SURFACE MOUNT PRECISION ZENER DIODE

Features

- Ultra-Small Surface Mount Package
- Ideally suited for Automated Assembly Processes
- Very Sharp Breakdown Characteristics
- Very Tight Tolerance on Zener Breakdown Voltage
- **Lead, Halogen and Antimony Free, RoHS Compliant**
- **"Green" Device (Notes 4 and 5)**

Mechanical Data

- Case: SOD-323
- Case Material: 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
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.004 grams (approximate)



Top View

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 1)	P_D	200	mW
Thermal Resistance Junction to Ambient Air (Note 1)	$R_{\theta JA}$	625	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	°C

Electrical Characteristics @T_A = 25°C unless otherwise specified

Type Number	Marking Code	Zener Voltage Range (Note 2)			Maximum Zener Impedance (Note 3)			Maximum Reverse Current (Note 2)	
		V_{ZT} @ 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
UDZ5V1B	BB	4.980	5.200	5	80	500	0.5	2	1.5
UDZ5V6B	BC	5.490	5.730	5	60	200	0.5	1	2.5
UDZ6V2B	BD	6.060	6.330	5	60	100	0.5	1	3.0
UDZ6V8B	BE	6.650	6.930	5	40	60	0.5	0.5	3.5
UDZ7V5B	BF	7.280	7.600	5	30	60	0.5	0.5	4.0
UDZ8V2B	BG	8.020	8.360	5	30	60	0.5	0.5	5.0
UDZ9V1B	BH	8.850	9.230	5	30	60	0.5	0.5	6.0
UDZ10B	BI	9.770	10.210	5	30	60	0.5	0.1	7.0
UDZ11B	BJ	10.760	11.220	5	30	60	0.5	0.1	8.0
UDZ12B	BK	11.740	12.240	5	30	80	0.5	0.1	9.0
UDZ13B	BL	12.910	13.490	5	37	80	0.5	0.1	10.0
UDZ15B	BM	14.340	14.980	5	42	80	0.5	0.1	11.0

Notes:
1. Part mounted on FR-4 PC board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
2. Short duration pulse test used to minimize self-heating effect.
3. The Zener impedances (Z_{ZT}, Z_{ZK}) are measured by superimposing a minute alternating current on the regulated current (IZ).
4. No purposefully added lead. Halogen and Antimony Free.
5. Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb_2O_3 Fire Retardants.

© Diodes Incorporated

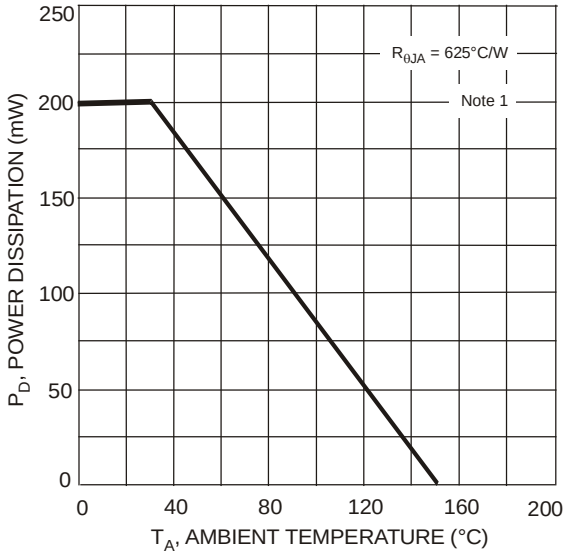


Fig. 1 Power Derating Curve

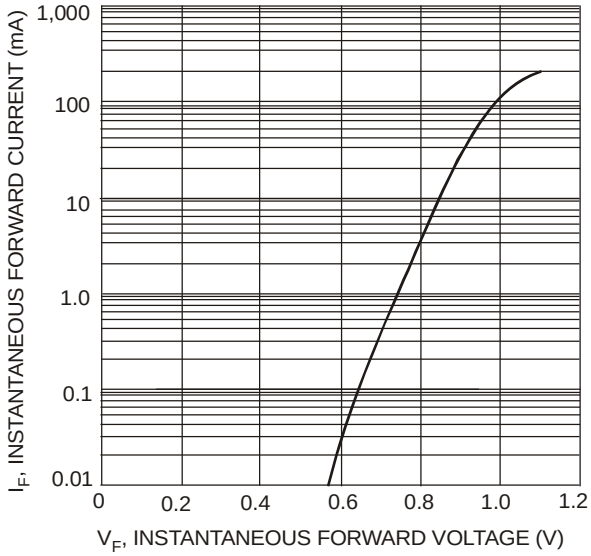


Fig. 2 Typical Forward Characteristics

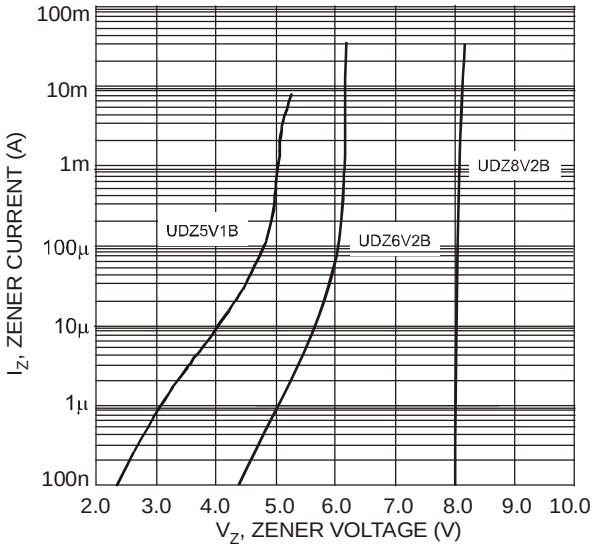


Fig. 3 Typical Zener Breakdown Characteristics, UDZ5V1B - UDZ8V2B

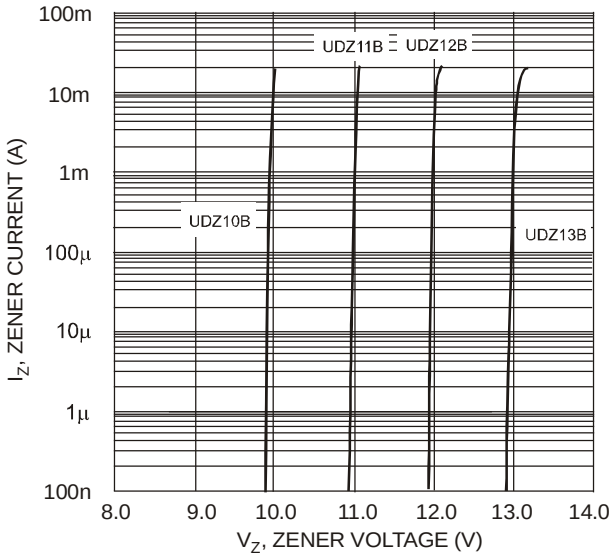


Fig. 4 Typical Zener Breakdown Characteristics, UDZ10B - UDZ13B

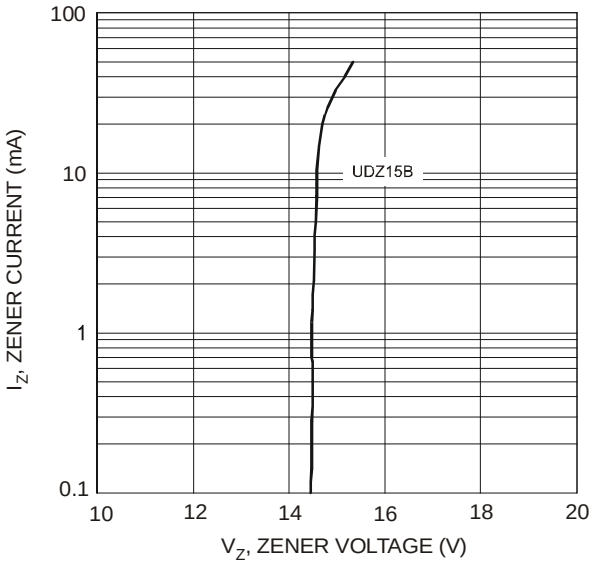


Fig. 5 Typical Zener Breakdown Characteristics, UDZ15B

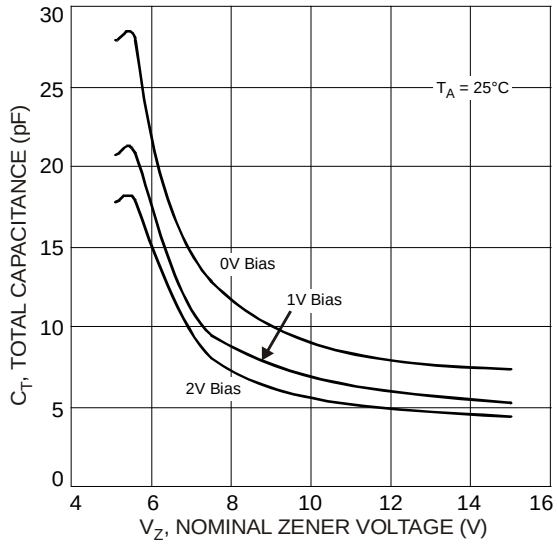


Fig. 6 Typical Total Capacitance vs. Nominal Zener Voltage

© Diodes Incorporated

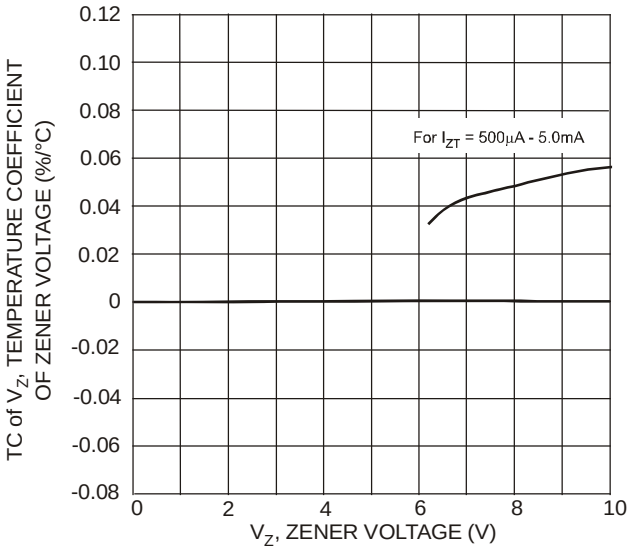


Fig. 7 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, UDZ6V2B-UDZ10B

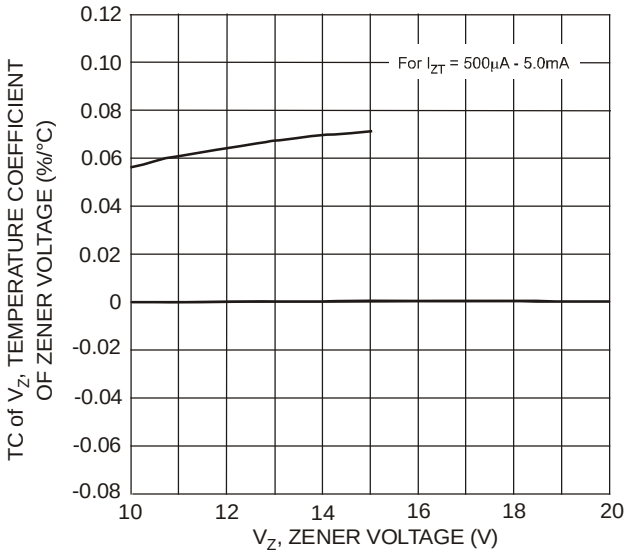


Fig. 8 Typical Temperature Coefficient of Zener Voltage vs. Zener Voltage, UDZ10B-UDZ15B

Ordering Information (Note 6)

Device	Packaging	Shipping
(Type Number)-7*	SOD-323	3000/Tape & Reel

* Add "-7" to the appropriate type number in Electrical Characteristics Table from Page 1 example: 6.2V Zener = UDZ6V2B-7.

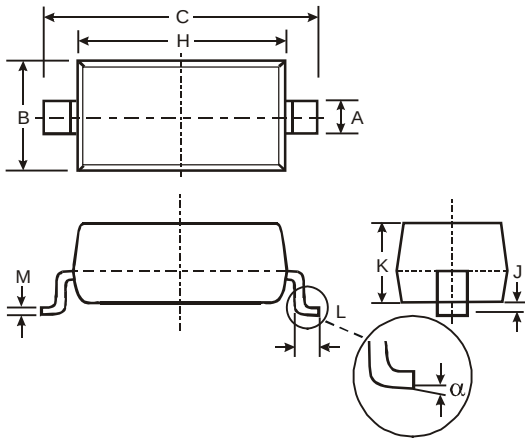
Notes: 6. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



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

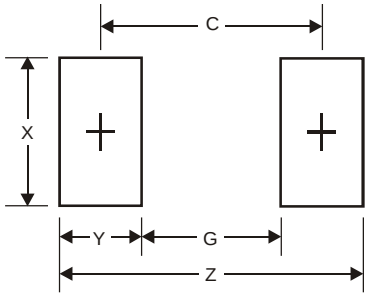
Package Outline Dimensions



SOD-323		
Dim	**Min**	**Max**
A	0.25	0.35
B	1.20	1.40
C	2.30	2.70
H	1.60	1.80
J	0.00	0.10
K	1.0	1.1
L	0.20	0.40
M	0.10	0.15
α	0°	8°
All Dimensions in mm		

© Diodes Incorporated

Suggested Pad Layout



Dimensions	Value (in mm)
Z	3.75
G	1.05
X	0.65
Y	1.35
C	2.40

IMPORTANT NOTICE

Diodes Incorporated and its subsidiaries reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. Diodes Incorporated does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold Diodes Incorporated and all the companies whose products are represented on our website, harmless against all damages.

LIFE SUPPORT

Diodes Incorporated products are not authorized for use as critical components in life support devices or systems without the expressed written approval of the President of Diodes Incorporated.

© Diodes Incorporated