THE DATASHEET OF

DDZ9709T-7

Features

- Small, Low Profile Surface Mount Package
- Very Sharp Breakdown Characteristics
- Ideally Suited for Automated Assembly Processes
- Very Low Leakage Current
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

- Case: SOD523
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminal Connections: Cathode Band
- Terminals: Finish - Matte Tin Annealed over Alloy 42 Leadframe. Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.002 grams (Approximate)

Top View

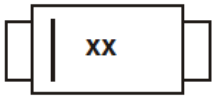
Ordering Information (Note 4)

Part Number	Case	Packaging
(Type Number)-7* (Note 5)	SOD523	3,000/Tape & Reel

*Example: The part number for the 6.2 Volt device would be DDZ9691T-7.

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. For packaging details, go to our website at http://www.diodes.com/products/packages.html.
5. Dispensed in every other cavity of the tape.

Marking Information



xx = Product Type Marking Code
(See Electrical Characteristics Table)

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic		Symbol	Value	Unit
Forward Voltage	@ I_F = 10mA	V_F	0.9	V

Thermal Characteristics

Characteristic		Symbol	Value	Unit
Power Dissipation	(Note 6)	P_D	150	mW
Thermal Resistance, Junction to Ambient Air	(Note 6)	$R_{\theta JA}$	833	°C/W
Operating and Storage Temperature Range		T_J, T_{STG}	-65 to +150	°C

Notes: 6. Device mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/products/packages.html.

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Type Number	Type Code	Zener Voltage Range (Note 7)				Maximum Reverse Leakage Current (Note 8)	
		V_Z @ I_{ZT}			I_{ZT}	I_R @ V_R	
		Nom (V)	Min (V)	Max (V)	µA	µA	V
DDZ9689T	HH	5.1	4.85	5.36	50	5	3
DDZ9690T	HJ	5.6	5.32	5.88	50	2	4
DDZ9691T	HK	6.2	5.89	6.51	50	1	5
DDZ9692T	HL	6.8	6.46	7.14	50	0.1	5.1
DDZ9693T	HM	7.5	7.13	7.88	50	0.1	5.7
DDZ9694T	HN	8.2	7.79	8.61	50	0.1	6.2
DDZ9696T	HP	9.1	8.65	9.56	50	0.1	6.9
DDZ9697T	HQ	10	9.50	10.50	50	0.1	7.6
DDZ9698T	HR	11	10.45	11.55	50	0.05	8.4
DDZ9699T	HS	12	11.40	12.60	50	0.05	9.1
DDZ9700T	HT	13	12.35	13.65	50	0.05	9.8
DDZ9701T	HU	14	13.30	14.70	50	0.05	10.6
DDZ9702T	HV	15	14.25	15.75	50	0.05	11.4
DDZ9703T	HW	16	15.20	16.80	50	0.05	12.1
DDZ9705T	HY	18	17.10	18.90	50	0.05	13.6
DDZ9707T	MD	20	19.00	21.00	50	0.05	15.2
DDZ9708T	ME	22	20.90	23.10	50	0.05	16.7
DDZ9709T	MF	24	22.80	25.20	50	0.05	18.2
DDZ9711T	MH	27	25.65	28.35	50	0.05	20.4
DDZ9712T	MJ	28	26.60	29.40	50	0.05	21.2
DDZ9713T	MK	30	28.50	31.50	50	0.05	22.8
DDZ9714T	ML	33	31.35	34.65	50	0.05	25.0
DDZ9715T	MM	36	34.20	37.80	50	0.05	27.3
DDZ9716T	MN	39	37.05	40.95	50	0.05	29.6
DDZ9717T	MO	43	40.85	45.15	50	0.05	32.6

Notes: 7. Nominal Zener voltage is measured with the device junction in thermal equilibrium at T_T = 30°C ±1°C.
8. Short duration pulse test used to minimize self-heating effect.

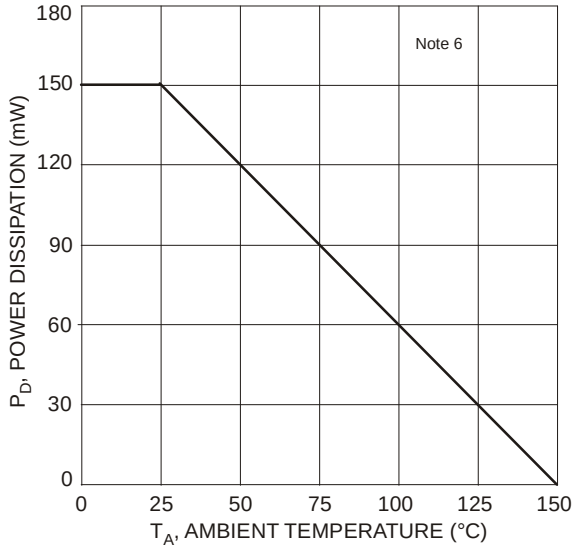


Fig. 1 Power Derating Curve

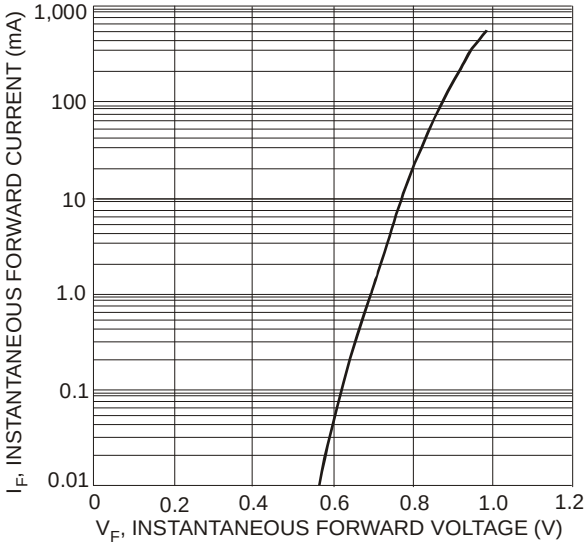


Fig. 2 Typical Forward Characteristics

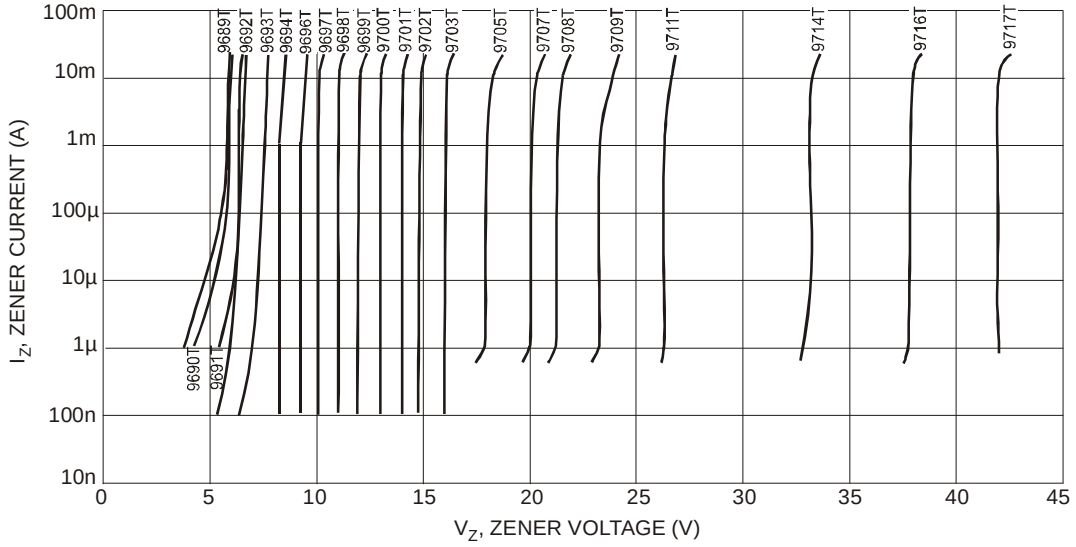


Fig. 3 Typical Zener Breakdown Characteristics

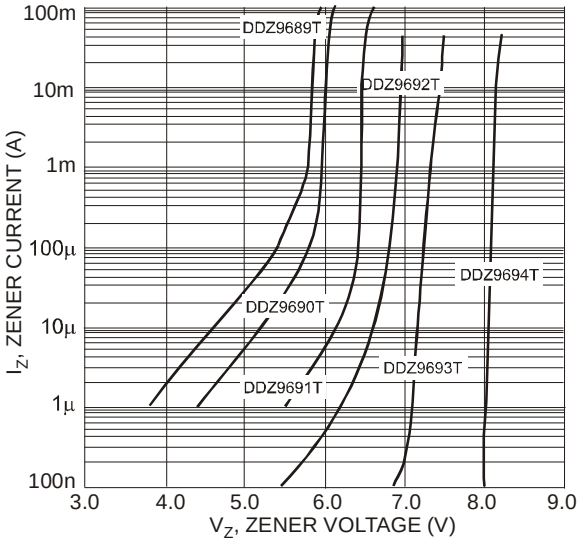


Fig. 4 Typical Zener Breakdown Characteristics, DDZ9692T - DDZ9694T

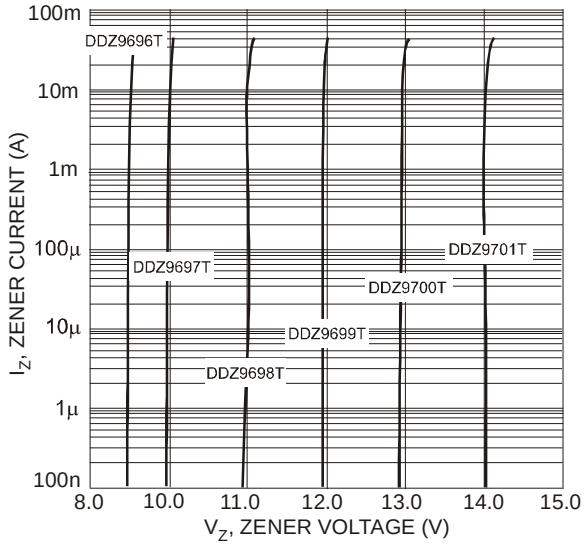


Fig. 5 Typical Zener Breakdown Characteristics, DDZ9696T - DDZ9701T

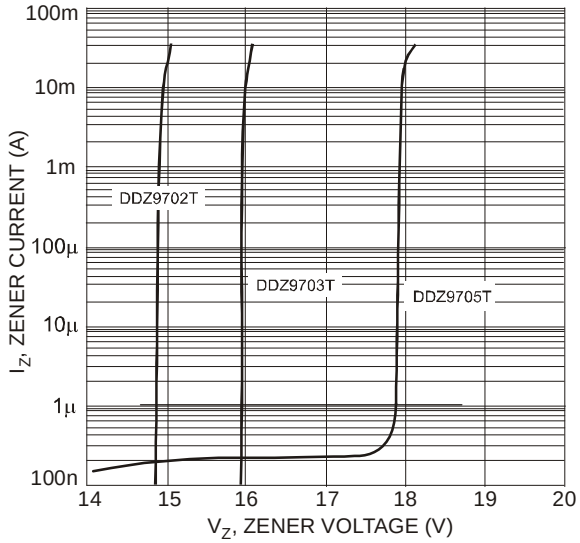


Fig. 6 Typical Zener Breakdown Characteristics, DDZ9702T - DDZ9705T

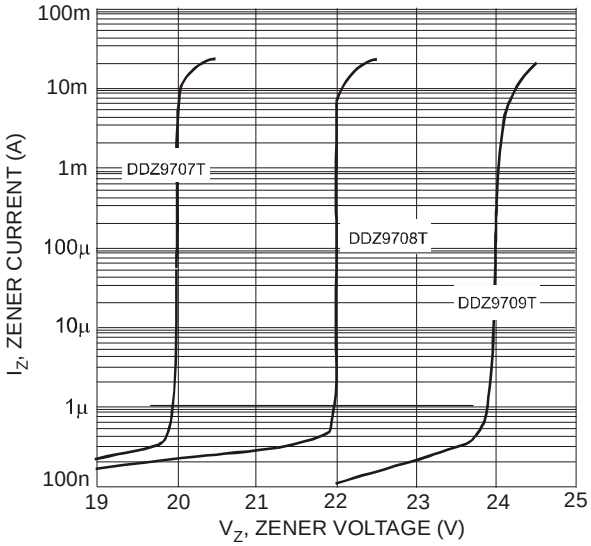


Fig. 7 Typical Zener Breakdown Characteristics, DDZ9707T - DDZ9709T

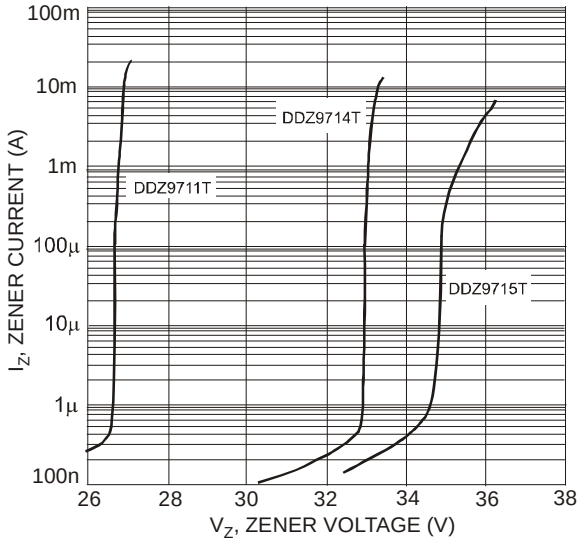


Fig. 8 Typical Zener Breakdown Characteristics DDZ9711T - DDZ9715T

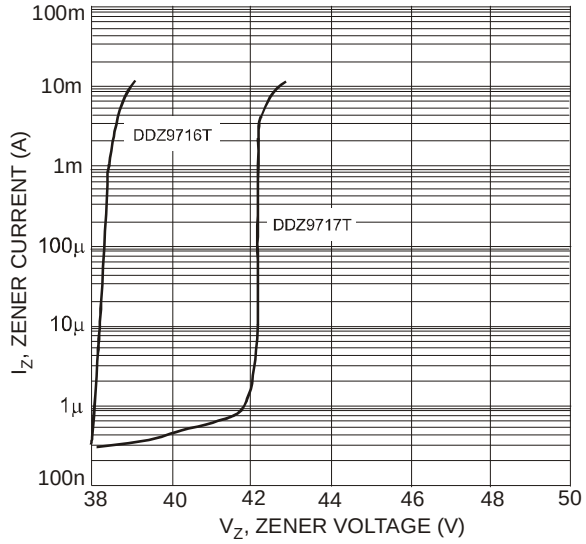


Fig. 9 Typical Zener Breakdown Characteristics DDZ9716T - DDZ9717T

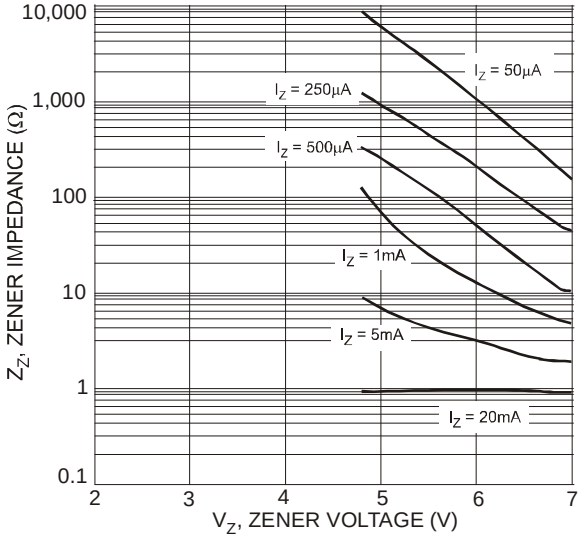


Fig. 10 Typical Zener Impedance Characteristics, DDZ9689T - DDZ9692T

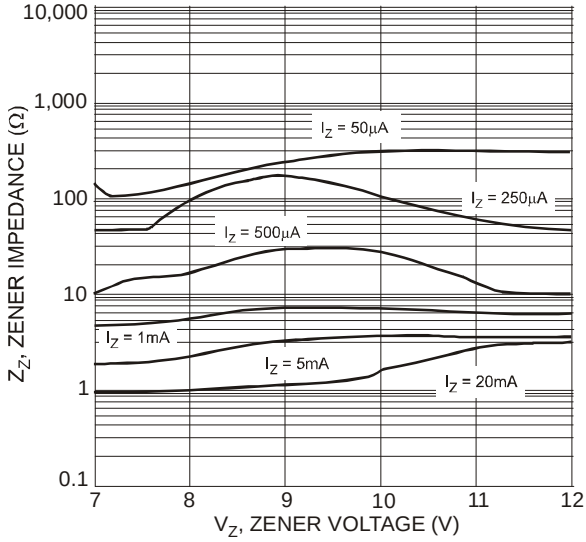


Fig. 11 Typical Zener Impedance Characteristics, DDZ9693T - DDZ9699T

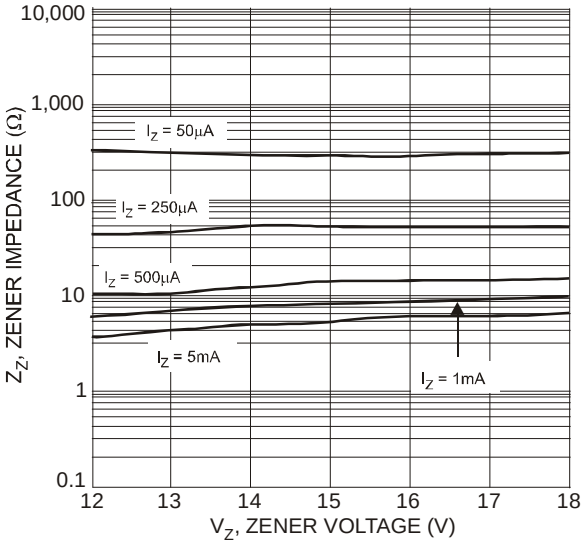


Fig. 12 Typical Zener Impedance Characteristics, DDZ9699T - DDZ9705T

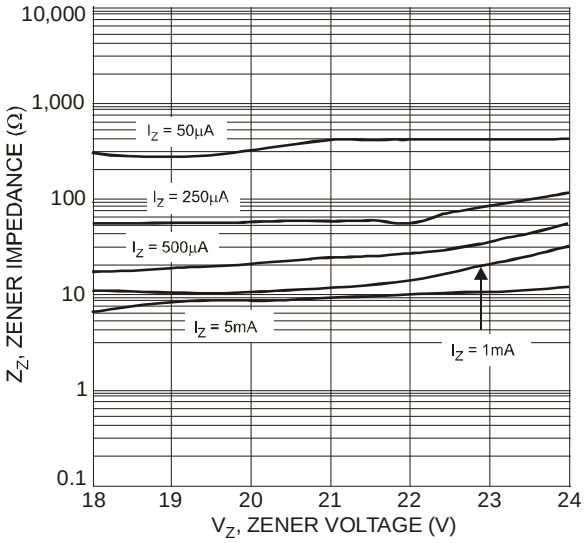


Fig. 13 Typical Zener Impedance Characteristics, DDZ9705T - DDZ9709T

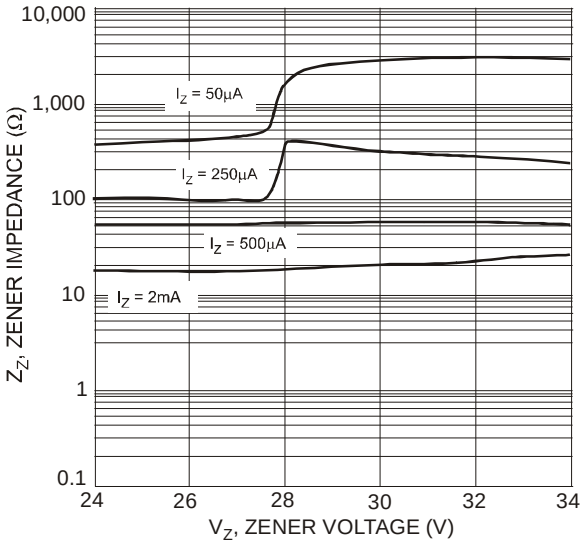


Fig. 14 Typical Zener Impedance Characteristics, DDZ9709T - DDZ9714T

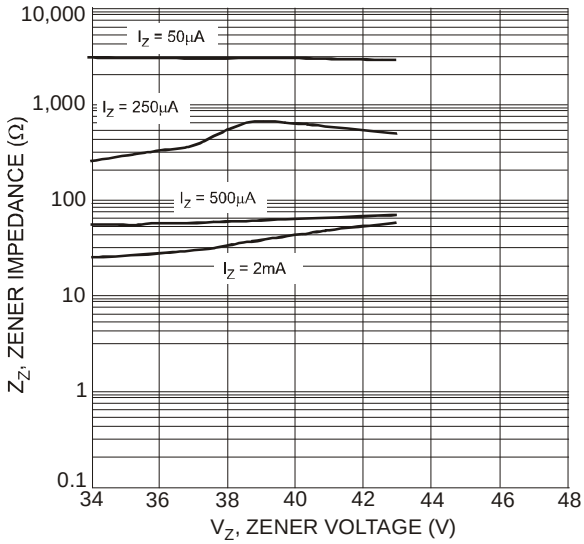


Fig. 15 Typical Zener Impedance Characteristics, DDZ9715T - DDZ9717T

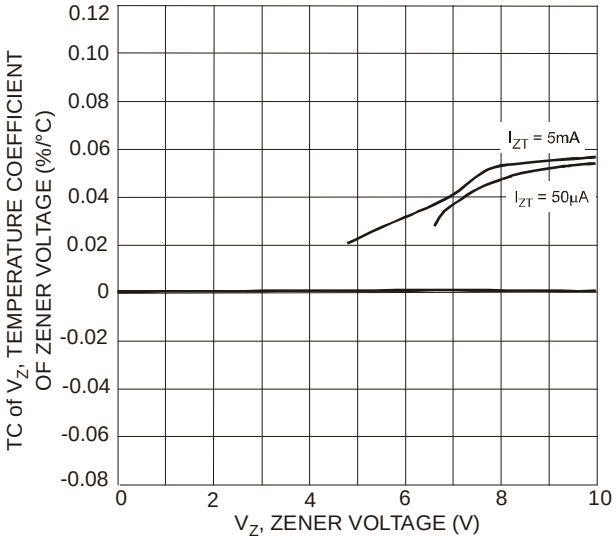


Fig. 16 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ9694T - DDZ9697T

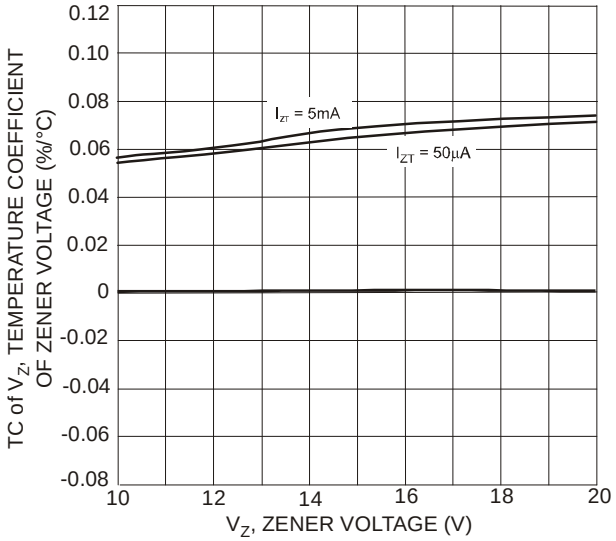


Fig. 17 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ9697T - DDZ9707T

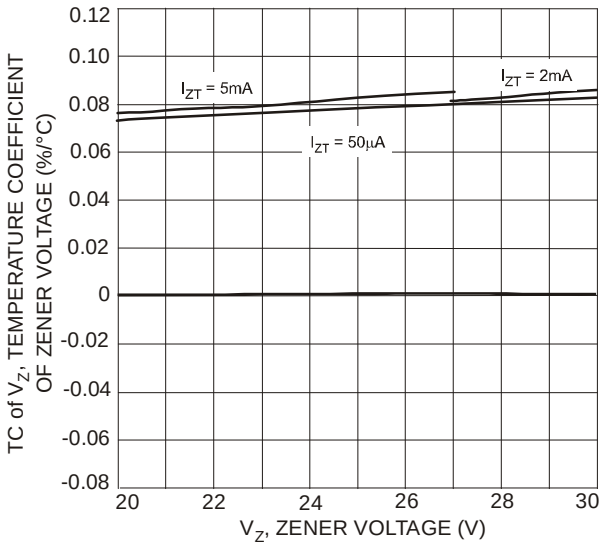


Fig. 18 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ9707T - DDZ9713T

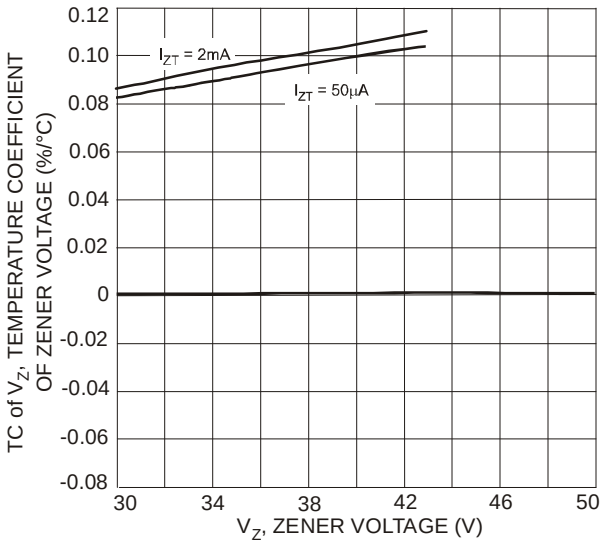
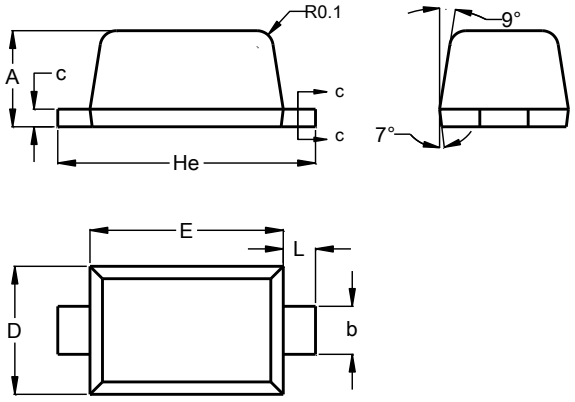


Fig. 19 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, DDZ9713T - DDZ9717T

Package Outline Dimensions

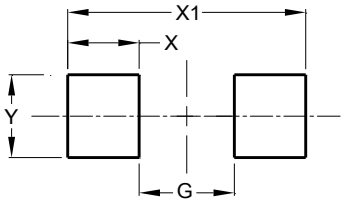
Please see http://www.diodes.com/package-outlines.html for the latest version.



SOD523		
Dim	**Min**	**Max**
A	0.55	0.65
b	0.26	0.34
c	0.11	0.17
D	0.75	0.85
E	1.15	1.25
He	1.55	1.65
L	0.10	0.30
All Dimensions in mm		

Suggested Pad Layout

Please see http://www.diodes.com/package-outlines.html for the latest version.



Dimensions	Value (in mm)
G	0.80
X	0.60
X1	2.00
Y	0.70

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