

SMZG3788 thru SMZG3809B

Vishay General Semiconductor

Surface Mount Power Voltage-Regulating Diodes



DO-215AA (SMBG)

9.1 V to 68 V

1.5 W

5.0 µA

150 °C

PRIMARY CHARACTERISTICS

 V_Z

 $\frac{P_{D}}{I_{R} (V_{Z} > 12 \text{ V})}$

T_{.1} max.

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 COMPLIANT maximum peak of 260 °C
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Find out more about Vishay's Automotive Grade Product requirements at: <u>www.vishav.com/applications</u>

TYPICAL APPLICATIONS

For general purpose regulation and protection applications.

MECHANICAL DATA

Case: DO-215AA (SMBG)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS compliant, commercial grade Base P/NHE3 - RoHS compliant, automotive grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS ($T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	SYMBOL	VALUE	UNIT			
Operating junction and storage temperature range	T _J , T _{STG}	- 55 to + 150	°C			

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RoHS

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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)									
PART NUMBER ⁽¹⁾ DEVICE MARKIN CODE	DEVICE ZENER MARKING VOLTAGE	TEST CURRENT	MAX. ZENER IMPEDANCE LEAKAGE CURRENT		MAX. REVERSE CURRENT		MAX. ZENER CUBBENT		
	CODE	V _Z AT I _{ZT}	I _{ZT} (mA)	Z _{ZT} AT I _{ZT}	Z _{ZK} A	T I _{ZK}	I _R AT V _R		I _{ZM}
		(V)	(1114)	(Ω)	(Ω)	(mA)	(A)	(V)	(mA) ⁽²⁾
SMZG3788A,B	VK,L	9.1	41.2	4.0	1000	0.50	50	7.0	140
SMZG3789A,B	WA,B	10	37.5	5.0	1000	0.25	50	7.6	125
SMZG3790A,B	WC,D	11	34.1	6.0	650	0.25	10	8.4	115
SMZG3791A,B	WE,F	12	31.2	7.0	550	0.25	5.0	9.1	105
SMZG3792A,B	WG,H	13	28.8	7.5	550	0.25	5.0	9.9	98
SMZG3793A,B	WI,J	15	25.0	9.0	600	0.25	5.0	11.4	85
SMZG3794A,B	WK,L	16	23.4	10	600	0.25	5.0	12.2	80
SMZG3795A,B	XA,B	18	20.8	12	650	0.25	5.0	13.7	70
SMZG3796A,B	XC,D	20	18.7	14	650	0.25	5.0	15.2	62
SMZG3797A,B	XE,F	22	17.0	17.5	650	0.25	5.0	16.7	56
SMZG3798A,B	XG,H	24	15.6	19	700	0.25	5.0	18.2	51
SMZG3799A,B	XI,J	27	13.9	23	700	0.25	5.0	20.6	46
SMZG3800A,B	XK,L	30	12.5	26	750	0.25	5.0	22.8	41
SMZG3801A,B	YA,B	33	11.4	33	800	0.25	5.0	25.1	38
SMZG3802A,B	YC,D	36	10.4	38	850	0.25	5.0	27.4	35
SMZG3803A,B	YE,F	39	9.6	45	900	0.25	5.0	29.7	31
SMZG3804A,B	YG,H	43	8.7	53	950	0.25	5.0	32.7	28
SMZG3805A,B	YI,J	47	8.0	67	1000	0.25	5.0	35.8	26
SMZG3806A,B	YK,L	51	7.3	70	1100	0.25	5.0	38.8	24
SMZG3807A,B	ZA,B	56	6.7	86	1300	0.25	5.0	42.6	22
SMZG3808A,B	ZC,D	62	6.0	100	1500	0.25	5.0	47.1	20
SMZG3809A,B	ZE,F	68	5.5	120	1700	0.25	5.0	51.7	18

Notes:

 $^{(1)}$ Suffix "A" denotes \pm 10 % and suffix "B" denotes \pm 5 %

 $^{(2)}$ Maximum steady state power dissipation is 1.5 W at T_L = 75 °C (fig. 1)

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
SMZG3788A-E3/52	0.096	52	750	7" diameter plastic tape and reel		
SMZG3788A-E3/5B	0.096	5B	3200	13" diameter plastic tape and reel		
SMZG3788AHE3/52 ⁽¹⁾	0.096	52	750	7" diameter plastic tape and reel		
SMZG3788AHE3/5B (1)	0.096	5B	3200	13" diameter plastic tape and reel		

Note:

⁽¹⁾ Automotive grade

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RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)



Figure 1. Maximum Continuous Power Dissipation



Figure 2. Typical Zener Impedance



Figure 3. Typical Zener Impedance



Figure 4. Typical Temperature Coefficients

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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For technical questions within your region, please contact one of the following: <u>DiodesAmericas@vishay.com</u>, <u>DiodesAsia@vishay.com</u>, <u>DiodesEurope@vishay.com</u>

www.vishay.com



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