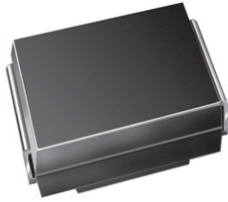




## Surface Mount Power Voltage-Regulating Diodes



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
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



RoHS COMPLIANT

| PRIMARY CHARACTERISTICS |               |
|-------------------------|---------------|
| $V_Z$                   | 9.1 V to 68 V |
| $P_{tot}$               | 1500 mW       |
| $I_R (V_Z \geq 12 V)$   | 5.0 $\mu A$   |
| $T_J$ max.              | 150 °C        |
| $V_Z$ specification     | Pulse current |
| Int. construction       | Single        |

### 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, AEC-Q101 qualified

**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

### TYPICAL APPLICATIONS

For general purpose regulation and protection applications.

| 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   |



| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) |                     |                     |      |      |              |          |                         |                      |                         |      |                                      |
|--|---------------------|---------------------|------|------|--------------|----------|-------------------------|----------------------|-------------------------|------|--------------------------------------|
| PART NUMBER <sup>(1)</sup>   | DEVICE MARKING CODE | ZENER VOLTAGE RANGE |      |      | TEST CURRENT |          | MAXIMUM ZENER IMPEDANCE |                      | MAXIMUM REVERSE CURRENT |      | MAXIMUM ZENER CURRENT <sup>(1)</sup> |
|  |                     | $V_Z$ 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           |          | $\Omega$                |                      | $\mu\text{A}$           | V    | mA                                   |
|  |                     | MIN.                | NOM. | MAX. |              |          | MAX.                    | MAX.                 | MAX.                    |      | MAX.                                 |
| SMZJ3788B  | VL                  | 8.65                | 9.1  | 9.56 | 41.2         | 0.50     | 4.0                     | 1000                 | 50                      | 7.0  | 140                                  |
| SMZJ3789B  | WB                  | 9.50                | 10   | 10.5 | 37.5         | 0.25     | 5.0                     | 1000                 | 50                      | 7.6  | 125                                  |
| SMZJ3790B  | WD                  | 10.5                | 11   | 11.6 | 34.1         | 0.25     | 6.0                     | 650                  | 10                      | 8.4  | 115                                  |
| SMZJ3791B  | WF                  | 11.4                | 12   | 12.6 | 31.2         | 0.25     | 7.0                     | 550                  | 5.0                     | 9.1  | 105                                  |
| SMZJ3792B  | WH                  | 12.4                | 13   | 13.7 | 28.8         | 0.25     | 7.5                     | 550                  | 5.0                     | 9.9  | 98                                   |
| SMZJ3793B  | WJ                  | 14.3                | 15   | 15.8 | 25.0         | 0.25     | 9.0                     | 600                  | 5.0                     | 11.4 | 85                                   |
| SMZJ3794B  | WL                  | 15.2                | 16   | 16.8 | 23.4         | 0.25     | 10.0                    | 600                  | 5.0                     | 12.2 | 80                                   |
| SMZJ3795B  | XB                  | 17.1                | 18   | 18.9 | 20.8         | 0.25     | 12.0                    | 650                  | 5.0                     | 13.7 | 70                                   |
| SMZJ3796B  | XD                  | 19.0                | 20   | 21.0 | 18.7         | 0.25     | 14.0                    | 650                  | 5.0                     | 15.2 | 62                                   |
| SMZJ3797B  | XF                  | 20.9                | 22   | 23.1 | 17.0         | 0.25     | 17.5                    | 650                  | 5.0                     | 16.7 | 56                                   |
| SMZJ3798B  | XH                  | 22.8                | 24   | 25.2 | 15.6         | 0.25     | 19.0                    | 700                  | 5.0                     | 18.2 | 51                                   |
| SMZJ3799B  | XJ                  | 25.7                | 27   | 28.4 | 13.9         | 0.25     | 23.0                    | 700                  | 5.0                     | 20.6 | 46                                   |
| SMZJ3800B  | XL                  | 28.5                | 30   | 31.5 | 12.5         | 0.25     | 26.0                    | 750                  | 5.0                     | 22.8 | 41                                   |
| SMZJ3801B  | YB                  | 31.4                | 33   | 34.7 | 11.4         | 0.25     | 33.0                    | 800                  | 5.0                     | 25.1 | 38                                   |
| SMZJ3802B  | YD                  | 34.2                | 36   | 37.8 | 10.4         | 0.25     | 38.0                    | 850                  | 5.0                     | 27.4 | 35                                   |
| SMZJ3803B  | YF                  | 37.1                | 39   | 41.0 | 9.6          | 0.25     | 45.0                    | 900                  | 5.0                     | 29.7 | 31                                   |
| SMZJ3804B  | YH                  | 40.9                | 43   | 45.2 | 8.7          | 0.25     | 53.0                    | 950                  | 5.0                     | 32.7 | 28                                   |
| SMZJ3805B  | YJ                  | 44.7                | 47   | 49.4 | 8.0          | 0.25     | 67.0                    | 1000                 | 5.0                     | 35.8 | 26                                   |
| SMZJ3806B  | YL                  | 48.5                | 51   | 53.6 | 7.3          | 0.25     | 70.0                    | 1100                 | 5.0                     | 38.8 | 24                                   |
| SMZJ3807B  | ZB                  | 53.2                | 56   | 58.8 | 6.7          | 0.25     | 86.0                    | 1300                 | 5.0                     | 42.6 | 22                                   |
| SMZJ3808B  | ZD                  | 58.9                | 62   | 65.1 | 6.0          | 0.25     | 100.0                   | 1500                 | 5.0                     | 47.1 | 20                                   |
| SMZJ3809B  | ZF                  | 64.6                | 68   | 71.4 | 5.5          | 0.25     | 120.0                   | 1700                 | 5.0                     | 51.7 | 18                                   |

**Notes**

<sup>(1)</sup> Maximum steady state power dissipation is 1500 mW at  $T_L = 75\text{ }^\circ\text{C}$  (fig. 1)

| <b>ORDERING INFORMATION</b> (Example) |                 |                        |               |                                    |
|---------------------------------------|-----------------|------------------------|---------------|------------------------------------|
| PREFERRED P/N                         | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                      |
| SMZJ3788B-E3/52                       | 0.096           | 52                     | 750           | 7" diameter plastic tape and reel  |
| SMZJ3788B-E3/5B                       | 0.096           | 5B                     | 3200          | 13" diameter plastic tape and reel |
| SMZJ3788BHE3/52 <sup>(1)</sup>        | 0.096           | 52                     | 750           | 7" diameter plastic tape and reel  |
| SMZJ3788BHE3/5B <sup>(1)</sup>        | 0.096           | 5B                     | 3200          | 13" diameter plastic tape and reel |

**Note**

<sup>(1)</sup> AEC-Q101 qualified

## RATINGS AND CHARACTERISTICS CURVES

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

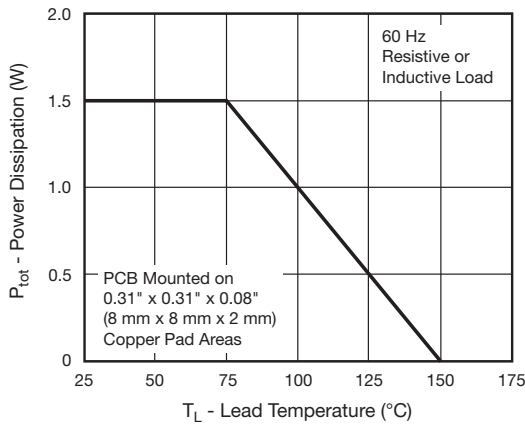


Fig. 1 - Maximum Continuous Power Dissipation

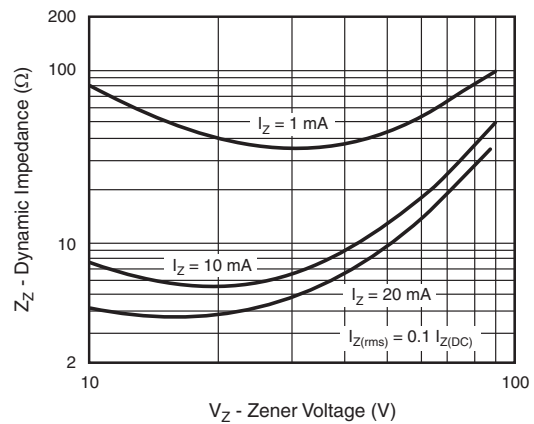


Fig. 3 - Typical Zener Impedance

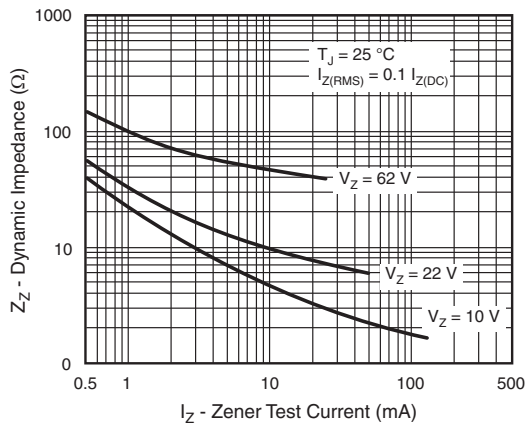


Fig. 2 - Typical Zener Impedance

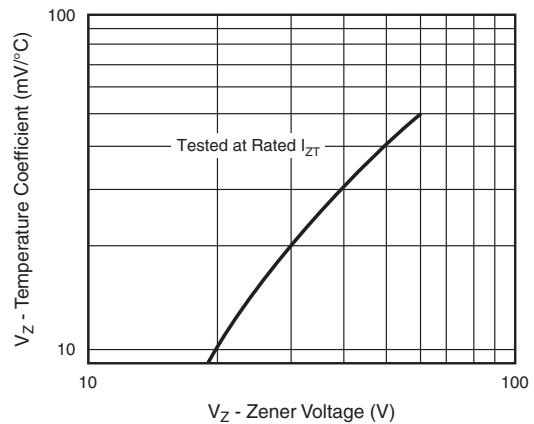
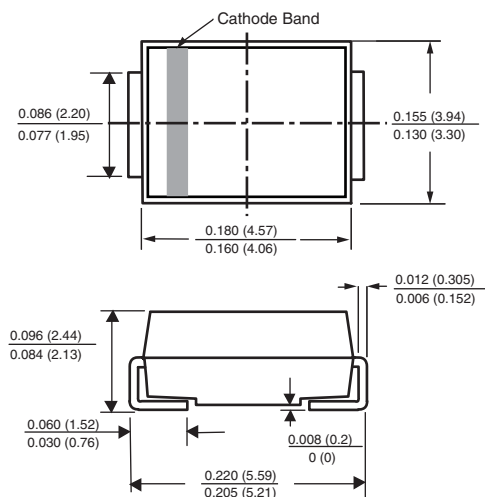


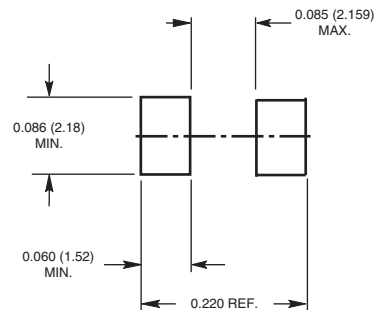
Fig. 4 - Typical Temperature Coefficients

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

### DO-214AA (SMB-J-Bend)



### Mounting Pad Layout





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