

Small Signal Zener Diodes


DESIGN SUPPORT TOOLS
[click logo to get started](#)
3D
Models
Available

FEATURES

- Silicon planar Zener diodes
- Low Zener impedance and low leakage current
- Popular in Asian designs
- Compact surface mount device
- Ideal for automated mounting
- AEC-Q101 qualified available
- ESD capability according to AEC-Q101:
human body model > 8 kV
machine model > 800 V
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

 AUTOMOTIVE
GRADE
Available

RoHS
COMPLIANT

PRIMARY CHARACTERISTICS

PARAMETER	VALUE	UNIT
V _Z range nom.	2.0 to 36	V
Test current I _{ZT}	5	mA
V _Z specification	Pulse current	
Circuit configuration	Single	

ORDERING INFORMATION

DEVICE NAME	ORDERING CODE	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
GDZ-series	GDZ2V0B-E3-08 to GDZ36B-E3-08	3000 (8 mm tape on 7" reel)	15 000/box
	GDZ2V0B-HE3-08 to GDZ36B-HE3-08		
	GDZ2V0B-E3-18 to GDZ36B-E3-18	10 000 (8 mm tape on 13" reel)	10 000/box
	GDZ2V0B-HE3-18 to GDZ36B-HE3-18		

PACKAGE

PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
SOD-323	4.3 mg	UL 94 V-0	MSL level 1 (according J-STD-020)	260 °C/10 s at terminals

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Power dissipation		P _{tot}	200	mW
Junction temperature		T _j	150	°C
Storage temperature range		T _{stg}	-55 to +150	°C
Operating temperature range		T _{op}	-55 to +150	°C



ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)									
PART NUMBER	MARKING CODE	ZENER VOLTAGE RANGE		TEST CURRENT		REVERSE CURRENT		DYNAMIC RESISTANCE	
		V_Z at I_{ZT1}		I_{ZT1}	I_{ZT2}	I_R at V_R		Z_Z at I_{ZT1}	Z_{ZK} at I_{ZT2}
		V		mA		μA	V	Ω	
		MIN.	MAX.			MAX.		MAX.	MAX.
GDZ2V0B	02	2.02	2.2	5	0.5	120	0.5	100	1000
GDZ2V2B	12	2.22	2.41	5	0.5	120	0.7	100	1000
GDZ2V4B	22	2.43	2.63	5	0.5	120	1	100	1000
GDZ2V7B	32	2.69	2.91	5	0.5	100	1	110	1000
GDZ3V0B	42	3.01	3.22	5	0.5	50	1	120	1000
GDZ3V3B	52	3.32	3.53	5	0.5	20	1	120	1000
GDZ3V6B	62	3.6	3.845	5	1	10	1	100	1000
GDZ3V9B	72	3.89	4.16	5	1	5	1	100	1000
GDZ4V3B	82	4.17	4.43	5	1	5	1	100	1000
GDZ4V7B	92	4.55	4.75	5	0.5	2	1	100	800
GDZ5V1B	T1	4.98	5.2	5	0.5	2	1	80	500
GDZ5V6B	T2	5.49	5.73	5	0.5	1	2.5	60	200
GDZ6V2B	T3	6.06	6.33	5	0.5	1	3	60	100
GDZ6V8B	T4	6.65	6.93	5	0.5	0.5	3.5	40	60
GDZ7V5B	T5	7.28	7.6	5	0.5	0.5	4	30	60
GDZ8V2B	T6	8.02	8.36	5	0.5	0.5	5	30	60
GDZ9V1B	T7	8.85	9.23	5	0.5	0.5	6	30	60
GDZ10B	T8	9.77	10.21	5	0.5	0.1	7	30	60
GDZ11B	T9	10.76	11.22	5	0.5	0.1	8	30	60
GDZ12B	TA	11.74	12.24	5	0.5	0.1	9	30	80
GDZ13B	TB	12.91	13.49	5	0.5	0.1	10	37	80
GDZ15B	TC	14.34	14.98	5	0.5	0.1	11	42	80
GDZ16B	TD	15.85	16.51	5	0.5	0.1	12	50	80
GDZ18B	TE	17.56	18.35	5	0.5	0.1	13	65	80
GDZ20B	TH	19.52	20.39	5	0.5	0.1	15	85	100
GDZ22B	TK	21.54	22.47	5	0.5	0.1	17	100	100
GDZ24B	TL	23.72	24.78	5	0.5	0.1	19	120	120
GDZ27B	TM	26.19	27.53	5	0.5	0.1	21	150	150
GDZ30B	TN	29.19	30.69	5	0.5	0.1	23	200	200
GDZ33B	TP	32.15	33.79	5	0.5	0.1	25	250	250
GDZ36B	TT	35.07	36.87	5	0.5	0.1	27	300	300

Notes

- The Zener voltage V_Z is measured 40 ms after power is supplied
- The operating resistance (Z_Z , Z_{ZK}) are measured by superimposing a 1 kHz alternating current on the regulated current (I_Z).

TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

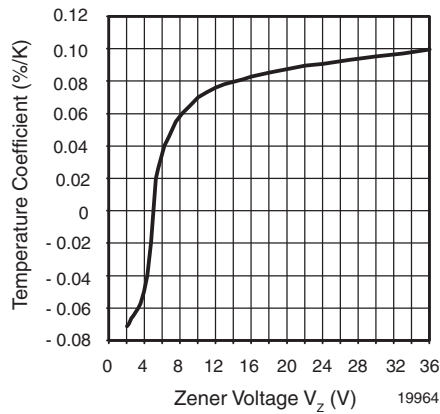
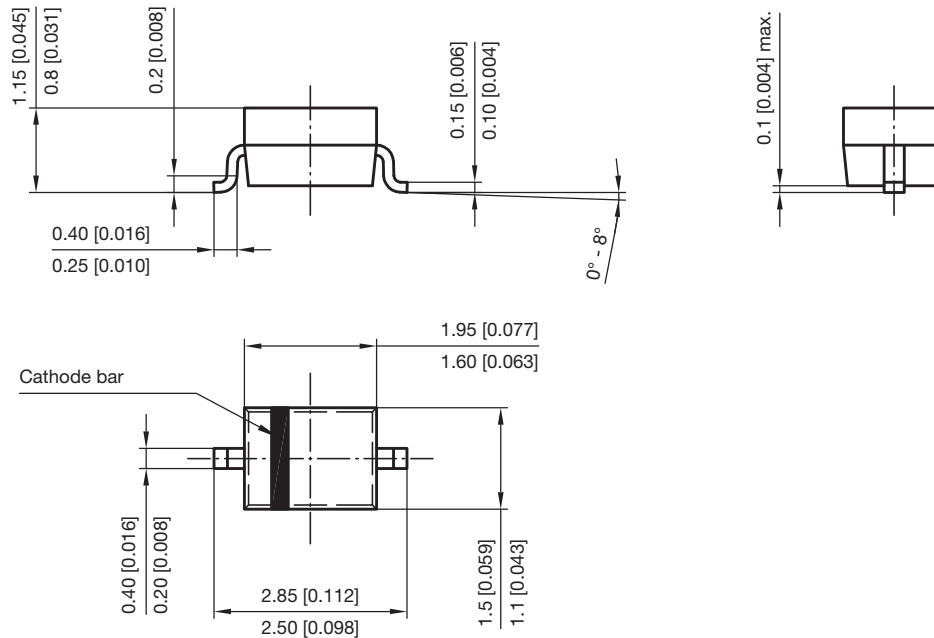


Fig. 1 - Zener Voltage Temperature Coefficient vs. Zener Voltage

PACKAGE DIMENSIONS in millimeters (inches): **SOD-323**



Footprint recommendation:

Document no.: S8-V-3910.02-001 (4)
 Created - Date: 24.August.2004
 Rev. 6 - Date: 23.Sept.2016
 17443



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.