Surface-Mount Power Voltage-Regulating Diodes



SMBG (DO-215AA)

ADDITIONAL RESOURCES

3D Models

PRIMARY CHARACTERISTICS	
V_Z	9.1 V to 68 V
P_{tot}	1500 mW
I_R (V_Z > 12 V)	5.0 µA
T_J max.	150 °C
V_Z specification	Pulse current
Package	SMBG (DO-215AA)
Circuit configuration	Single

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Low Zener impedance
- Low regulation factor
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

TYPICAL APPLICATIONS

For general purpose regulation, industrial, and protection applications.

MECHANICAL DATA

Case: SMBG (DO-215AA)

Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS compliant, industrial grade Base P/NHE3 - RoHS compliant, AEC-Q101 qualified

Terminals: matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
E3, HE3 suffix meet JESD 201 class 2 whisker test

Polarity: color band denotes cathode end

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**VALUE**	**UNIT**
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	°C

For technical questions within your region: DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

PART NUMBER	DEVICE MARKING CODE	ZENER VOLTAGE RANGE			TEST CURRENT		MAXIMUM ZENER IMPEDANCE		MAXIMUM REVERSE CURRENT		MAXIMUM ZENER CURRENT (1)
		V_Z AT I_{ZT}			I_{ZT}	I_{ZK}	Z_{ZT} AT I_{ZT}	Z_{ZK} AT I_{ZK}	I_R AT V_R		I_{ZM}
		V			mA		Ω		µA	V	mA
		MIN.	NOM.	MAX.			MAX.	MAX.	MAX.		MAX.
SMZG3788B	VL	8.65	9.1	9.56	41.2	0.50	4.0	1000	50	7.0	140
SMZG3789B	WB	9.50	10	10.5	37.5	0.25	5.0	1000	50	7.6	125
SMZG3790B	WD	10.5	11	11.6	34.1	0.25	6.0	650	10	8.4	115
SMZG3791B	WF	11.4	12	12.6	31.2	0.25	7.0	550	5.0	9.1	105
SMZG3792B	WH	12.4	13	13.7	28.8	0.25	7.5	550	5.0	9.9	98
SMZG3793B	WJ	14.3	15	15.8	25.0	0.25	9.0	600	5.0	11.4	85
SMZG3794B	WL	15.2	16	16.8	23.4	0.25	10.0	600	5.0	12.2	80
SMZG3795B	XB	17.1	18	18.9	20.8	0.25	12.0	650	5.0	13.7	70
SMZG3796B	XD	19.0	20	21.0	18.7	0.25	14.0	650	5.0	15.2	62
SMZG3797B	XF	20.9	22	23.1	17.0	0.25	17.5	650	5.0	16.7	56
SMZG3798B	XH	22.8	24	25.2	15.6	0.25	19.0	700	5.0	18.2	51
SMZG3799B	XJ	25.7	27	28.4	13.9	0.25	23.0	700	5.0	20.6	46
SMZG3800B	XL	28.5	30	31.5	12.5	0.25	26.0	750	5.0	22.8	41
SMZG3801B	YB	31.4	33	34.7	11.4	0.25	33.0	800	5.0	25.1	38
SMZG3802B	YD	34.2	36	37.8	10.4	0.25	38.0	850	5.0	27.4	35
SMZG3803B	YF	37.1	39	41.0	9.6	0.25	45.0	900	5.0	29.7	31
SMZG3804B	YH	40.9	43	45.2	8.7	0.25	53.0	950	5.0	32.7	28
SMZG3805B	YJ	44.7	47	49.4	8.0	0.25	67.0	1000	5.0	35.8	26
SMZG3806B	YL	48.5	51	53.6	7.3	0.25	70.0	1100	5.0	38.8	24
SMZG3807B	ZB	53.2	56	58.8	6.7	0.25	86.0	1300	5.0	42.6	22
SMZG3808B	ZD	58.9	62	65.1	6.0	0.25	100.0	1500	5.0	47.1	20
SMZG3809B	ZF	64.6	68	71.4	5.5	0.25	120.0	1700	5.0	51.7	18

Note

(1) Maximum steady state power dissipation is 1500 mW at T_L = 75 °C (fig. 1)

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SMZG3788B-E3/52	0.096	52	750	7" diameter plastic tape and reel
SMZG3788B-E3/5B	0.096	5B	3200	13" diameter plastic tape and reel
SMZG3788BHE3/52 (1)	0.096	52	750	7" diameter plastic tape and reel
SMZG3788BHE3/5B (1)	0.096	5B	3200	13" diameter plastic tape and reel

Note

(1) AEC-Q101 qualified

For technical questions within your region: DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

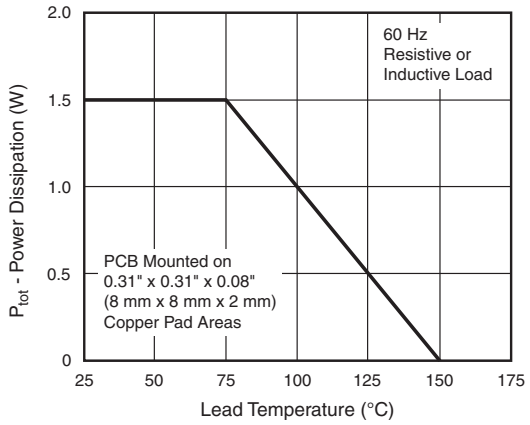


Fig. 1 - Maximum Continuous Power Dissipation

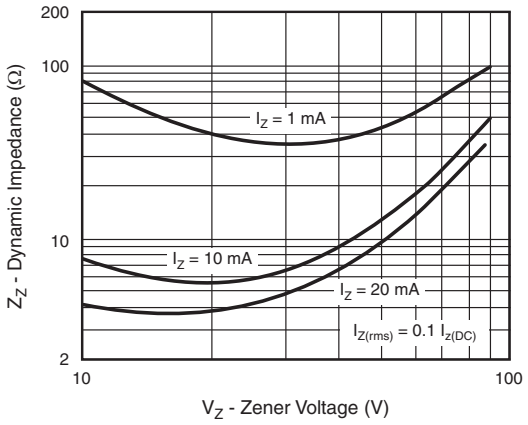


Fig. 3 - Typical Zener Impedance

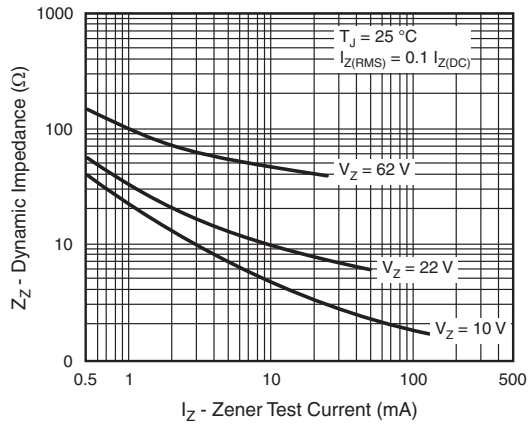


Fig. 2 - Typical Zener Impedance

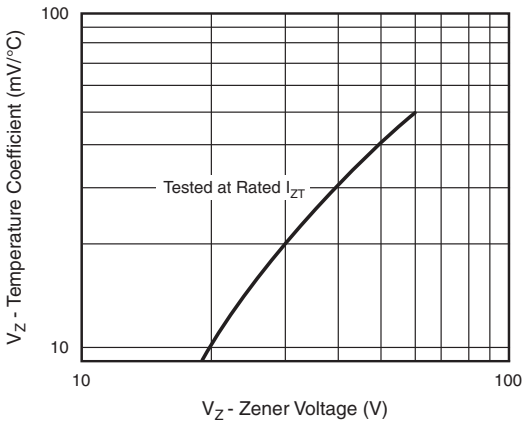
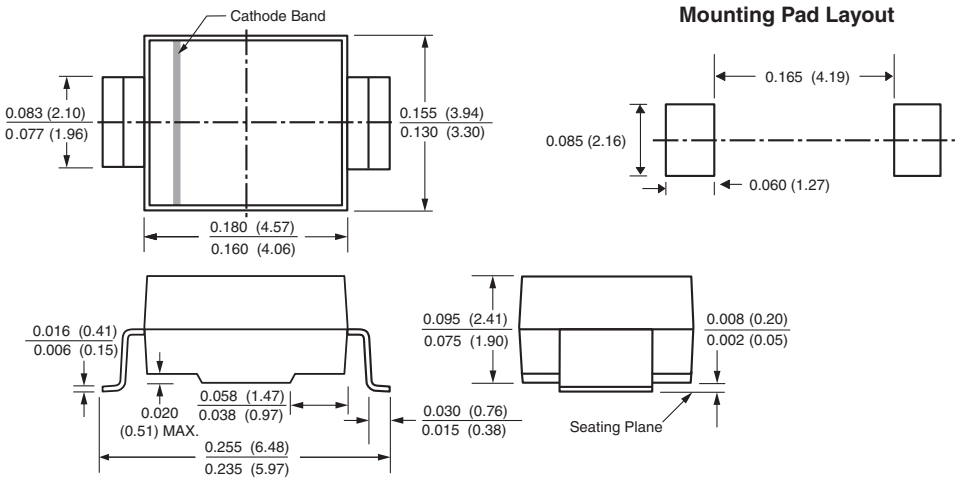


Fig. 4 - Typical Temperature Coefficients

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

SMBG (DO-215AA)



For technical questions within your region: DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com
THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishay.com/doc?91000

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.

© 2022 VISHAY INTERTECHNOLOGY, INC. ALL RIGHTS RESERVED