

## SOD-123 SURFACE MOUNT SILICON ZENER DIODES

### ● Features

- Low Zener Impedance
- Power Dissipation of 350mW
- High Stability and High Reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

**Zener Diode**  
1.8 to 43 Volts  
**Power Dissipation**  
350 Milliwatts

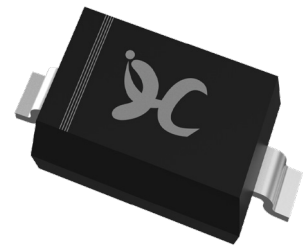
### ● Applications

Zener diode is generally used as reference voltage sources in regulated power supplies or as protective diode in overvoltage protection circuits.

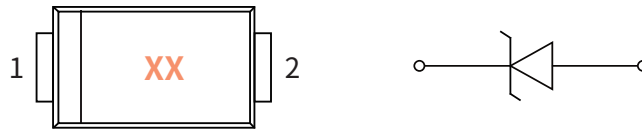
### ● Mechanical Data

- Case: SOD-123  
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: Cathode line denotes the cathode end

SOD-123



### ● Function Diagram

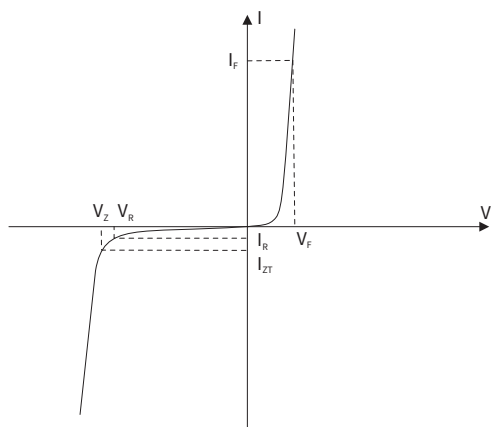


### ● Maximum Ratings (Ta=25°C Unless otherwise specified)

| PARAMETER                           | SYMBOL          | UNIT  | VALUE      |
|-------------------------------------|-----------------|-------|------------|
| Power Dissipation                   | $P_D$           | mW    | 350        |
| Forward Voltage @ $I_F=10\text{mA}$ | $V_F$           | V     | 0.9        |
| Storage Temperature                 | $T_{stg}$       | °C    | -55 ~ +150 |
| Junction Temperature                | $T_J$           | °C    | -55 ~ +150 |
| Typical Thermal Resistance          | $R_{\theta JA}$ | °C /W | 357        |

### ● Electrical Parameter

| SYMBOL   | PARAMETER                          |
|----------|------------------------------------|
| $V_Z$    | Reverse zener voltage @ $I_{ZT}$   |
| $I_{ZT}$ | Reverse current                    |
| $Z_{ZT}$ | Maximum Zener Impedance @ $I_{ZT}$ |
| $I_{ZK}$ | Reverse Current                    |
| $Z_{ZK}$ | Maximum Zener Impedance @ $I_{ZK}$ |
| $I_R$    | Reverse leakage current @ $V_R$    |
| $V_R$    | Reverse voltage                    |
| $I_F$    | Forward current                    |
| $V_F$    | Forward voltage @ $I_F$            |



# MMSZ4678 THRU MMSZ4717

SURFACE MOUNT ZENER DIODES

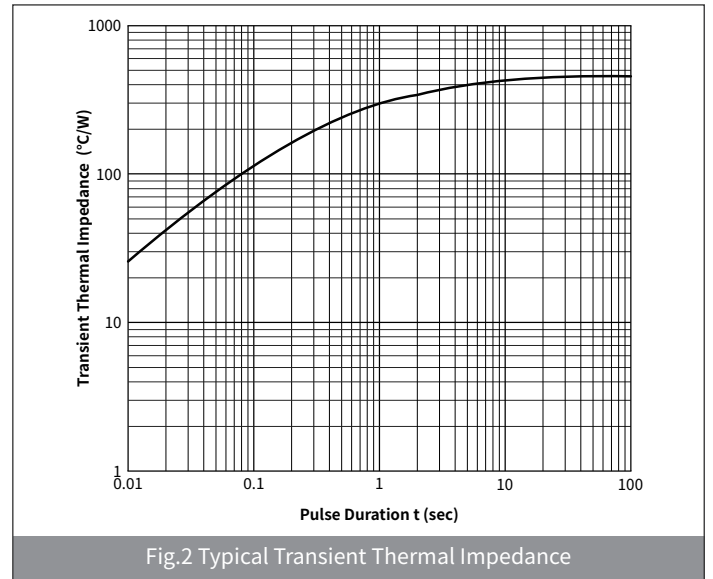
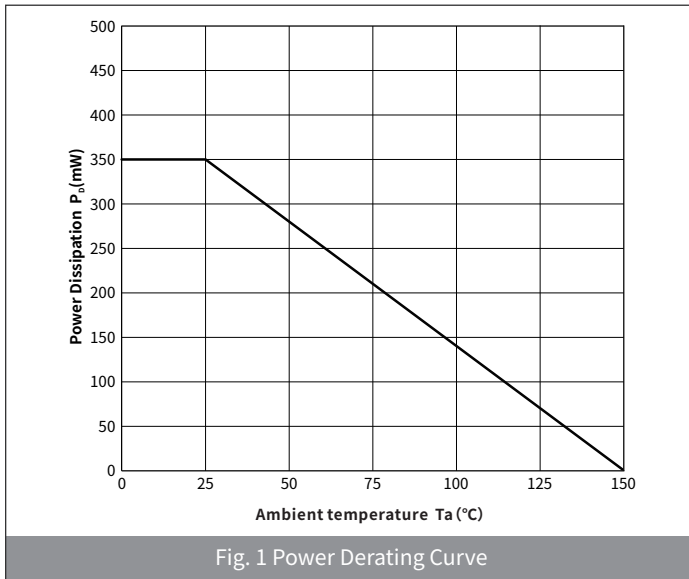
## ● Electrical Characteristics (Ta=25°C Unless otherwise noted)

| Type Number | Marking | Nominal Zener Voltage |      |       |                 | Leakage Current                |                    |
|-------------|---------|-----------------------|------|-------|-----------------|--------------------------------|--------------------|
|             |         | V <sub>Z</sub> (V)    |      |       | I <sub>ZT</sub> | I <sub>R</sub> @V <sub>R</sub> |                    |
|             |         | Min.                  | Nom. | Max.  | (μA)            | I <sub>R</sub> (μA)            | V <sub>R</sub> (V) |
| MMSZ4678    | CC      | 1.71                  | 1.8  | 1.89  | 50              | 7.5                            | 1.0                |
| MMSZ4679    | CD      | 1.90                  | 2.0  | 2.10  | 50              | 5                              | 1.0                |
| MMSZ4680    | CE      | 2.09                  | 2.2  | 2.31  | 50              | 4                              | 1.0                |
| MMSZ4681    | CF      | 2.28                  | 2.4  | 2.52  | 50              | 2                              | 1.0                |
| MMSZ4682    | CH      | 2.565                 | 2.7  | 2.835 | 50              | 1                              | 1.0                |
| MMSZ4683    | CJ      | 2.85                  | 3.0  | 3.15  | 50              | 0.8                            | 1.0                |
| MMSZ4684    | CK      | 3.13                  | 3.3  | 3.47  | 50              | 7.5                            | 1.5                |
| MMSZ4685    | CM      | 3.42                  | 3.6  | 3.78  | 50              | 7.5                            | 2.0                |
| MMSZ4686    | CN      | 3.70                  | 3.9  | 4.10  | 50              | 5                              | 2.0                |
| MMSZ4687    | CP      | 4.09                  | 4.3  | 4.52  | 50              | 4                              | 2.0                |
| MMSZ4688    | CT      | 4.47                  | 4.7  | 4.94  | 50              | 10                             | 3.0                |
| MMSZ4689    | CU      | 4.85                  | 5.1  | 5.36  | 50              | 10                             | 3.0                |
| MMSZ4690    | CV      | 5.32                  | 5.6  | 5.88  | 50              | 10                             | 4.0                |
| MMSZ4691    | CA      | 5.89                  | 6.2  | 6.51  | 50              | 10                             | 5.0                |
| MMSZ4692    | CX      | 6.46                  | 6.8  | 7.14  | 50              | 10                             | 5.1                |
| MMSZ4693    | CY      | 7.13                  | 7.5  | 7.88  | 50              | 10                             | 5.7                |
| MMSZ4694    | CZ      | 7.79                  | 8.2  | 8.61  | 50              | 1                              | 6.2                |
| MMSZ4695    | DC      | 8.27                  | 8.7  | 9.14  | 50              | 1                              | 6.6                |
| MMSZ4696    | DD      | 8.65                  | 9.1  | 9.56  | 50              | 1                              | 6.9                |
| MMSZ4697    | DE      | 9.50                  | 10   | 10.50 | 50              | 1                              | 7.6                |
| MMSZ4698    | DF      | 10.45                 | 11   | 11.55 | 50              | 0.05                           | 8.4                |
| MMSZ4699    | DH      | 11.40                 | 12   | 12.60 | 50              | 0.05                           | 9.1                |
| MMSZ4700    | DJ      | 12.35                 | 13   | 13.65 | 50              | 0.05                           | 9.8                |
| MMSZ4701    | DK      | 13.30                 | 14   | 14.70 | 50              | 0.05                           | 10.6               |
| MMSZ4702    | DM      | 14.25                 | 15   | 15.75 | 50              | 0.05                           | 11.4               |
| MMSZ4703    | DN      | 15.20                 | 16   | 16.80 | 50              | 0.05                           | 12.1               |
| MMSZ4704    | DP      | 16.15                 | 17   | 17.85 | 50              | 0.05                           | 12.9               |
| MMSZ4705    | DT      | 17.10                 | 18   | 18.90 | 50              | 0.05                           | 13.6               |
| MMSZ4706    | DU      | 18.05                 | 19   | 19.95 | 50              | 0.05                           | 14.4               |
| MMSZ4707    | DV      | 19.00                 | 20   | 21.00 | 50              | 0.01                           | 15.2               |
| MMSZ4708    | DA      | 20.90                 | 22   | 23.10 | 50              | 0.01                           | 16.7               |
| MMSZ4709    | DX      | 22.80                 | 24   | 25.20 | 50              | 0.01                           | 18.2               |
| MMSZ4710    | DY      | 23.75                 | 25   | 26.25 | 50              | 0.01                           | 19.0               |
| MMSZ4711    | EA      | 25.65                 | 27   | 28.35 | 50              | 0.01                           | 20.4               |
| MMSZ4712    | EC      | 26.60                 | 28   | 29.40 | 50              | 0.01                           | 21.2               |
| MMSZ4713    | ED      | 28.50                 | 30   | 31.50 | 50              | 0.01                           | 22.8               |
| MMSZ4714    | EE      | 31.35                 | 33   | 34.65 | 50              | 0.01                           | 25.0               |
| MMSZ4715    | EF      | 34.20                 | 36   | 37.80 | 50              | 0.01                           | 27.3               |
| MMSZ4716    | EH      | 37.05                 | 39   | 40.95 | 50              | 0.01                           | 29.6               |
| MMSZ4717    | EJ      | 40.85                 | 43   | 45.15 | 50              | 0.01                           | 32.6               |

# MMSZ4678 THRU MMSZ4717

SURFACE MOUNT ZENER DIODES

## ● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



## ● Ordering Information

| PACKAGE | PACKAGE CODE | UNIT WEIGHT(g) | REEL(pcs) | BOX(pcs) | CARTON(pcs) | DELIVERY MODE |
|---------|--------------|----------------|-----------|----------|-------------|---------------|
| SOD-123 | R1           | 0.012          | 3000      | 45000    | 180000      | 7"            |

## ● Package Outline Dimensions (SOD-123)

| Symbol | Dimensions  |      |        |       |
|--------|-------------|------|--------|-------|
|        | Millimeters |      | Inches |       |
|        | Min.        | Max. | Min.   | Max.  |
| A      | 3.55        | 3.85 | 0.140  | 0.152 |
| B      | 2.55        | 2.85 | 0.100  | 0.112 |
| C      | 1.40        | 1.80 | 0.055  | 0.071 |
| D      | 0.95        | 1.35 | 0.140  | 0.152 |
| E      | 0.51        | 0.71 | 0.037  | 0.053 |
| F      | -           | 0.15 | -      | 0.006 |
| G      | 0.15        | 0.45 | 0.006  | 0.008 |
| H      | 0.08        | 0.25 | 0.003  | 0.010 |
| θ      | -           | 8°   | -      | 8°    |

## ● Suggested Pad Layout

| Symbol | Dimensions  |      |        |       |
|--------|-------------|------|--------|-------|
|        | Millimeters |      | Inches |       |
|        | Min.        | Max. | Min.   | Max.  |
| J      | 0.91        | -    | 0.036  | -     |
| K      | -           | 2.36 | -      | 0.092 |
| M      | 1.22        | -    | 0.048  | -     |

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