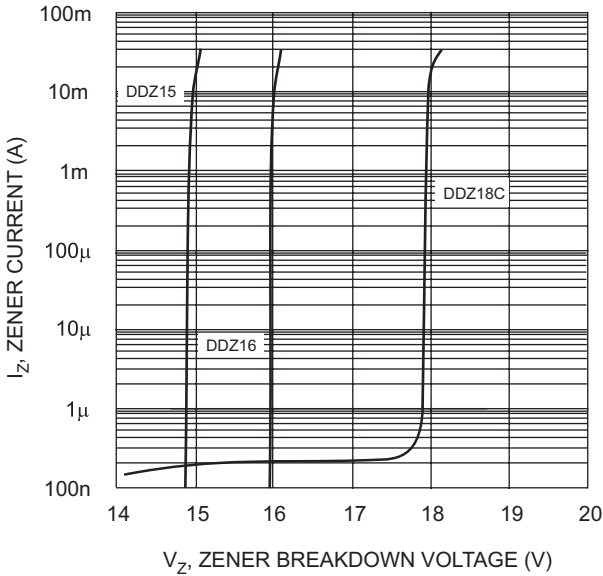
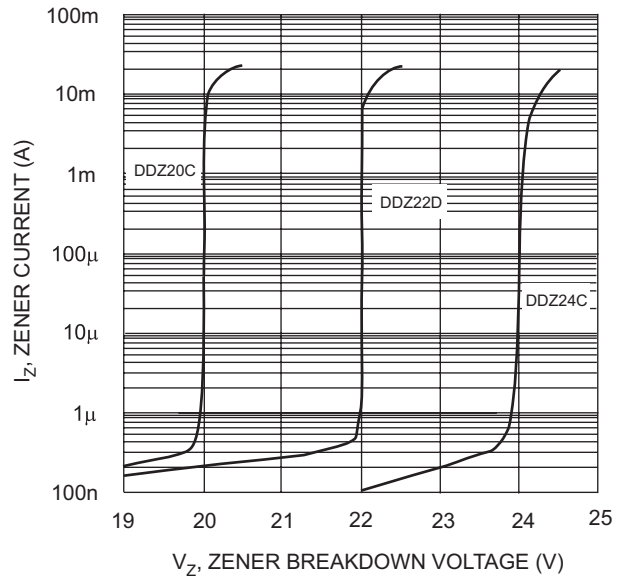


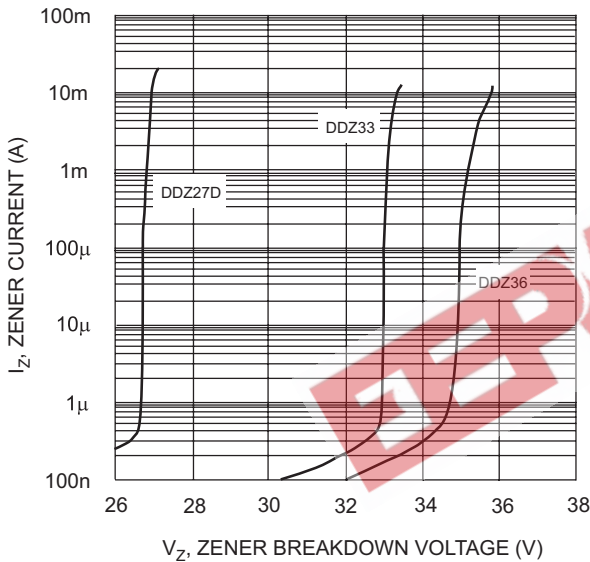
Fig. 4 Typical Reverse Characteristics, DDZ5V6B - DDZ9V1C



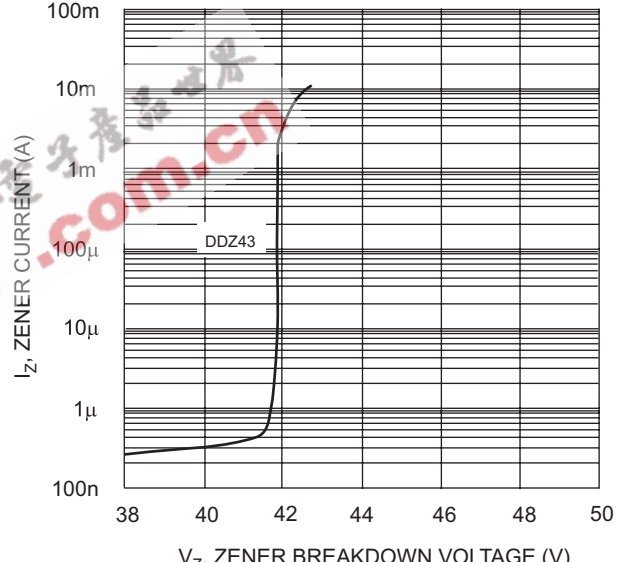
$V_Z$ , ZENER BREAKDOWN VOLTAGE (V)  
Fig. 6 Typical Reverse Characteristics, DDZ15 - DDZ18C



$V_Z$ , ZENER BREAKDOWN VOLTAGE (V)  
Fig. 7 Typical Reverse Characteristics, DDZ20C - DDZ24C



$V_Z$ , ZENER BREAKDOWN VOLTAGE (V)  
Fig. 8 Typical Reverse Characteristics, DDZ27D - DDZ36



$V_Z$ , ZENER BREAKDOWN VOLTAGE (V)  
Fig. 9 Typical Reverse Characteristics, DDZ43

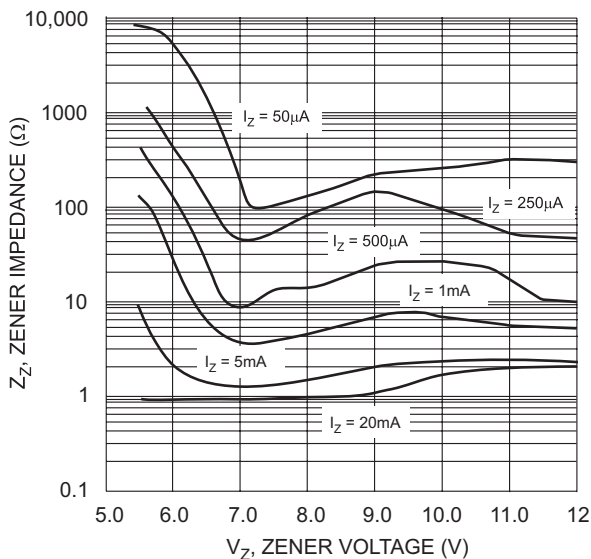


Fig. 10 Typical Zener Impedance Characteristics, DDZ5V6B - DDZ12C

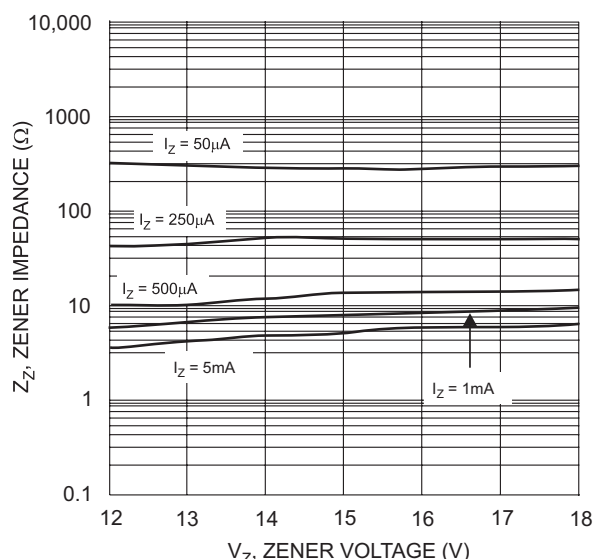


Fig. 11 Typical Zener Impedance Characteristics, DDZ12C - DDZ18C

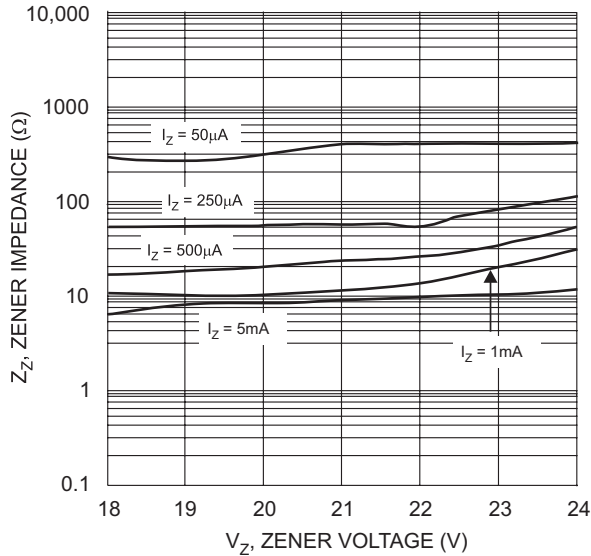


Fig. 12 Typical Zener Impedance Characteristics, DDZ18C - DDZ24C

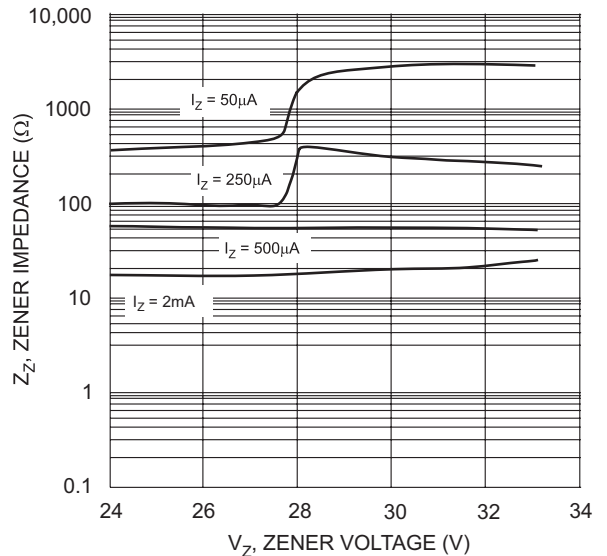


Fig. 13 Typical Zener Impedance Characteristics, DDZ24C - DDZ33

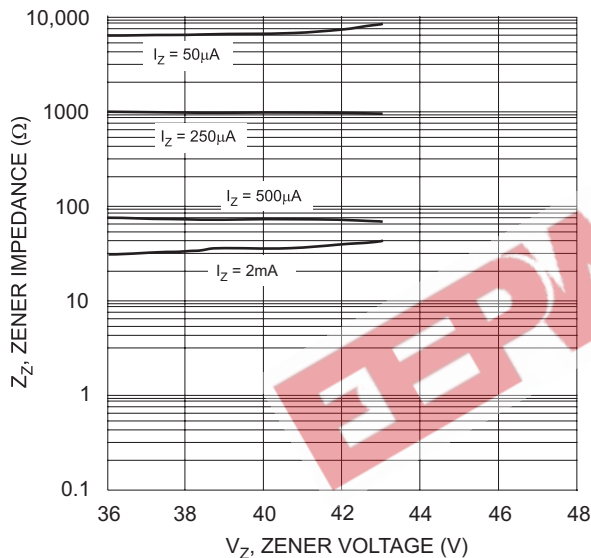


Fig. 14 Typical Zener Impedance Characteristics, DDZ36 - DDZ43

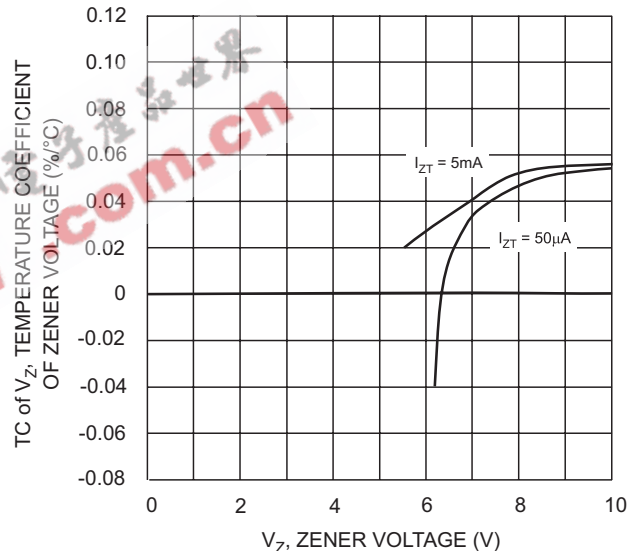


Fig. 15 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ6V2B-DDZ10C

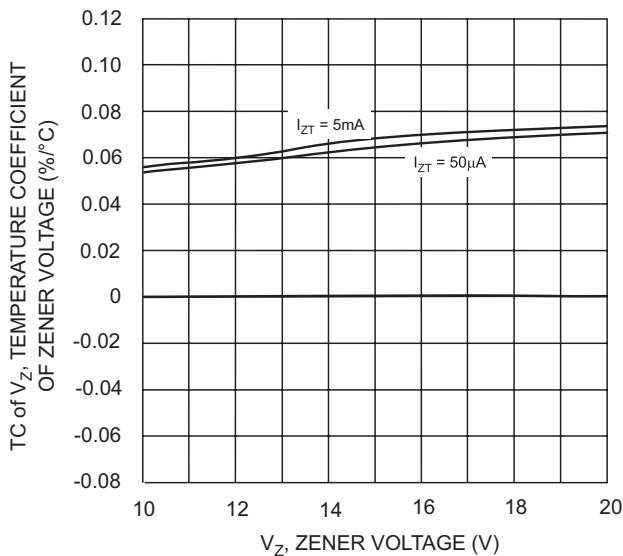


Fig. 16 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ10C-DDZ20C

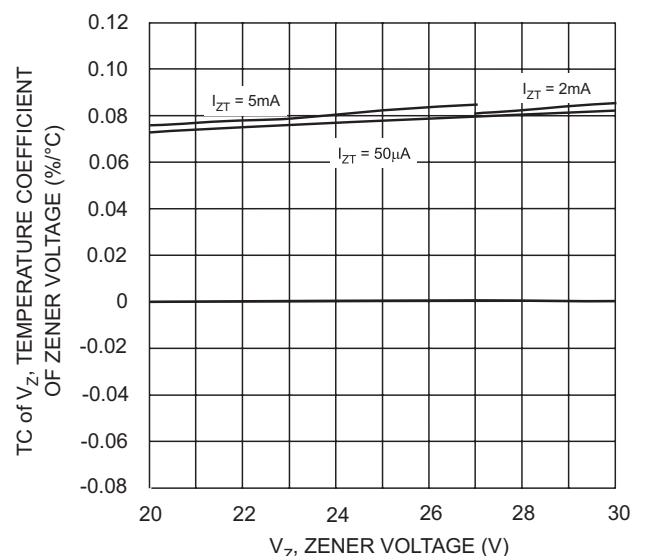


Fig. 17 Typical Temperature Coefficient of Zener Voltage, DDZ20C-DDZ30D

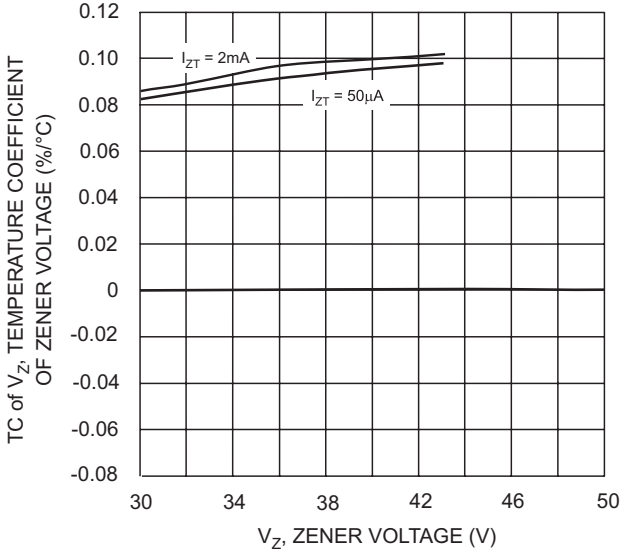


Fig. 18 Typical Temperature Coefficient of Zener Voltage, DDZ30D-DDZ43

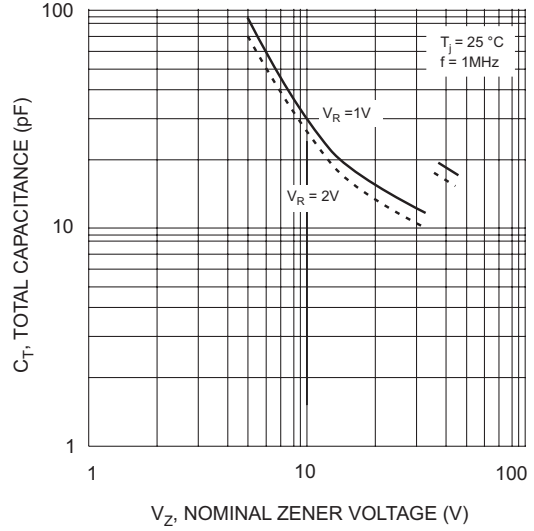


Fig. 19 Total Capacitance vs. Nominal Zener Voltage

**Ordering Information** (Note 6 and 7)

Device	Packaging	Shipping
DDZ(V <sub>Z</sub> Rank)-7*	SOD-123	3000/Tape & Reel

\* Example: The part number for the 6.2 Volt device would be DDZ6V2B-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**



XX = 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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