

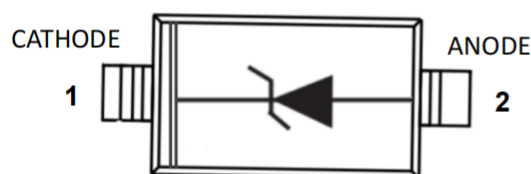
### Features

- Low Zener Impedance
- Power Dissipation of 500mW
- High Stability and High Reliability
- Halogen free and RoHS compliant
- SOD123 surface mount package

### Applications

- General voltage regulation
- Mobile & handheld systems
- Household Electric Appliances
- Industrial automation
- communication field

### Pin Configuration



SOD123



### Maximum Ratings& Thermal Characteristics

(Tamb=25°C unless otherwise specified)

| Parameter                                | Symbol | Value      | Unit |
|------------------------------------------|--------|------------|------|
| Forward Voltage @ IF=10mA                | VF     | 0.9        | V    |
| Power Dissipation                        | PD     | 500        | mW   |
| Thermal Resistance (Junction-to-Ambient) | RθJA   | 340        | °C/W |
| Junction Temperature Range               | TJ     | -55 ~ +150 | °C   |
| Storage Temperature Range                | TSTG   | -55 ~ +150 | °C   |

## MMSZ4xxxT1G-TP Series

### 500m Watt Zener Voltage Regulators

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#### Electrical Characteristics (TA=25°C unless otherwise specified)

| Part Number     | Zener Voltage          |     |       |                   | Leakage Current                 |       |
|-----------------|------------------------|-----|-------|-------------------|---------------------------------|-------|
|                 | V <sub>Z</sub> (Volts) |     |       | @ I <sub>ZT</sub> | I <sub>R</sub> @ V <sub>R</sub> |       |
|                 | Min                    | Nom | Max   | mA                | μA                              | Volts |
| MMSZ4678T1G -TP | 1.71                   | 1.8 | 1.89  | 5                 | 7.5                             | 1     |
| MMSZ4679T1G -TP | 1.90                   | 2.0 | 2.10  | 5                 | 5                               | 1     |
| MMSZ4680T1G -TP | 2.09                   | 2.2 | 2.31  | 5                 | 4                               | 1     |
| MMSZ4681T1G -TP | 2.28                   | 2.4 | 2.52  | 5                 | 2                               | 1     |
| MMSZ4682T1G -TP | 2.565                  | 2.7 | 2.835 | 5                 | 1                               | 1     |
| MMSZ4683T1G -TP | 2.85                   | 3.0 | 3.15  | 5                 | 0.8                             | 1     |
| MMSZ4684T1G -TP | 3.13                   | 3.3 | 3.47  | 5                 | 7.5                             | 1.5   |
| MMSZ4685T1G -TP | 3.42                   | 3.6 | 3.78  | 5                 | 7.5                             | 2     |
| MMSZ4686T1G -TP | 3.70                   | 3.9 | 4.10  | 5                 | 5                               | 2     |
| MMSZ4687T1G -TP | 4.09                   | 4.3 | 4.52  | 5                 | 4                               | 2     |
| MMSZ4688T1G -TP | 4.47                   | 4.7 | 4.94  | 5                 | 10                              | 3     |
| MMSZ4689T1G -TP | 4.85                   | 5.1 | 5.36  | 5                 | 10                              | 3     |
| MMSZ4690T1G -TP | 5.32                   | 5.6 | 5.88  | 5                 | 10                              | 4     |
| MMSZ4691T1G -TP | 5.89                   | 6.2 | 6.51  | 5                 | 10                              | 5     |
| MMSZ4692T1G -TP | 6.46                   | 6.8 | 7.14  | 5                 | 10                              | 5.1   |
| MMSZ4693T1G -TP | 7.13                   | 7.5 | 7.88  | 5                 | 10                              | 5.7   |
| MMSZ4694T1G -TP | 7.79                   | 8.2 | 8.61  | 5                 | 1                               | 6.2   |
| MMSZ4695T1G -TP | 8.27                   | 8.7 | 9.14  | 5                 | 1                               | 6.6   |
| MMSZ4696T1G -TP | 8.65                   | 9.1 | 9.56  | 5                 | 1                               | 6.9   |
| MMSZ4697T1G -TP | 9.50                   | 10  | 10.50 | 5                 | 1                               | 7.6   |
| MMSZ4698T1G -TP | 10.45                  | 11  | 11.55 | 5                 | 0.05                            | 8.4   |
| MMSZ4699T1G -TP | 11.40                  | 12  | 12.60 | 5                 | 0.05                            | 9.1   |
| MMSZ4700T1G -TP | 12.35                  | 13  | 13.65 | 5                 | 0.05                            | 9.8   |
| MMSZ4701T1G -TP | 13.30                  | 14  | 14.70 | 5                 | 0.05                            | 10.6  |
| MMSZ4702T1G -TP | 14.25                  | 15  | 15.75 | 5                 | 0.05                            | 11.4  |
| MMSZ4703T1G -TP | 15.20                  | 16  | 16.80 | 5                 | 0.05                            | 12.1  |
| MMSZ4704T1G -TP | 16.15                  | 17  | 17.85 | 5                 | 0.05                            | 12.9  |
| MMSZ4705T1G -TP | 17.10                  | 18  | 18.90 | 5                 | 0.05                            | 13.6  |

# MMSZ4xxxT1G-TP Series

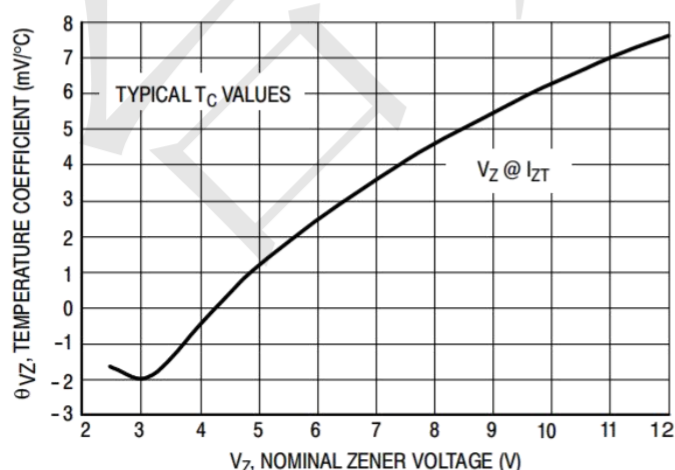
## 500m Watt Zener Voltage Regulators

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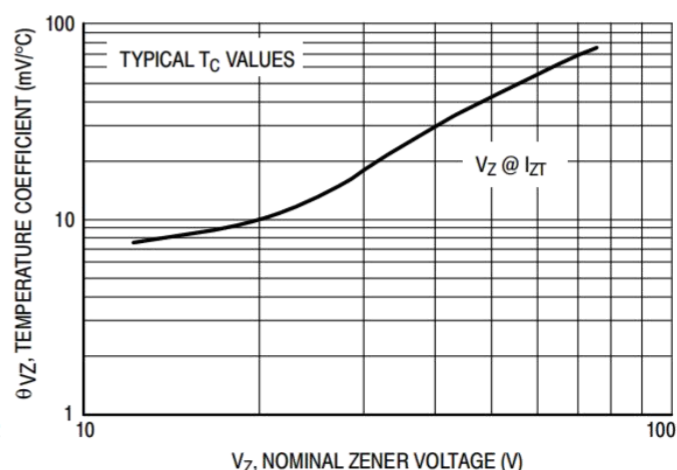
### Electrical Characteristics (TA=25°C unless otherwise specified)

| Part Number     | Zener Voltage          |     |       |                   | Leakage Current                 |       |
|-----------------|------------------------|-----|-------|-------------------|---------------------------------|-------|
|                 | V <sub>Z</sub> (Volts) |     |       | @ I <sub>ZT</sub> | I <sub>R</sub> @ V <sub>R</sub> |       |
|                 | Min                    | Nom | Max   | mA                | μA                              | Volts |
| MMSZ4706T1G -TP | 18.05                  | 19  | 19.95 | 5                 | 0.05                            | 14.4  |
| MMSZ4707T1G -TP | 19.00                  | 20  | 21.00 | 5                 | 0.01                            | 15.2  |
| MMSZ4708T1G -TP | 20.90                  | 22  | 23.10 | 5                 | 0.01                            | 16.7  |
| MMSZ4709T1G -TP | 22.80                  | 24  | 25.20 | 5                 | 0.01                            | 18.2  |
| MMSZ4710T1G -TP | 23.75                  | 25  | 26.25 | 5                 | 0.01                            | 19.0  |
| MMSZ4711T1G -TP | 25.65                  | 27  | 28.35 | 5                 | 0.01                            | 20.4  |
| MMSZ4712T1G -TP | 26.60                  | 28  | 29.40 | 5                 | 0.01                            | 21.2  |
| MMSZ4713T1G -TP | 28.50                  | 30  | 31.50 | 5                 | 0.01                            | 22.8  |
| MMSZ4714T1G -TP | 31.35                  | 33  | 34.65 | 5                 | 0.01                            | 25.0  |
| MMSZ4715T1G -TP | 34.20                  | 36  | 37.80 | 5                 | 0.01                            | 27.3  |
| MMSZ4716T1G -TP | 37.05                  | 39  | 40.95 | 5                 | 0.01                            | 29.6  |
| MMSZ4717T1G -TP | 40.85                  | 43  | 45.15 | 5                 | 0.01                            | 32.6  |

### Typical Characteristics Curves

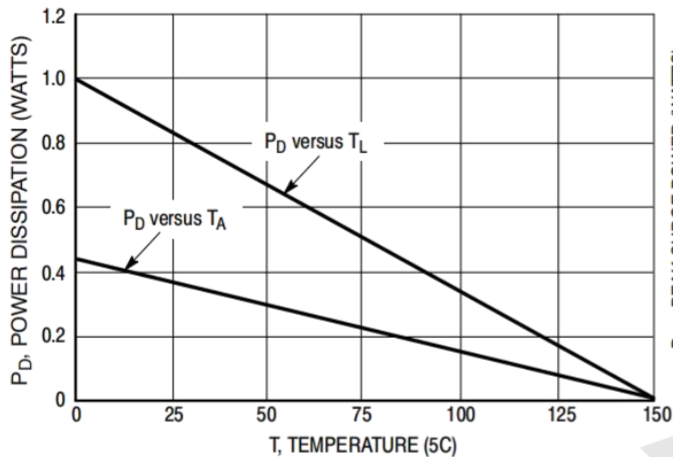


Temperature Coefficients  
(Temperature Range -55°C to +150°C)

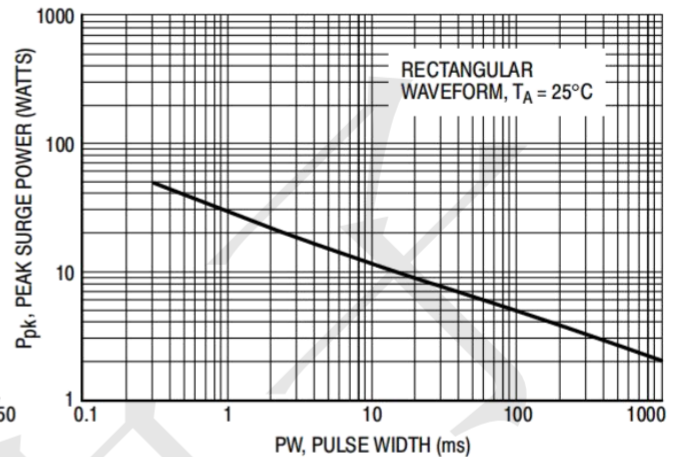


Temperature Coefficients  
(Temperature Range -55°C to +150°C)

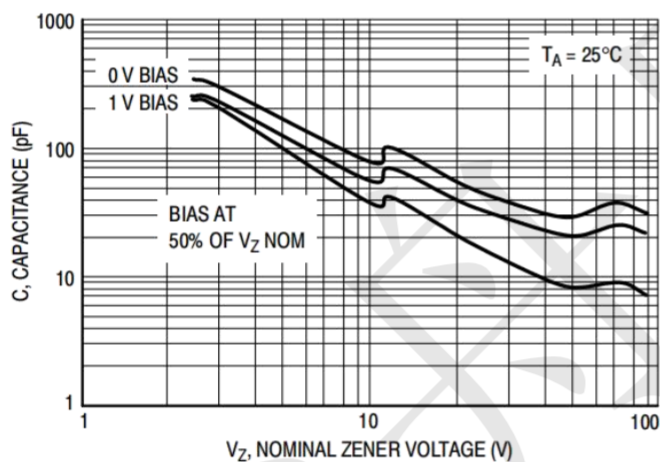
### Typical Characteristics Curves



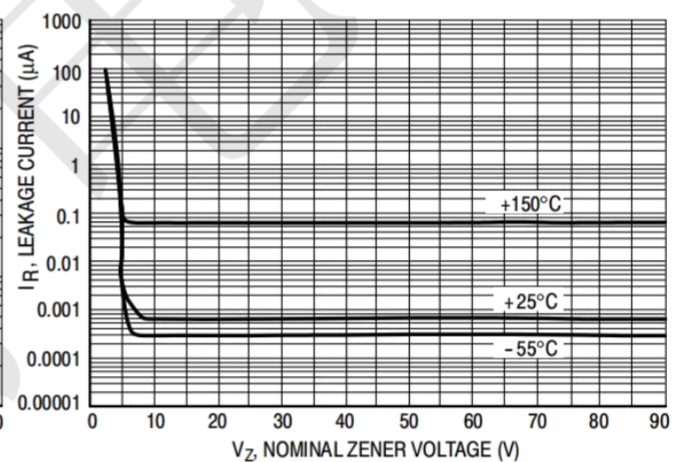
Steady State Power Derating



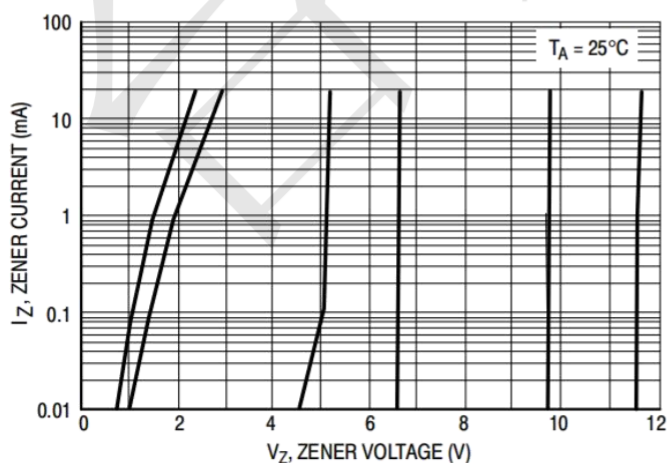
Maximum Nonrepetitive Surge Power



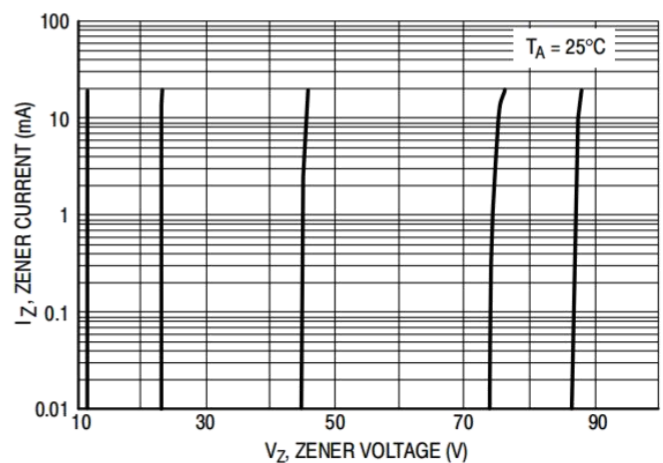
Typical Capacitance



Typical Leakage Current



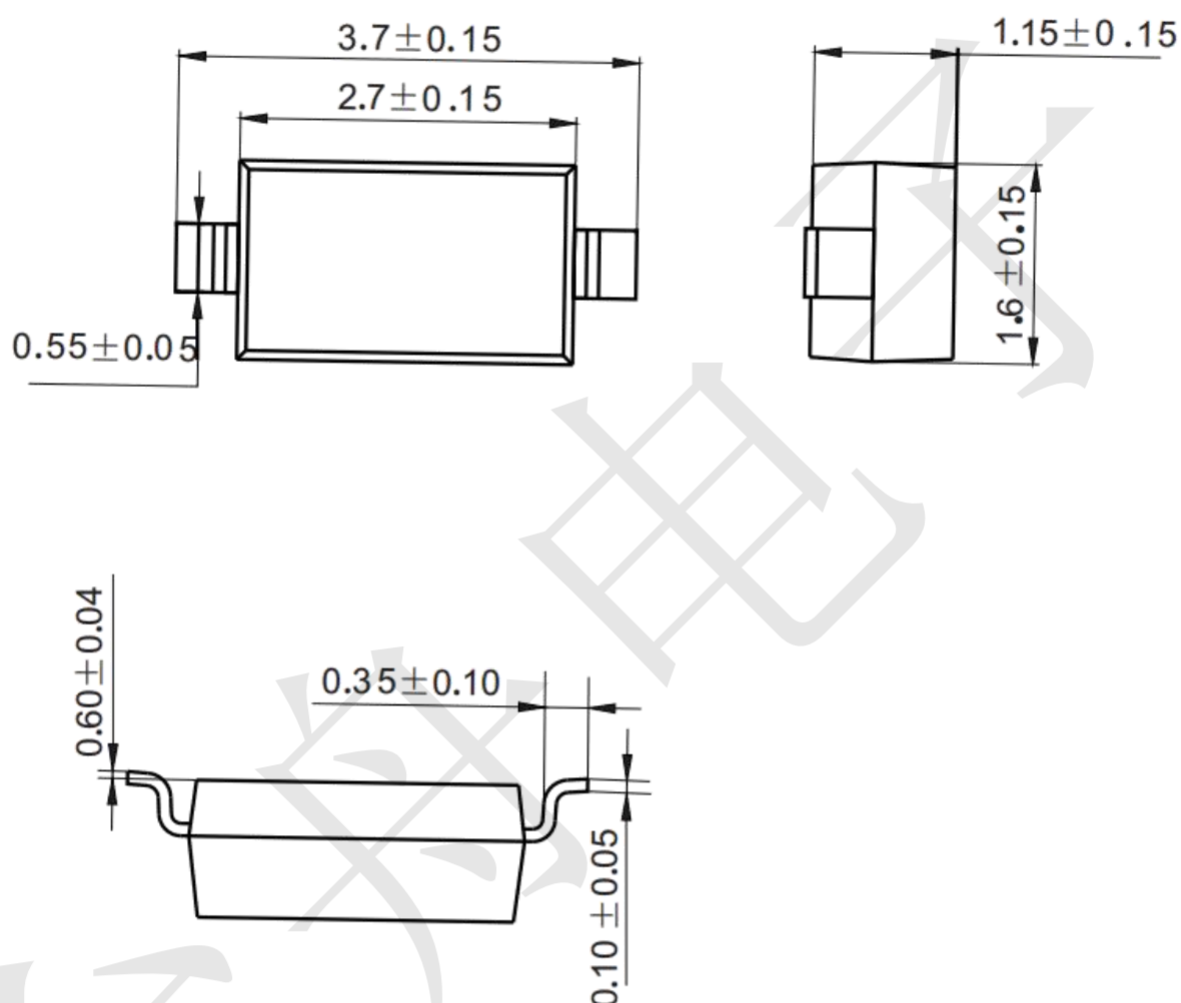
Zener Voltage versus Zener Current  
( $V_Z$  Up to 12 V)



Zener Voltage versus Zener Current  
(12 V to 91 V)

**Package Outline Dimensions (unit: mm)**

SOD123



**Mounting Pad Layout (unit: mm)**

