

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-020C, LF max peak of 260 °C
- Solder dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


TYPICAL APPLICATIONS

For general purpose regulation and protection applications.

MECHANICAL DATA

Case: DO-214AA (SMBJ)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes cathode end

| 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 |

| 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 |

SMZJ3788 thru SMZJ3809B

Vishay General Semiconductor



| 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)

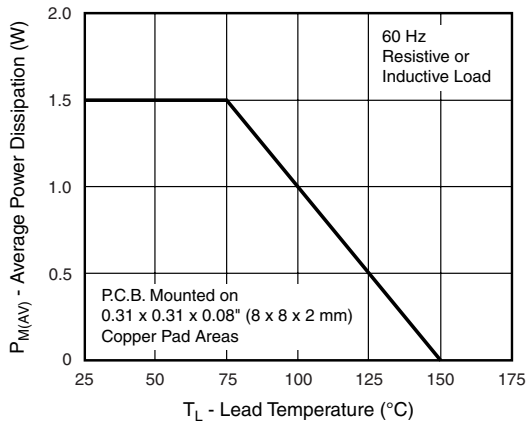


Figure 1. Maximum Continuous Power Dissipation

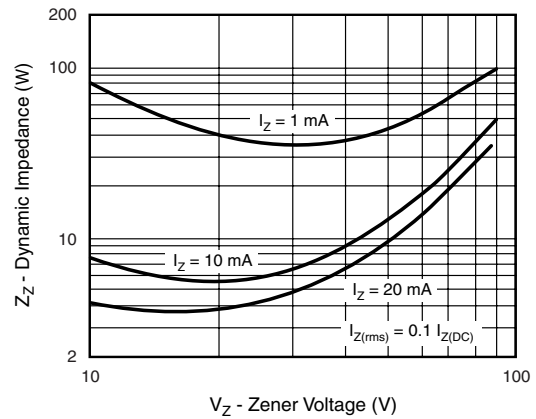


Figure 3. Typical Zener Impedance

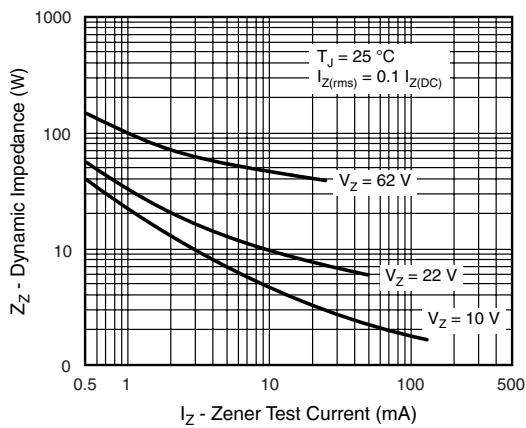


Figure 2. Typical Zener Impedance

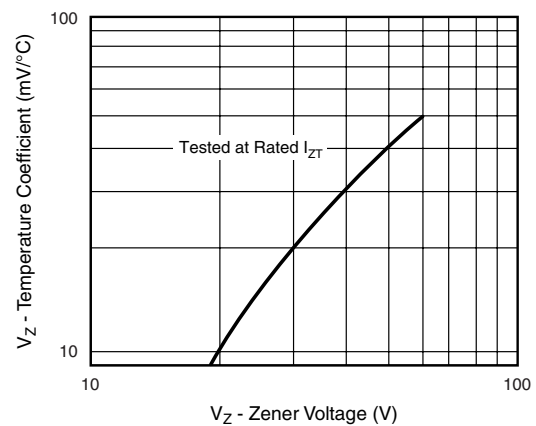
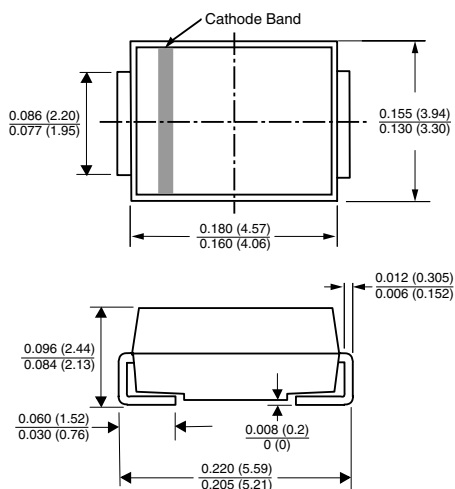


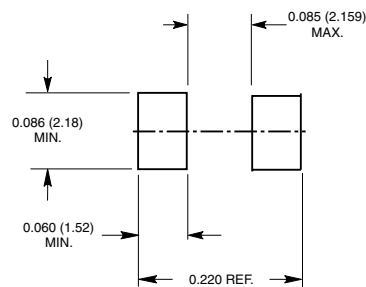
Figure 4. Typical Temperature Coefficients

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA (SMB)



Mounting Pad Layout





Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.