

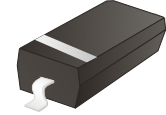
## MMSZ4678-HF Thru. MMSZ4717-HF

Voltage: 1.8 to 43 Volts

Power: 500mW

RoHS Device

Halogen Free



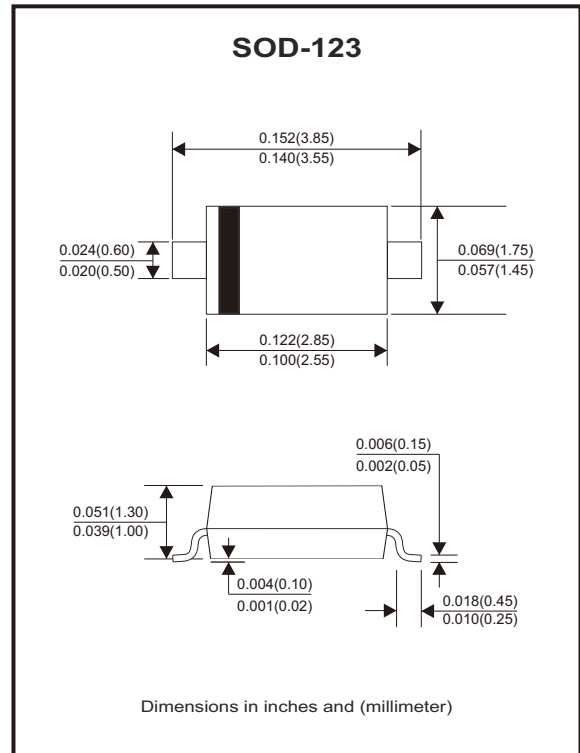
### Features

- Planar die construction.
- 500mW power dissipation.
- Wide zener reverse voltage range.
- Ideally suited for automated assembly processes.

### Mechanical data

- Case: SOD-123, molded plastic.

### Circuit diagram



### Maximum Rating (at Ta=25 °C unless otherwise specified)

| Parameter                                   | Symbol           | Value       | Unit |
|---|------------------|-------------|------|
| Forward voltage @ I <sub>F</sub> =10mA      | V <sub>F</sub>   | 0.9         | V    |
| Power dissipation                           | P <sub>D</sub>   | 500         | mW   |
| Thermal resistance, Junction to ambient air | R <sub>θJA</sub> | 250         | °C/W |
| Junction temperature                        | T <sub>J</sub>   | 150         | °C   |
| Storage temperature range                   | T <sub>STG</sub> | -55 to +150 | °C   |

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

| Part Number | Zener Voltage |     |       | Leakage Current |                                |      | Marking Code |
|-------------|---------------|-----|-------|-----------------|--------------------------------|------|--------------|
|             | Vz(V)         |     |       | @IzT            | I <sub>R</sub> @V <sub>R</sub> |      |              |
|             | Min           | Nom | Max   | μA              | μA                             | V    |              |
| MMSZ4678-HF | 1.71          | 1.8 | 1.89  | 50              | 7.5                            | 1    | CC           |
| MMSZ4679-HF | 1.90          | 2.0 | 2.10  | 50              | 5                              | 1    | CD           |
| MMSZ4680-HF | 2.09          | 2.2 | 2.31  | 50              | 4                              | 1    | CE           |
| MMSZ4681-HF | 2.28          | 2.4 | 2.31  | 50              | 2                              | 1    | CF           |
| MMSZ4682-HF | 2.565         | 2.7 | 2.835 | 50              | 1                              | 1    | CH           |
| MMSZ4683-HF | 2.85          | 3.0 | 3.15  | 50              | 0.8                            | 1    | CJ           |
| MMSZ4684-HF | 3.13          | 3.3 | 3.47  | 50              | 7.5                            | 1.5  | CK           |
| MMSZ4685-HF | 3.42          | 3.6 | 3.78  | 50              | 7.5                            | 2    | CM           |
| MMSZ4686-HF | 3.70          | 3.9 | 4.10  | 50              | 5                              | 2    | CN           |
| MMSZ4687-HF | 4.09          | 4.3 | 4.52  | 50              | 4                              | 2    | CP           |
| MMSZ4688-HF | 4.465         | 4.7 | 4.935 | 50              | 10                             | 3    | CT           |
| MMSZ4689-HF | 4.85          | 5.1 | 5.36  | 50              | 10                             | 3    | CU           |
| MMSZ4690-HF | 5.32          | 5.6 | 5.88  | 50              | 10                             | 4    | CV           |
| MMSZ4691-HF | 5.89          | 6.2 | 6.51  | 50              | 10                             | 5    | CA           |
| MMSZ4692-HF | 6.46          | 6.8 | 7.14  | 50              | 10                             | 5.1  | CX           |
| MMSZ4693-HF | 7.13          | 7.5 | 7.88  | 50              | 10                             | 5.7  | CY           |
| MMSZ4694-HF | 7.79          | 8.2 | 8.61  | 50              | 1                              | 6.2  | CZ           |
| MMSZ4695-HF | 8.27          | 8.7 | 9.14  | 50              | 1                              | 6.6  | DC           |
| MMSZ4696-HF | 8.65          | 9.1 | 9.56  | 50              | 1                              | 6.9  | DD           |
| MMSZ4697-HF | 9.50          | 10  | 10.50 | 50              | 1                              | 7.6  | DE           |
| MMSZ4698-HF | 10.45         | 11  | 11.55 | 50              | 0.05                           | 8.4  | DF           |
| MMSZ4699-HF | 11.40         | 12  | 12.60 | 50              | 0.05                           | 9.1  | DH           |
| MMSZ4700-HF | 12.35         | 13  | 13.65 | 50              | 0.05                           | 9.8  | DJ           |
| MMSZ4701-HF | 13.30         | 14  | 14.70 | 50              | 0.05                           | 10.6 | DK           |
| MMSZ4702-HF | 14.25         | 15  | 15.75 | 50              | 0.05                           | 11.4 | DM           |
| MMSZ4703-HF | 15.20         | 16  | 16.80 | 50              | 0.05                           | 12.1 | DN           |
| MMSZ4704-HF | 16.15         | 17  | 17.85 | 50              | 0.05                           | 12.9 | DP           |
| MMSZ4705-HF | 17.10         | 18  | 18.90 | 50              | 0.05                           | 13.6 | DT           |
| MMSZ4706-HF | 18.05         | 19  | 19.95 | 50              | 0.05                           | 14.4 | DU           |
| MMSZ4707-HF | 19.00         | 20  | 21.00 | 50              | 0.01                           | 15.2 | DV           |
| MMSZ4708-HF | 20.90         | 22  | 23.10 | 50              | 0.01                           | 16.7 | DA           |
| MMSZ4709-HF | 22.80         | 24  | 25.20 | 50              | 0.01                           | 18.2 | DX           |
| MMSZ4710-HF | 23.75         | 25  | 26.25 | 50              | 0.01                           | 19.0 | DY           |
| MMSZ4711-HF | 25.65         | 27  | 28.35 | 50              | 0.01                           | 20.4 | EA           |
| MMSZ4712-HF | 26.60         | 28  | 29.40 | 50              | 0.01                           | 21.2 | EC           |
| MMSZ4713-HF | 28.50         | 30  | 31.50 | 50              | 0.01                           | 22.8 | ED           |
| MMSZ4714-HF | 31.35         | 33  | 34.65 | 50              | 0.01                           | 25.0 | EE           |
| MMSZ4715-HF | 34.20         | 36  | 37.80 | 50              | 0.01                           | 27.3 | EF           |
| MMSZ4716-HF | 37.05         | 39  | 40.95 | 50              | 0.01                           | 29.6 | EH           |
| MMSZ4717-HF | 40.85         | 43  | 45.15 | 50              | 0.01                           | 32.6 | EJ           |

## Rating and Characteristic Curves (MMSZ4678-HF Thru. MMSZ4717-HF)

Fig.1 - Temperature Coefficients  
(Temperature Range -55°C to +150°C)

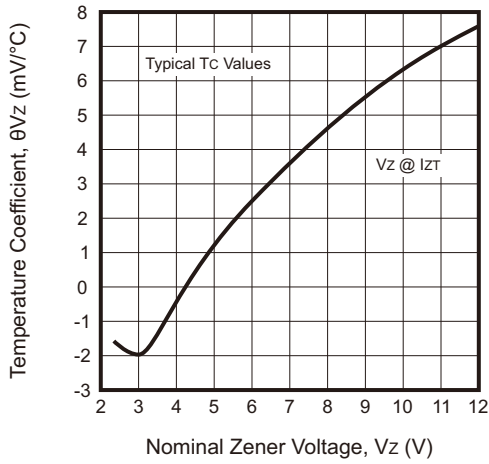


Fig.2 - Temperature Coefficients  
(Temperature Range -55°C to +150°C)

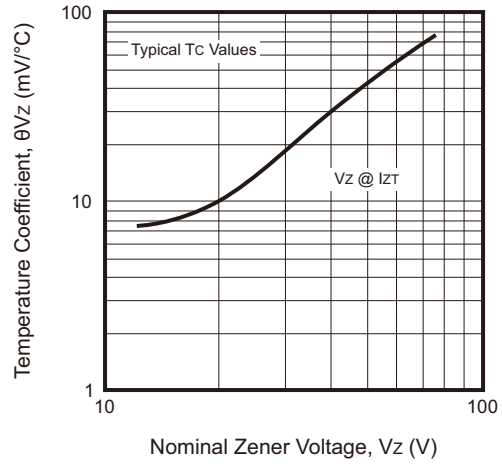


Fig.3 - Steady State Power Derating

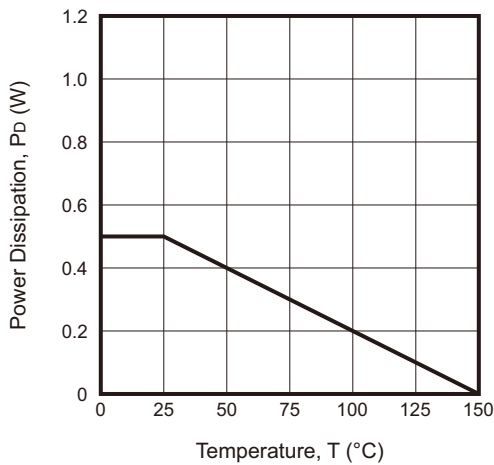


Fig.4 - Max. Non-repetitive Surge Power

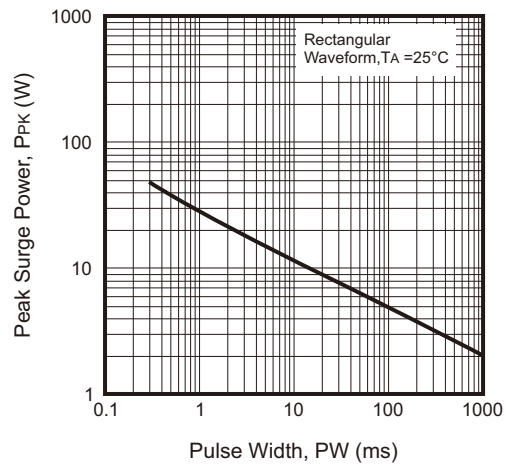


Fig.5 - Zener Voltage vs. Zener Current  
(Vz Up to 12V)

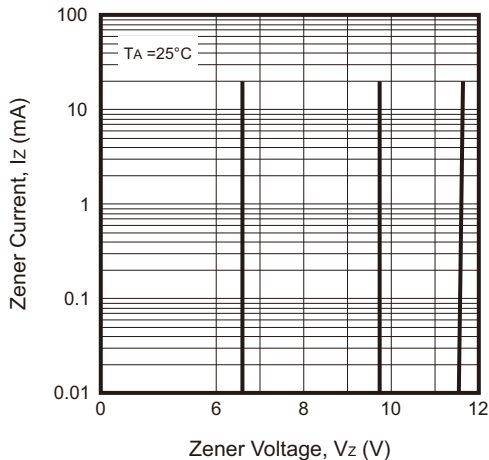
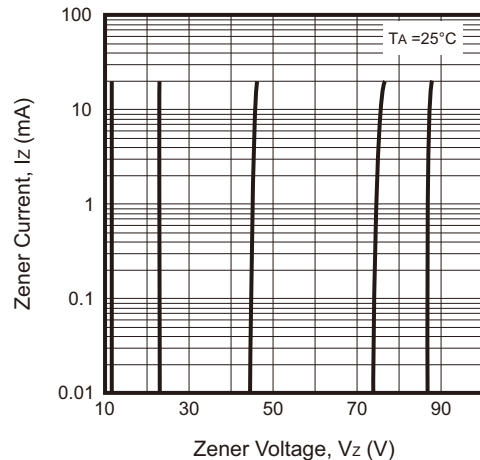
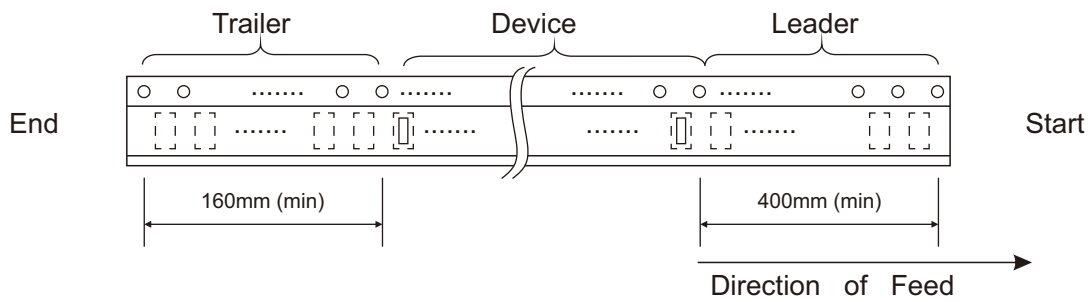
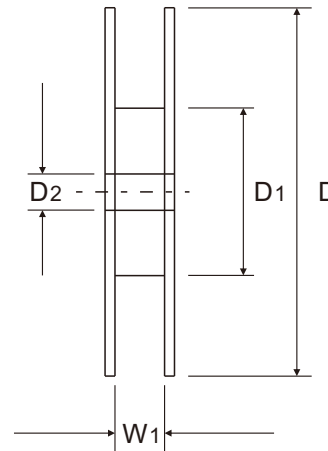
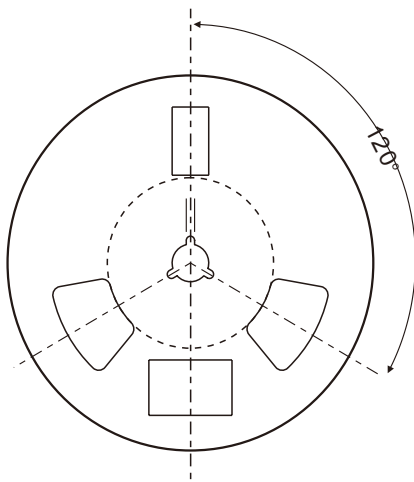
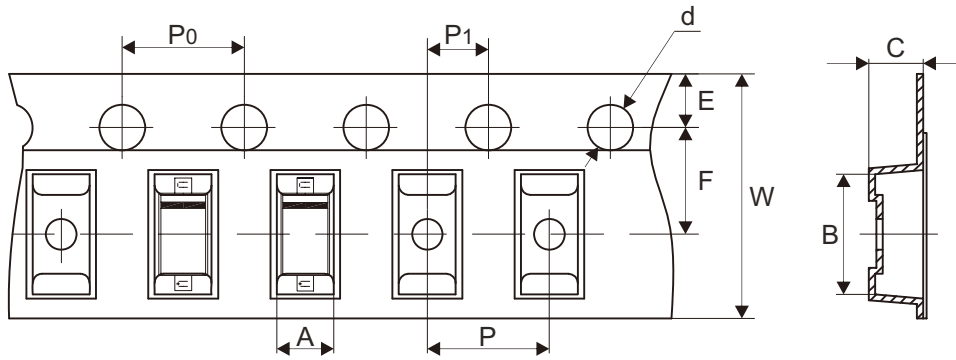


Fig.6 - Zener Voltage vs. Zener Current  
(12V to 91V)



## Reel Taping Specification



| SOD-123 | SYMBOL | A             | B             | C             | d             | D             | D1            | D2            |
|---------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|         | (mm)   | 1.85 ± 0.10   | 3.94 ± 0.10   | 1.57 ± 0.10   | 1.55 ± 0.05   | 178.00 ± 1.00 | 54.00 ± 0.50  | 13.00 ± 0.50  |
|         | (inch) | 0.073 ± 0.004 | 0.155 ± 0.004 | 0.062 ± 0.004 | 0.061 ± 0.002 | 7.008 ± 0.039 | 2.126 ± 0.020 | 0.512 ± 0.020 |

| SOD-123 | SYMBOL | E             | F             | P             | P1            | P0            | W                        | W1            |
|---------|--------|---------------|---------------|---------------|---------------|---------------|--------------------------|---------------|
|         | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.05   | 4.00 ± 0.10   | 2.00 ± 0.05   | 4.00 ± 0.10   | 8.00 + 0.30<br>- 0.10    | 9.50 ± 1.00   |
|         | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.157 ± 0.004 | 0.315 + 0.012<br>- 0.004 | 0.374 ± 0.039 |