

Surface Mount Power Voltage-Regulating Diodes


DO-215AA (SMBG)

PRIMARY CHARACTERISTICS	
V_Z	9.1 V to 68 V
P_D	1.5 W
$I_R (V_Z > 12 V)$	5.0 μA
$T_J \text{ max.}$	150 °C

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
- 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: www.vishay.com/applications

 AUTOMOTIVE
GRADE
Available

RoHS
COMPLIANT

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

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)									
PART NUMBER ⁽¹⁾	DEVICE MARKING CODE	NOMINAL ZENER VOLTAGE V_Z AT I_{ZT} (V)	TEST CURRENT I_{ZT} (mA)	MAX. ZENER IMPEDANCE LEAKAGE CURRENT			MAX. REVERSE CURRENT I_R AT V_R		MAX. ZENER CURRENT I_{ZM} (mA) ⁽²⁾
				Z_{ZT} AT I_{ZT}	Z_{ZK} AT I_{ZK}		(A)	(V)	
				(Ω)	(Ω)	(mA)			
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 $T_L = 75\text{ }^\circ\text{C}$ (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

RATINGS AND CHARACTERISTICS CURVES

($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

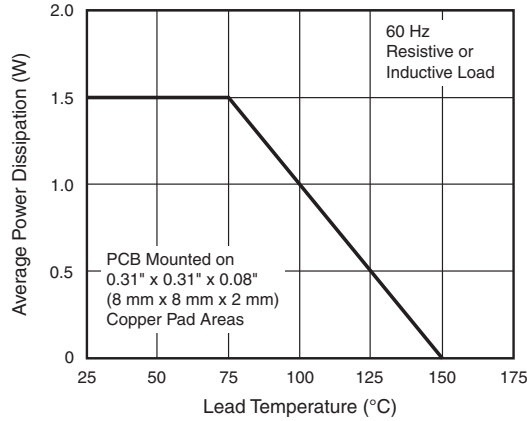


Figure 1. Maximum Continuous Power Dissipation

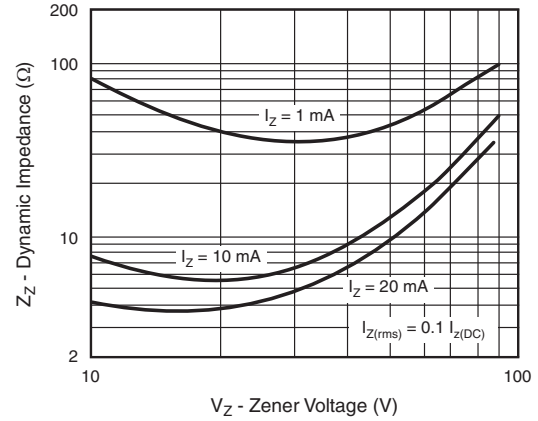


Figure 3. Typical Zener Impedance

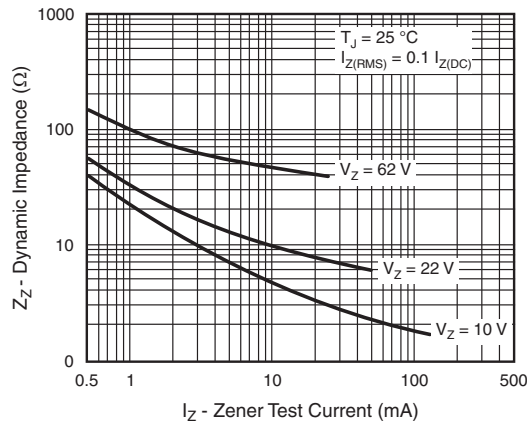


Figure 2. Typical Zener Impedance

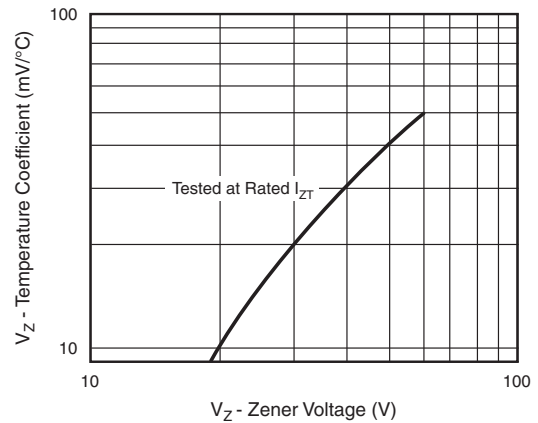
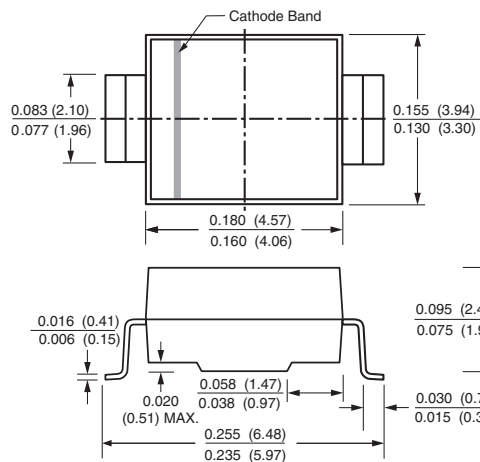


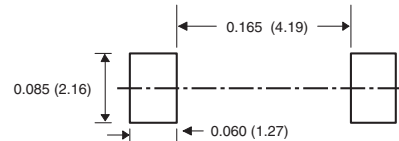
Figure 4. Typical Temperature Coefficients

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-215AA (SMBG)



Mounting Pad Layout





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