

# EVVOSEMI<sup>®</sup>

THINK CHANGE DO



ESD



TVS



MOS



LDO



Diode



Sensor



DC-DC

## Product Specification

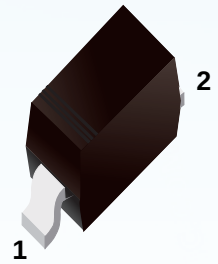
|              |             |             |
|--------------|-------------|-------------|
| ▶ Domestic   | Part Number | MM3Z Series |
| ▶ Overseas   | Part Number | MM3Z Series |
| ▶ Equivalent | Part Number | MM3Z Series |

EV is the abbreviation of name EVVO

## ■ Zener Diodes

### ■ Features

- Total power dissipation: max. 300 mW
- Tolerance approximately  $\pm 5\%$
- Small plastic package suitable for surface mounted design



### ■ Simplified outline(SOD-323)

Top View

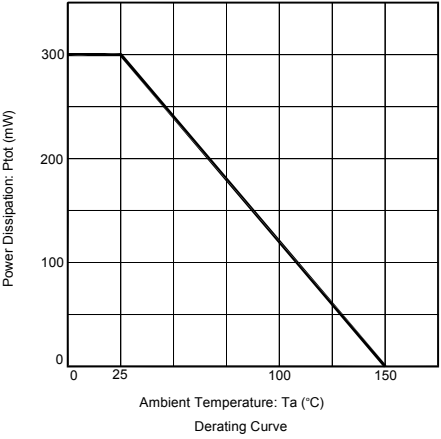
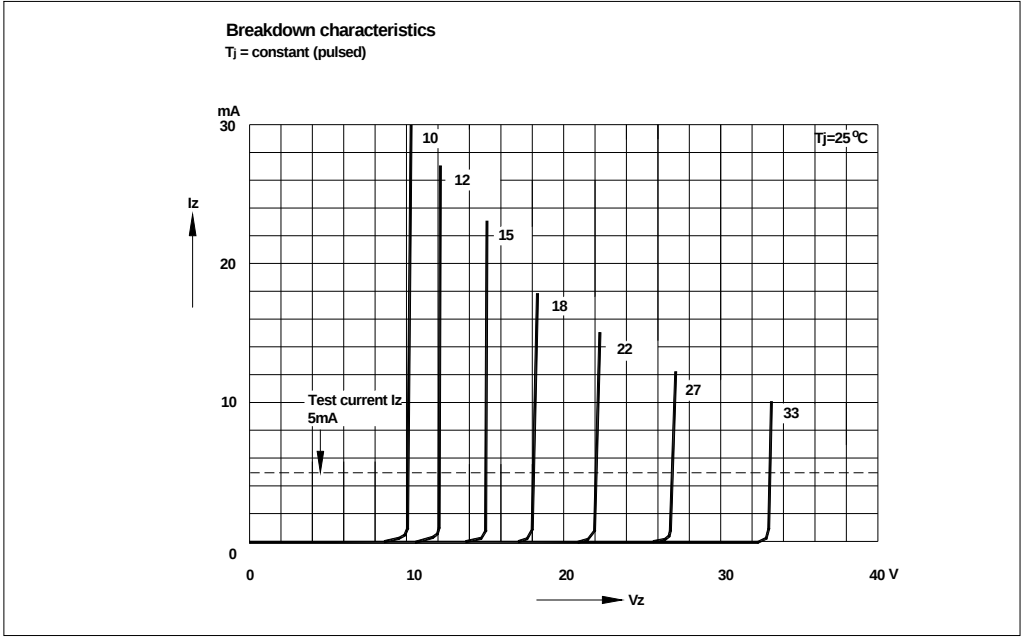
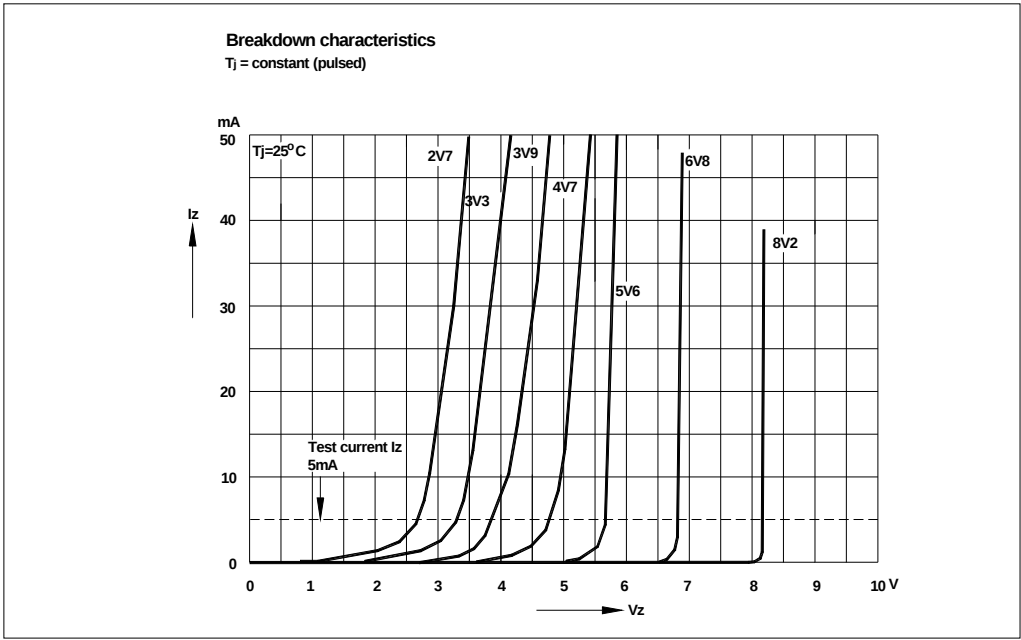
### ■ Absolute Maximum Ratings Ta = 25°C

| Parameter                              | Symbol           | Rating     | Unit |
|----------------------------------------|------------------|------------|------|
| Forward Voltage @ If = 10 mA           | V <sub>F</sub>   | 0.9        | V    |
| Power Dissipation                      | P <sub>D</sub>   | 300        | mW   |
| Thermal Resistance Junction to Ambient | R <sub>θJA</sub> | 417        | °C/W |
| Junction Temperature                   | T <sub>J</sub>   | 150        | °C   |
| Storage Temperature range              | T <sub>stg</sub> | -55 to 150 |      |

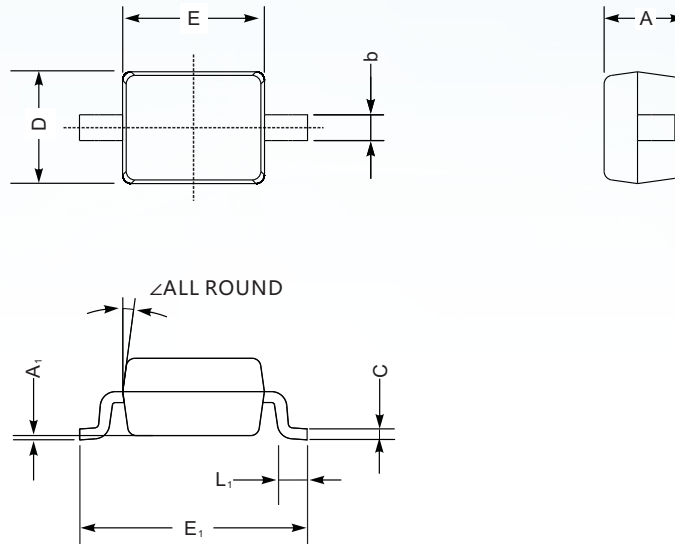
## ■ Electrical Characteristics Ta = 25°C

| Type    | Marking Code | Zener Voltage Range <sup>1)</sup> |                        |                            | Dynamic Impedance           |                            | Reverse Leakage Current     |                          |
|---------|--------------|-----------------------------------|------------------------|----------------------------|-----------------------------|----------------------------|-----------------------------|--------------------------|
|         |              | V <sub>znom</sub><br>(V)          | V <sub>ZT</sub><br>(V) | at I <sub>ZT</sub><br>(mA) | Z <sub>ZT</sub><br>Max. (Ω) | at I <sub>ZT</sub><br>(mA) | I <sub>R</sub><br>Max. (μA) | at V <sub>R</sub><br>(V) |
| MM3Z2V0 | B0           | 2.0                               | 1.8...2.15             | 5                          | 100                         | 5                          | 120                         | 0.5                      |
| MM3Z2V2 | C0           | 2.2                               | 2.08...2.33            | 5                          | 100                         | 5                          | 120                         | 0.7                      |
| MM3Z2V4 | 1C           | 2.4                               | 2.28...2.56            | 5                          | 100                         | 5                          | 120                         | 1                        |
| MM3Z2V7 | 1D           | 2.7                               | 2.5...2.9              | 5                          | 110                         | 5                          | 120                         | 1                        |
| MM3Z3V0 | 1E           | 3.0                               | 2.8...3.2              | 5                          | 120                         | 5                          | 50                          | 1                        |
| MM3Z3V3 | 1F           | 3.3                               | 3.1...3.5              | 5                          | 130                         | 5                          | 20                          | 1                        |
| MM3Z3V6 | 1H           | 3.6                               | 3.4...3.8              | 5                          | 130                         | 5                          | 10                          | 1                        |
| MM3Z3V9 | 1J           | 3.9                               | 3.7...4.1              | 5                          | 130                         | 5                          | 5                           | 1                        |
| MM3Z4V3 | 1K           | 4.3                               | 4...4.6                | 5                          | 130                         | 5                          | 5                           | 1                        |
| MM3Z4V7 | 1M           | 4.7                               | 4.4...5                | 5                          | 130                         | 5                          | 2                           | 1                        |
| MM3Z5V1 | 1N           | 5.1                               | 4.8...5.4              | 5                          | 130                         | 5                          | 2                           | 1.5                      |
| MM3Z5V6 | 1P           | 5.6                               | 5.2...6                | 5                          | 80                          | 5                          | 1                           | 2.5                      |
| MM3Z6V2 | 1R           | 6.2                               | 5.8...6.6              | 5                          | 50                          | 5                          | 1                           | 3                        |
| MM3Z6V8 | 1X           | 6.8                               | 6.4...7.2              | 5                          | 30                          | 5                          | 0.5                         | 3.5                      |
| MM3Z7V5 | 1Y           | 7.5                               | 7...7.9                | 5                          | 30                          | 5                          | 0.5                         | 4                        |
| MM3Z8V2 | 1Z           | 8.2                               | 7.7...8.7              | 5                          | 30                          | 5                          | 0.5                         | 5                        |
| MM3Z9V1 | 2A           | 9.1                               | 8.5...9.6              | 5                          | 30                          | 5                          | 0.5                         | 6                        |
| MM3Z10  | 2B           | 10                                | 9.4...10.6             | 5                          | 30                          | 5                          | 0.1                         | 7                        |
| MM3Z11  | 2C           | 11                                | 10.4...11.6            | 5                          | 30                          | 5                          | 0.1                         | 8                        |
| MM3Z12  | 2D           | 12                                | 11.4...12.7            | 5                          | 35                          | 5                          | 0.1                         | 9                        |
| MM3Z13  | 2E           | 13                                | 12.4...14.1            | 5                          | 35                          | 5                          | 0.1                         | 10                       |
| MM3Z15  | 2F           | 15                                | 13.8...15.6            | 5                          | 40                          | 5                          | 0.1                         | 11                       |
| MM3Z16  | 2H           | 16                                | 15.3...17.1            | 5                          | 40                          | 5                          | 0.1                         | 12                       |
| MM3Z18  | 2J           | 18                                | 16.8...19.1            | 5                          | 45                          | 5                          | 0.1                         | 13                       |
| MM3Z20  | 2K           | 20                                | 18.8...21.2            | 5                          | 50                          | 5                          | 0.1                         | 15                       |
| MM3Z22  | 2M           | 22                                | 20.8...23.3            | 5                          | 55                          | 5                          | 0.1                         | 17                       |
| MM3Z24  | 2N           | 24                                | 22.8...25.6            | 5                          | 60                          | 5                          | 0.1                         | 19                       |
| MM3Z27  | 2P           | 27                                | 25.1...28.9            | 2                          | 70                          | 2                          | 0.1                         | 21                       |
| MM3Z30  | 2R           | 30                                | 28...32                | 2                          | 80                          | 2                          | 0.1                         | 23                       |
| MM3Z33  | 2X           | 33                                | 31...35                | 2                          | 80                          | 2                          | 0.1                         | 25                       |
| MM3Z36  | 2Y           | 36                                | 34...38                | 2                          | 90                          | 2                          | 0.1                         | 27                       |
| MM3Z39  | 2Z           | 39                                | 37...41                | 2                          | 100                         | 2                          | 0.1                         | 30                       |
| MM3Z43  | 3A           | 43                                | 40...46                | 2                          | 130                         | 2                          | 0.1                         | 33                       |
| MM3Z47  | 3B           | 47                                | 44...50                | 2                          | 150                         | 2                          | 0.1                         | 36                       |
| MM3Z51  | 3C           | 51                                | 48...54                | 2                          | 180                         | 2                          | 0.1                         | 39                       |
| MM3Z56  | 3D           | 56                                | 52...60                | 2                          | 200                         | 2                          | 0.1                         | 43                       |
| MM3Z62  | 3E           | 62                                | 58...66                | 2                          | 215                         | 2                          | 0.1                         | 47                       |
| MM3Z68  | 3F           | 68                                | 64...72                | 2                          | 240                         | 2                          | 0.1                         | 52                       |
| MM3Z75  | 3H           | 75                                | 70...79                | 2                          | 265                         | 2                          | 0.1                         | 56                       |

<sup>1)</sup> V<sub>ZT</sub> is tested with pulses (20 ms).



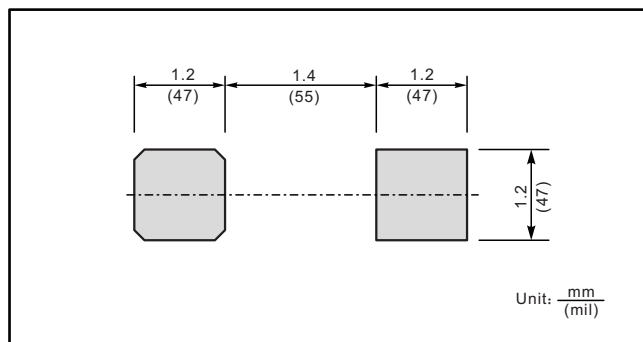
## ■ SOD-323



SOD-323 mechanical data

| UNIT |     | A   | C    | D   | E   | E <sub>1</sub> | b    | L <sub>1</sub> | A <sub>1</sub> | ∠  |
|------|-----|-----|------|-----|-----|----------------|------|----------------|----------------|----|
| mm   | max | 1.1 | 0.15 | 1.4 | 1.8 | 2.75           | 0.4  | 0.45           | 0.2            | 9° |
|      | min | 0.8 | 0.08 | 1.2 | 1.4 | 2.55           | 0.25 | 0.2            | —              |    |
| mil  | max | 43  | 5.9  | 55  | 70  | 108            | 16   | 16             | 8              |    |
|      | min | 32  | 3.1  | 47  | 63  | 100            | 9.8  | 7.9            | —              |    |

## ■ The recommended mounting pad size



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