

## MM5Z2V4 - MM5Z75V

$V_Z$  : 2.4 to 75 V

$P_D$  : 200 mW

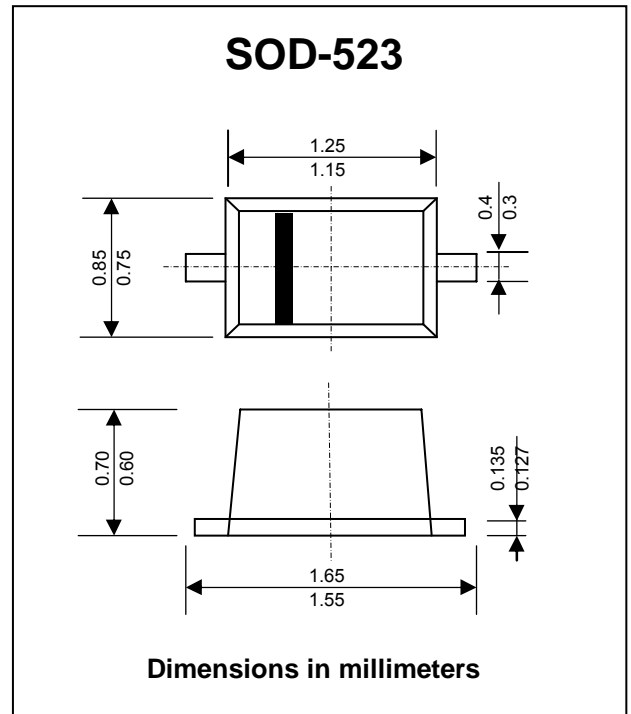
### FEATURES :

- \* Steady State Power Rating of 200 mW
- \* Standard Zener Breakdown Voltage Range 2.4V to 75V
- \* Pb / RoHS Free

### MECHANICAL DATA :

- \* LEAD FINISH : 100% Matte Sn (Tin)
- \* MOUNTING POSITION : Any
- \* QUALIFIED MAX REFLOW TEMPERATURE : 260 °C

## ZENER DIODES



### Maximum Ratings and Thermal Characteristics

| Parameter  | Symbol    | Value        | Unit |
|--|-----------|--------------|------|
| Total Device Dissipation FR-5 Board, at Ta = 25 °C | $P_D$     | 200          | mW   |
| Junction Temperature Range                         | $T_J$     | -65 to + 150 | °C   |
| Storage Temperature Range                          | $T_{STG}$ | -65 to + 150 | °C   |



**ELECTRICAL CHARACTERISTICS** (Ta=25 °C unless otherwise noted, Vf = 0.9 V Max. @ If =10 mA for all types)

| Type No. | Marking | Zener Voltage (Note 1)               |       |      | Test Current    | Zener Impedance                   |                                   | Test Current    | Leakage Current                 |      | ∂Vz (mV/k)<br>@ I <sub>ZT</sub> |      | C<br>@ V <sub>R</sub> =0<br>f = 1MHz |
|----------|---------|--------------------------------------|-------|------|-----------------|-----------------------------------|-----------------------------------|-----------------|---------------------------------|------|---------------------------------|------|--------------------------------------|
|          |         | V <sub>Z</sub> @ I <sub>ZT</sub> (V) |       |      | I <sub>ZT</sub> | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub> @ V <sub>R</sub> | Min. | Max.                            | pF   |                                      |
|          |         | Min.                                 | Nom.  | Max. | (mA)            | (Ω)                               | (Ω)                               | (mA)            | (μA)                            |      |                                 |      | (V)                                  |
| MM5Z2V4  | Z7      | 2.2                                  | 2.4   | 2.6  | 5               | 100                               | 1000                              | 1.0             | 50                              | 1.0  | -3.5                            | 0    | 450                                  |
| MM5Z2V7  | A8      | 2.5                                  | 2.7   | 2.9  | 5               | 100                               | 1000                              | 1.0             | 20                              | 1.0  | -3.5                            | 0    | 450                                  |
| MM5Z3V0  | B8      | 2.8                                  | 3.0   | 3.2  | 5               | 100                               | 1000                              | 1.0             | 10                              | 1.0  | -3.5                            | 0    | 450                                  |
| MM5Z3V3  | C8      | 3.1                                  | 3.3   | 3.5  | 5               | 95                                | 1000                              | 1.0             | 5                               | 1.0  | -3.5                            | 0    | 450                                  |
| MM5Z3V6  | D8      | 3.4                                  | 3.6   | 3.8  | 5               | 90                                | 1000                              | 1.0             | 5                               | 1.0  | -3.5                            | 0    | 450                                  |
| MM5Z3V9  | E8      | 3.7                                  | 3.9   | 4.1  | 5               | 90                                | 1000                              | 1.0             | 3                               | 1.0  | -3.5                            | -2.5 | 450                                  |
| MM5Z4V3  | F8      | 4.0                                  | 4.3   | 4.6  | 5               | 90                                | 1000                              | 1.0             | 3                               | 1.0  | -3.5                            | 0    | 450                                  |
| MM5Z4V7  | G8      | 4.4                                  | 4.7   | 5.0  | 5               | 80                                | 800                               | 1.0             | 3                               | 2.0  | -3.5                            | 0.2  | 260                                  |
| MM5Z5V1  | H8      | 4.8                                  | 5.1   | 5.4  | 5               | 60                                | 500                               | 1.0             | 2                               | 2.0  | -2.7                            | 1.2  | 225                                  |
| MM5Z5V6  | I8      | 5.2                                  | 5.6   | 6.0  | 5               | 40                                | 200                               | 1.0             | 1                               | 2.0  | -2.0                            | 2.5  | 200                                  |
| MM5Z6V2  | J8      | 5.8                                  | 6.2   | 6.6  | 5               | 10                                | 100                               | 1.0             | 3                               | 4.0  | 0.4                             | 3.7  | 185                                  |
| MM5Z6V8  | K8      | 6.4                                  | 6.8   | 7.2  | 5               | 15                                | 160                               | 1.0             | 2                               | 4.0  | 1.2                             | 4.5  | 155                                  |
| MM5Z7V5  | L8      | 7.0                                  | 7.5   | 7.9  | 5               | 15                                | 160                               | 1.0             | 1                               | 5.0  | 2.5                             | 5.3  | 140                                  |
| MM5Z8V2  | M8      | 7.7                                  | 8.2   | 8.7  | 5               | 15                                | 160                               | 1.0             | 0.7                             | 5.0  | 3.2                             | 6.2  | 135                                  |
| MM5Z9V1  | N8      | 8.5                                  | 9.1   | 9.6  | 5               | 15                                | 160                               | 1.0             | 0.2                             | 7.0  | 3.8                             | 7.0  | 130                                  |
| MM5Z10V  | O8      | 9.4                                  | 10    | 10.6 | 5               | 20                                | 160                               | 1.0             | 0.1                             | 8.0  | 4.5                             | 8.0  | 130                                  |
| MM5Z11V  | P8      | 10.4                                 | 11    | 11.6 | 5               | 20                                | 160                               | 1.0             | 0.1                             | 8.0  | 5.4                             | 9.0  | 130                                  |
| MM5Z12V  | Q8      | 11.4                                 | 12    | 12.7 | 5               | 25                                | 80                                | 1.0             | 0.1                             | 8.0  | 6.0                             | 10.0 | 130                                  |
| MM5Z13V  | R8      | 12.4                                 | 13.25 | 14.1 | 5               | 30                                | 80                                | 1.0             | 0.1                             | 8.0  | 7.0                             | 11.0 | 120                                  |
| MM5Z15V  | S8      | 14.3                                 | 15    | 15.8 | 5               | 30                                | 80                                | 1.0             | 0.05                            | 10.5 | 9.2                             | 13.0 | 110                                  |
| MM5Z16V  | T8      | 15.3                                 | 16.2  | 17.1 | 5               | 40                                | 80                                | 1.0             | 0.05                            | 11.2 | 10.4                            | 14.0 | 105                                  |
| MM5Z18V  | U8      | 16.8                                 | 18    | 19.1 | 5               | 45                                | 80                                | 1.0             | 0.05                            | 12.6 | 12.4                            | 16.0 | 100                                  |
| MM5Z20V  | V8      | 18.8                                 | 20    | 21.2 | 5               | 55                                | 100                               | 1.0             | 0.05                            | 14.0 | 14.4                            | 18.0 | 85                                   |
| MM5Z22V  | W8      | 20.8                                 | 22    | 23.3 | 5               | 55                                | 100                               | 1.0             | 0.05                            | 15.4 | 15.4                            | 20.0 | 85                                   |
| MM5Z24V  | X8      | 22.8                                 | 24.2  | 25.6 | 5               | 70                                | 120                               | 1.0             | 0.05                            | 16.8 | 18.4                            | 22.0 | 80                                   |
| MM5Z27V  | Y8      | 25.1                                 | 27    | 28.9 | 2               | 80                                | 300                               | 1.0             | 0.05                            | 18.9 | 21.4                            | 25.3 | 70                                   |
| MM5Z30V  | Z8      | 28                                   | 30    | 32   | 2               | 80                                | 300                               | 1.0             | 0.05                            | 21.0 | 24.4                            | 29.4 | 70                                   |
| MM5Z33V  | A9      | 31                                   | 33    | 35   | 2               | 80                                | 300                               | 1.0             | 0.05                            | 23.2 | 27.4                            | 33.4 | 70                                   |
| MM5Z36V  | B9      | 34                                   | 36    | 38   | 2               | 90                                | 500                               | 1.0             | 0.05                            | 25.2 | 30.4                            | 37.4 | 70                                   |
| MM5Z39V  | C9      | 37                                   | 39    | 41   | 2               | 130                               | 500                               | 1.0             | 0.05                            | 27.3 | 33.4                            | 41.2 | 45                                   |
| MM5Z43V  | D9      | 40                                   | 43    | 46   | 2               | 150                               | 500                               | 1.0             | 0.05                            | 30.1 | 37.6                            | 46.6 | 40                                   |
| MM5Z47V  | E9      | 44                                   | 47    | 50   | 2               | 170                               | 500                               | 1.0             | 0.05                            | 32.9 | 42.0                            | 51.8 | 40                                   |
| MM5Z51V  | F9      | 48                                   | 51    | 54   | 2               | 180                               | 500                               | 1.0             | 0.05                            | 35.7 | 46.6                            | 57.2 | 40                                   |
| MM5Z56V  | G9      | 52                                   | 56    | 60   | 2               | 200                               | 500                               | 1.0             | 0.05                            | 39.2 | 52.2                            | 63.8 | 40                                   |
| MM5Z62V  | H9      | 58                                   | 62    | 66   | 2               | 215                               | 500                               | 1.0             | 0.05                            | 43.4 | 58.8                            | 71.6 | 35                                   |
| MM5Z68V  | I9      | 64                                   | 68    | 72   | 2               | 240                               | 500                               | 1.0             | 0.05                            | 47.6 | 65.6                            | 79.8 | 35                                   |
| MM5Z75V  | J9      | 70                                   | 75    | 79   | 2               | 255                               | 500                               | 1.0             | 0.05                            | 52.5 | 73.4                            | 88.6 | 35                                   |

**Note :**

(1) Zener voltage is measured with a pulse test current I<sub>Z</sub> at an ambient temperature of 25°C.