

# MM1Z2V4 - MM1Z75

$V_Z$  : 2.4 to 75 V

$P_D$  : 500 mW

## FEATURES :

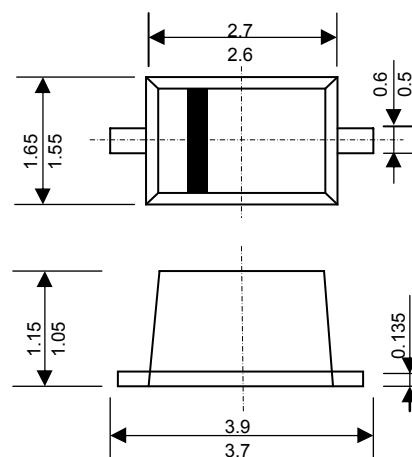
- \* Total Power Dissipation 500 mW
- \* Wide Zener Reverse Voltage Range 2.4 V to 75 V
- \* Package Designed for Optimal Automated Board Assembly
- \* Small Package Size for High Density Applications
- \* Pb / RoHS Free

## MECHANICAL DATA :

- \* Case : SOD-123
- \* Weight : 0.01 gram (approximately)

## ZENER DIODES

### SOD-123



Dimensions in millimeters

## Maximum Ratings and Thermal Characteristics

Rating at 25 °C ambient temperature unless otherwise specified

| Parameter                                  | Symbol          | Value        | Unit |
|--------------------------------------------|-----------------|--------------|------|
| Total Power Dissipation                    | $P_{tot}$       | 500          | mW   |
| Maximum Forward Voltage at $I_F = 10$ mA   | $V_F$           | 0.9          | V    |
| Thermal Resistance Junction to Ambient Air | $R_{\theta JA}$ | 0.3          | K/mW |
| Junction Temperature Range                 | $T_J$           | 150          | °C   |
| Storage Temperature Range                  | $T_{STG}$       | -55 to + 150 | °C   |

## ELECTRICAL CHARACTERISTICS

| TYPE NO. | Marking | Zener Voltage <sup>(2)</sup>         |      |      | Test Current | Dynamic Impedance <sup>(3)</sup> |                                   | Max. Reverse Leakage Current |                                 | Temp. Coefficient of Zener Voltage |                        |
|----------|---------|--------------------------------------|------|------|--------------|----------------------------------|-----------------------------------|------------------------------|---------------------------------|------------------------------------|------------------------|
|          |         | V <sub>Z</sub> @ I <sub>ZT</sub> (V) |      |      |              | I <sub>ZT</sub> (mA)             | Z <sub>ZT</sub> @ I <sub>ZT</sub> |                              | I <sub>R</sub> @ V <sub>R</sub> |                                    | TK <sub>VZ</sub> (%/K) |
|          |         | Min.                                 | Nom. | Max. | (Ω)          |                                  | (mA)                              | (μA)                         | (V)                             | Min.                               | Max.                   |
| MM1Z2V4  | 4C      | 2.28                                 | 2.4  | 2.56 | 5            | 100                              | 5                                 | 120                          | 1.0                             | -0.09                              | -0.06                  |
| MM1Z2V7  | 4D      | 2.5                                  | 2.7  | 2.9  | 5            | 110                              | 5                                 | 120                          | 1.0                             | -0.09                              | -0.06                  |
| MM1Z3V0  | 4E      | 2.8                                  | 3.0  | 3.2  | 5            | 120                              | 5                                 | 50                           | 1.0                             | -0.08                              | -0.05                  |
| MM1Z3V3  | 4F      | 3.1                                  | 3.3  | 3.5  | 5            | 130                              | 5                                 | 20                           | 1.0                             | -0.08                              | -0.05                  |
| MM1Z3V6  | 4H      | 3.4                                  | 3.6  | 3.8  | 5            | 130                              | 5                                 | 10                           | 1.0                             | -0.08                              | -0.05                  |
| MM1Z3V9  | 4J      | 3.7                                  | 3.9  | 4.1  | 5            | 130                              | 5                                 | 5                            | 1.0                             | -0.08                              | -0.05                  |
| MM1Z4V3  | 4K      | 4.0                                  | 4.3  | 4.6  | 5            | 130                              | 5                                 | 5                            | 1.0                             | -0.06                              | -0.03                  |
| MM1Z4V7  | 4M      | 4.4                                  | 4.7  | 5.0  | 5            | 130                              | 5                                 | 2                            | 1.0                             | -0.05                              | +0.02                  |
| MM1Z5V1  | 4N      | 4.8                                  | 5.1  | 5.4  | 5            | 130                              | 5                                 | 2                            | 1.5                             | -0.02                              | +0.02                  |
| MM1Z5V6  | 4P      | 5.2                                  | 5.6  | 6.0  | 5            | 80                               | 5                                 | 1                            | 2.5                             | -0.05                              | +0.05                  |
| MM1Z6V2  | 4R      | 5.8                                  | 6.2  | 6.6  | 5            | 50                               | 5                                 | 1                            | 3.0                             | 0.03                               | 0.06                   |
| MM1Z6V8  | 4X      | 6.4                                  | 6.8  | 7.2  | 5            | 30                               | 5                                 | 0.5                          | 3.5                             | 0.03                               | 0.07                   |
| MM1Z7V5  | 4Y      | 7.0                                  | 7.5  | 7.9  | 5            | 30                               | 5                                 | 0.5                          | 4.0                             | 0.03                               | 0.07                   |
| MM1Z8V2  | 4Z      | 7.7                                  | 8.2  | 8.7  | 5            | 30                               | 5                                 | 0.5                          | 5.0                             | 0.03                               | 0.08                   |
| MM1Z9V1  | 5A      | 8.5                                  | 9.1  | 9.6  | 5            | 30                               | 5                                 | 0.5                          | 6.0                             | 0.03                               | 0.09                   |
| MM1Z10   | 5B      | 9.4                                  | 10   | 10.6 | 5            | 30                               | 5                                 | 0.1                          | 7.0                             | 0.03                               | 0.1                    |
| MM1Z11   | 5C      | 10.4                                 | 11   | 11.6 | 5            | 30                               | 5                                 | 0.1                          | 8.0                             | 0.03                               | 0.11                   |
| MM1Z12   | 5D      | 11.4                                 | 12   | 12.7 | 5            | 35                               | 5                                 | 0.1                          | 9.0                             | 0.03                               | 0.11                   |
| MM1Z13   | 5E      | 12.4                                 | 13   | 14.1 | 5            | 35                               | 5                                 | 0.1                          | 10                              | 0.03                               | 0.11                   |
| MM1Z15   | 5F      | 13.8                                 | 15   | 15.6 | 5            | 40                               | 5                                 | 0.1                          | 11                              | 0.03                               | 0.11                   |
| MM1Z16   | 5H      | 15.3                                 | 16   | 17.1 | 5            | 40                               | 5                                 | 0.1                          | 12                              | 0.03                               | 0.11                   |
| MM1Z18   | 5J      | 16.8                                 | 18   | 19.1 | 5            | 45                               | 5                                 | 0.1                          | 13                              | 0.03                               | 0.11                   |
| MM1Z20   | 5K      | 18.8                                 | 20   | 21.2 | 5            | 50                               | 5                                 | 0.1                          | 15                              | 0.03                               | 0.11                   |
| MM1Z22   | 5M      | 20.8                                 | 22   | 23.3 | 5            | 55                               | 5                                 | 0.1                          | 17                              | 0.04                               | 0.12                   |
| MM1Z24   | 5N      | 22.8                                 | 24   | 25.6 | 5            | 60                               | 5                                 | 0.1                          | 19                              | 0.04                               | 0.12                   |
| MM1Z27   | 5P      | 25.1                                 | 27   | 28.9 | 5            | 70                               | 2                                 | 0.1                          | 21                              | 0.04                               | 0.12                   |
| MM1Z30   | 5R      | 28.0                                 | 30   | 32.0 | 5            | 80                               | 2                                 | 0.1                          | 23                              | 0.04                               | 0.12                   |
| MM1Z33   | 5X      | 31.0                                 | 33   | 35.0 | 5            | 80                               | 2                                 | 0.1                          | 25                              | 0.04                               | 0.12                   |
| MM1Z36   | 5Y      | 34.0                                 | 36   | 38.0 | 5            | 90                               | 2                                 | 0.1                          | 27                              | 0.04                               | 0.12                   |
| MM1Z39   | 5Z      | 37.0                                 | 39   | 41.0 | 2.5          | 100                              | 2                                 | 2                            | 30                              | 0.04                               | 0.12                   |
| MM1Z43   | 6A      | 40.0                                 | 43   | 46.0 | 2.5          | 130                              | 2                                 | 2                            | 33                              | 0.04                               | 0.12                   |
| MM1Z47   | 6B      | 44.0                                 | 47   | 50.0 | 2.5          | 150                              | 2                                 | 2                            | 36                              | 0.04                               | 0.12                   |
| MM1Z51   | 6C      | 48.0                                 | 51   | 54.0 | 2.5          | 180                              | 2                                 | 1                            | 39                              | 0.04                               | 0.12                   |
| MM1Z56   | 6D      | 52.0                                 | 56   | 60.0 | 2.5          | 180                              | 2                                 | 1                            | 43                              | 0.04                               | 0.12                   |
| MM1Z62   | 6E      | 58.0                                 | 62   | 66.0 | 2.5          | 200                              | 2                                 | 0.2                          | 47                              | 0.04                               | 0.12                   |
| MM1Z68   | 6F      | 64.0                                 | 68   | 72.0 | 2.5          | 250                              | 2                                 | 0.2                          | 52                              | 0.04                               | 0.12                   |
| MM1Z75   | 6H      | 70.0                                 | 75   | 79.0 | 2.5          | 300                              | 2                                 | 0.2                          | 57                              | 0.04                               | 0.12                   |

### Notes :

- (1) The type number shown have a standard tolerance of  $\pm 5\%$  on the nominal Zener Voltage.
- (2)  $V_Z$  is tested with pulses (20ms).
- (3)  $V_Z$  is measured at  $I_Z$  by given a very small A.C. current signal.