



## Features

- Total power dissipation: Max.500mW
- Wide zenerreverse voltage range 2.0V to 75V
- Small plastic package suitable for surface mounted design
- Tolerance approximately  $\pm 5\%$



SOD-123



## Package Marking and Ordering Information

| Product ID | Pack    | Marking | Qty(PCS) |
|------------|---------|---------|----------|
| MM1ZxxW    | SOD-123 | YY      | 3000     |

xx:From 2V0-75

YY= Device code, see table on page2 the marking code.

The marking bar indicates the cathode.

## Absolute Maximum Ratings( $T_a=25^{\circ}\text{C}$ )

| Characteristic                              | Symbol          | Value      | Unit                        |
|---------------------------------------------|-----------------|------------|-----------------------------|
| Forward voltage @ $I_F=10\text{mA}$         | $V_F$           | 0.9        | V                           |
| Power Dissipation                           | $P_D$           | 500        | mW                          |
| Thermal Resistance, Junction to Ambient Air | $R_{\theta JA}$ | 340        | $^{\circ}\text{C}/\text{W}$ |
| Junction Temperature                        | $T_j$           | 150        | $^{\circ}\text{C}$          |
| Storage Temperature Range                   | $T_{stg}$       | -55 ~ +150 | $^{\circ}\text{C}$          |

Notes: Device mounted on ceramic PCB;5.0mm×7.0mm with pad areas 35 mm<sup>2</sup>



**Electrical Characteristics (Ta=25°C unless otherwise specified)**

| Type     | Marking | Zener Voltage Range <sup>(1)</sup>     |           |           | I <sub>ZT</sub> | Dynamic Impedance                      | Reverse Current |                   |
|----------|---------|----------------------------------------|-----------|-----------|-----------------|----------------------------------------|-----------------|-------------------|
|          |         | V <sub>ZT</sub> ( at I <sub>ZT</sub> ) |           |           |                 | Z <sub>ZT</sub> ( at I <sub>ZT</sub> ) | I <sub>R</sub>  | at V <sub>R</sub> |
|          |         | Min ( V )                              | Nom ( V ) | Max ( V ) | (mA)            | Max (Ω)                                | Max ( μA )      | ( V )             |
| MM1Z2V0W | 4A      | 1.8                                    | 2.0       | 2.15      | 5               | 100                                    | 120             | 0.5               |
| MM1Z2V2W | 4B      | 2.08                                   | 2.2       | 2.33      | 5               | 100                                    | 120             | 0.7               |
| MM1Z2V4W | 4C      | 2.28                                   | 2.4       | 2.56      | 5               | 100                                    | 120             | 1                 |
| MM1Z2V7W | 4D      | 2.5                                    | 2.7       | 2.9       | 5               | 110                                    | 120             | 1                 |
| MM1Z3V0W | 4E      | 2.8                                    | 3.0       | 3.2       | 5               | 120                                    | 50              | 1                 |
| MM1Z3V3W | 4F      | 3.1                                    | 3.3       | 3.5       | 5               | 130                                    | 20              | 1                 |
| MM1Z3V6W | 4H      | 3.4                                    | 3.6       | 3.8       | 5               | 130                                    | 10              | 1                 |
| MM1Z3V9W | 4J      | 3.7                                    | 3.9       | 4.1       | 5               | 130                                    | 5               | 1                 |
| MM1Z4V3W | 4K      | 4                                      | 4.3       | 4.6       | 5               | 130                                    | 5               | 1                 |
| MM1Z4V7W | 4M      | 4.4                                    | 4.7       | 5         | 5               | 130                                    | 2               | 1                 |
| MM1Z5V1W | 4N      | 4.8                                    | 5.1       | 5.4       | 5               | 130                                    | 2               | 1.5               |
| MM1Z5V6W | 4P      | 5.2                                    | 5.6       | 6         | 5               | 80                                     | 1               | 2.5               |
| MM1Z6V2W | 4R      | 5.8                                    | 6.2       | 6.6       | 5               | 50                                     | 1               | 3                 |
| MM1Z6V8W | 4X      | 6.4                                    | 6.8       | 7.2       | 5               | 30                                     | 0.5             | 3.5               |
| MM1Z7V5W | 4Y      | 7                                      | 7.5       | 7.9       | 5               | 30                                     | 0.5             | 4                 |
| MM1Z8V2W | 4Z      | 7.7                                    | 8.2       | 8.7       | 5               | 30                                     | 0.5             | 5                 |
| MM1Z9V1W | 5A      | 8.5                                    | 9.1       | 9.6       | 5               | 30                                     | 0.5             | 6                 |
| MM1Z10W  | 5B      | 9.4                                    | 10        | 10.6      | 5               | 30                                     | 0.1             | 7                 |
| MM1Z11W  | 5C      | 10.4                                   | 11        | 11.6      | 5               | 30                                     | 0.1             | 8                 |
| MM1Z12W  | 5D      | 11.4                                   | 12        | 12.7      | 5               | 35                                     | 0.1             | 9                 |
| MM1Z13W  | 5E      | 12.4                                   | 13        | 14.1      | 5               | 35                                     | 0.1             | 10                |
| MM1Z15W  | 5F      | 13.8                                   | 15        | 15.6      | 5               | 40                                     | 0.1             | 11                |
| MM1Z16W  | 5H      | 15.3                                   | 16        | 17.1      | 5               | 40                                     | 0.1             | 12                |
| MM1Z18W  | 5J      | 16.8                                   | 18        | 19.1      | 5               | 45                                     | 0.1             | 13                |
| MM1Z20W  | 5K      | 18.8                                   | 20        | 21.2      | 5               | 50                                     | 0.1             | 15                |
| MM1Z22W  | 5M      | 20.8                                   | 22        | 23.3      | 5               | 55                                     | 0.1             | 17                |
| MM1Z24W  | 5N      | 22.8                                   | 24        | 25.6      | 5               | 60                                     | 0.1             | 19                |
| MM1Z27W  | 5P      | 25.1                                   | 27        | 28.9      | 5               | 70                                     | 0.1             | 21                |
| MM1Z30W  | 5R      | 28                                     | 30        | 32        | 5               | 80                                     | 0.1             | 23                |
| MM1Z33W  | 5X      | 31                                     | 33        | 35        | 5               | 80                                     | 0.1             | 25                |
| MM1Z36W  | 5Y      | 34                                     | 36        | 38        | 5               | 90                                     | 0.1             | 27                |
| MM1Z39W  | 5Z      | 37                                     | 39        | 41        | 2.5             | 100                                    | 2               | 30                |
| MM1Z43W  | 6A      | 40                                     | 43        | 46        | 2.5             | 130                                    | 2               | 33                |
| MM1Z47W  | 6B      | 44                                     | 47        | 50        | 2.5             | 150                                    | 2               | 36                |
| MM1Z51W  | 6C      | 48                                     | 51        | 54        | 2.5             | 180                                    | 1               | 39                |
| MM1Z56W  | 6D      | 52                                     | 56        | 60        | 2.5             | 180                                    | 1               | 43                |
| MM1Z62W  | 6E      | 58                                     | 62        | 66        | 2.5             | 200                                    | 0.2             | 47                |
| MM1Z68W  | 6F      | 64                                     | 68        | 72        | 2.5             | 250                                    | 0.2             | 52                |
| MM1Z75W  | 6H      | 70                                     | 75        | 79        | 2.5             | 300                                    | 0.2             | 57                |

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



## Typical Characteristics

Fig.1 Maximum Continuous Power Derating

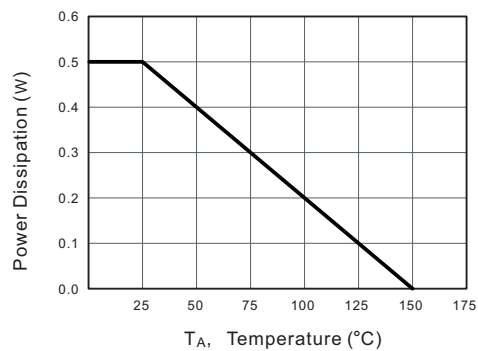
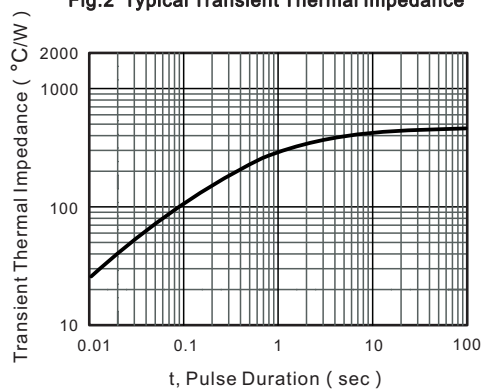
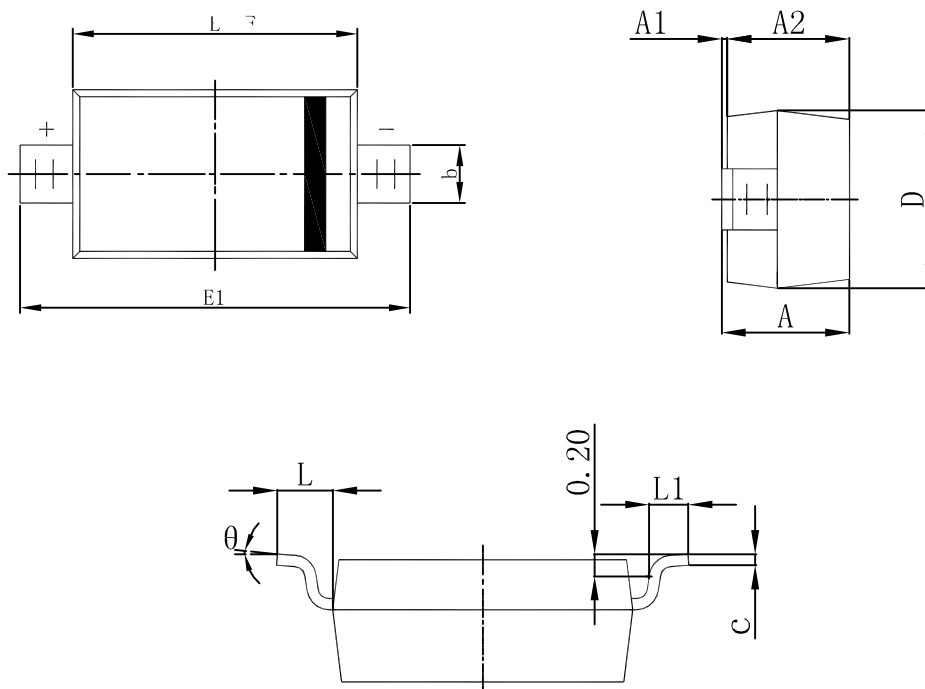


Fig.2 Typical Transient Thermal Impedance





## SOD-123 Package Outline Dimensions



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min                       | Max   | Min                  | Max   |
| A      | 1.050                     | 1.250 | 0.041                | 0.049 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 1.050                     | 1.150 | 0.041                | 0.045 |
| b      | 0.450                     | 0.650 | 0.018                | 0.026 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 1.500                     | 1.700 | 0.059                | 0.067 |
| E      | 2.600                     | 2.800 | 0.102                | 0.110 |
| E1     | 3.550                     | 3.850 | 0.140                | 0.152 |
| L      | 0.500 REF                 |       | 0.020 REF            |       |
| L1     | 0.250                     | 0.450 | 0.010                | 0.018 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |



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