

Surface Mount Power Voltage-Regulating Diodes



DO-214AA (SMBJ)

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
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


RoHS
COMPLIANT

TYPICAL APPLICATIONS

For general purpose regulation and protection applications.

PRIMARY CHARACTERISTICS

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

MECHANICAL DATA

Case: DO-214AA (SMBJ)

Molding compound meets UL 94 V-0 flammability rating

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

Base P/NHE3 - RoHS compliant, high reliability/automotive grade (AEC Q101 qualified)

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-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 ($T_A = 25 \text{ }^\circ\text{C}$ 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	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)
				Z_{ZT} AT I_{ZT}	Z_{ZK} AT I_{ZK}		I_R AT V_R	I_R AT V_R	
					(Ω)	(Ω)			
SMZJ3788A,B	VK,L	9.1	41.2	4.0	1000	0.50	50	7.0	140
SMZJ3789A,B	WA,B	10	37.5	5.0	1000	0.25	50	7.6	125
SMZJ3790A,B	WC,D	11	34.1	6.0	650	0.25	10	8.4	115
SMZJ3791A,B	WE,F	12	31.2	7.0	550	0.25	5.0	9.1	105
SMZJ3792A,B	WG,H	13	28.8	7.5	550	0.25	5.0	9.9	98
SMZJ3793A,B	WI,J	15	25.0	9.0	600	0.25	5.0	11.4	85
SMZJ3794A,B	WK,L	16	23.4	10.0	600	0.25	5.0	12.2	80
SMZJ3795A,B	XA,B	18	20.8	12.0	650	0.25	5.0	13.7	70
SMZJ3796A,B	XC,D	20	18.7	14.0	650	0.25	5.0	15.2	62
SMZJ3797A,B	XE,F	22	17.0	17.5	650	0.25	5.0	16.7	56
SMZJ3798A,B	XG,H	24	15.6	19.0	700	0.25	5.0	18.2	51
SMZJ3799A,B	XI,J	27	13.9	23.0	700	0.25	5.0	20.6	46
SMZJ3800A,B	XK,L	30	12.5	26.0	750	0.25	5.0	22.8	41
SMZJ3801A,B	YA,B	33	11.4	33.0	800	0.25	5.0	25.1	38
SMZJ3802A,B	YC,D	36	10.4	38.0	850	0.25	5.0	27.4	35
SMZJ3803A,B	YE,F	39	9.6	45.0	900	0.25	5.0	29.7	31
SMZJ3804A,B	YG,H	43	8.7	53.0	950	0.25	5.0	32.7	28
SMZJ3805A,B	YI,J	47	8.0	67.0	1000	0.25	5.0	35.8	26
SMZJ3806A,B	YK,L	51	7.3	70.0	1100	0.25	5.0	38.8	24
SMZJ3807A,B	ZA,B	56	6.7	86.0	1300	0.25	5.0	42.6	22
SMZJ3808A,B	ZC,D	62	6.0	100.0	1500	0.25	5.0	47.1	20
SMZJ3809A,B	ZE,F	68	5.5	120.0	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
SMZJ3788A-E3/52	0.096	52	750	7" diameter plastic tape and reel
SMZJ3788A-E3/5B	0.096	5B	3200	13" diameter plastic tape and reel
SMZJ3788AHE3/52 ⁽¹⁾	0.096	52	750	7" diameter plastic tape and reel
SMZJ3788AHE3/5B ⁽¹⁾	0.096	5B	3200	13" diameter plastic tape and reel

Note:

- (1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

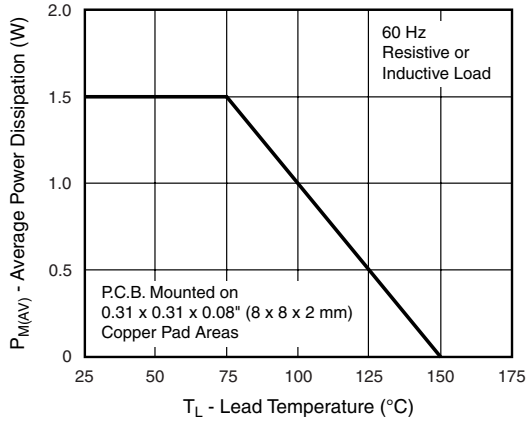


Figure 1. Maximum Continuous Power Dissipation

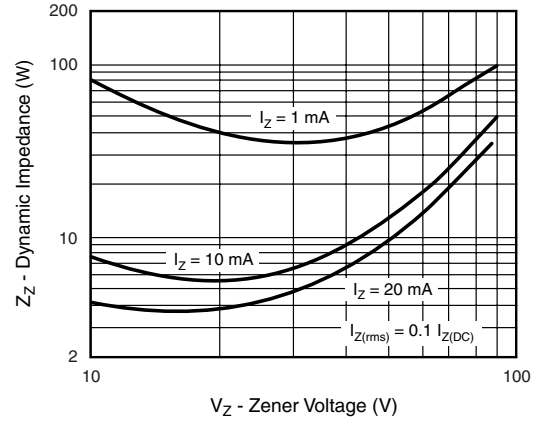


Figure 3. Typical Zener Impedance

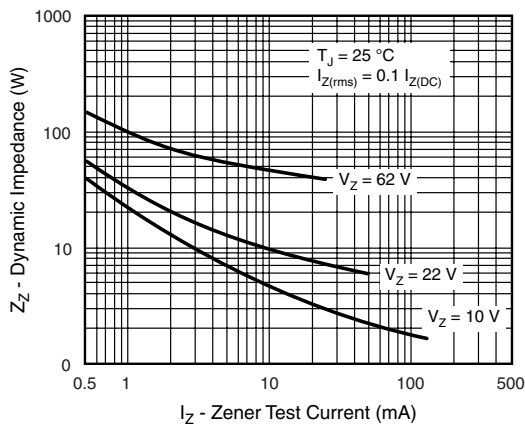


Figure 2. Typical Zener Impedance

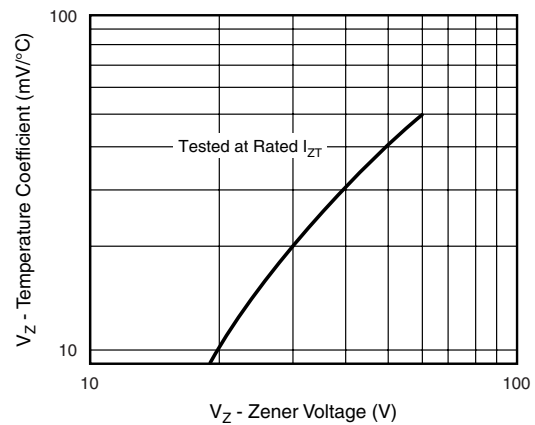
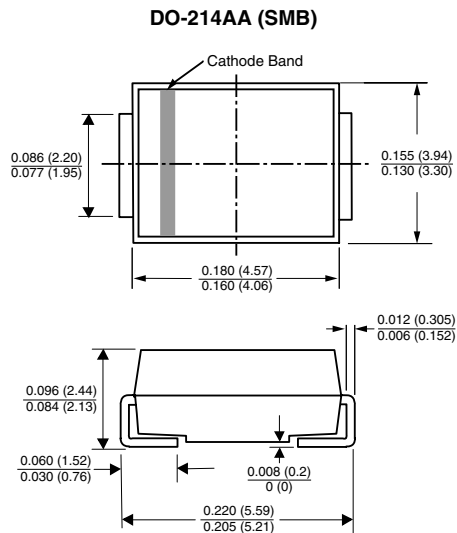
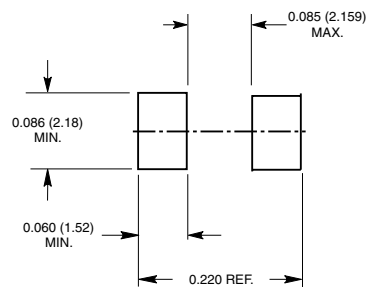


Figure 4. Typical Temperature Coefficients

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Mounting Pad Layout





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