



**THE DATASHEET OF  
MMSZ4706-TP**



## Features

- $V_Z$  – Tolerance  $\pm 5\%$
- High Reliability
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings

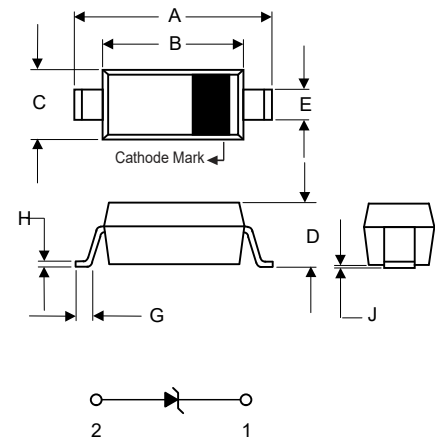
- Operating Junction Temperature Range:  $-55^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$
- Storage Temperature Range:  $-55^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$
- Thermal Resistance :  $340^{\circ}\text{C/W}$  Junction to Ambient

| Parameter                      | Symbol | Rating | Conditions                 |
|--------------------------------|--------|--------|----------------------------|
| Steady State Power Dissipation | $P_D$  | 500mW  | $T_L < 75^{\circ}\text{C}$ |
| Maximum Forward Voltage        | $V_F$  | 0.95V  | $I_F = 10\text{mA}$        |

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

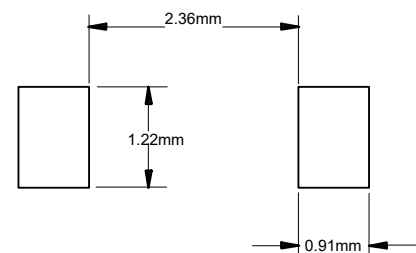
# 500 mW Zener Diode 1.8 to 39 Volts

## SOD-123



| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | 0.140  | 0.152 | 3.55 | 3.85 |      |
| B   | 0.100  | 0.112 | 2.55 | 2.85 |      |
| C   | 0.055  | 0.071 | 1.40 | 1.80 |      |
| D   | ----   | 0.053 | ---- | 1.35 |      |
| E   | 0.018  | 0.026 | 0.45 | 0.65 |      |
| G   | 0.006  | ----  | 0.15 | ---- |      |
| H   | ----   | 0.010 | ---- | 0.25 |      |
| J   | ----   | 0.006 | ---- | 0.15 |      |

### SUGGESTED SOLDER PAD LAYOUT



**Electrical Characteristics @ 25°C Unless Otherwise Specified**

| MCC<br>Part Number | Zener Voltage  |        |         |          | Leakage Current<br>$I_R @ V_R$ |       | Marking Code |
|--------------------|----------------|--------|---------|----------|--------------------------------|-------|--------------|
|                    | $V_Z @ I_{ZT}$ |        |         | $I_{ZT}$ | $I_R$                          | $V_R$ |              |
|                    | Min.(V)        | Nom(V) | Max.(V) | $\mu A$  | $\mu A$                        | V     |              |
| MMSZ4678           | 1.71           | 1.8    | 1.89    | 50       | 7.5                            | 1.0   | CC           |
| MMSZ4679           | 1.90           | 2.0    | 2.10    | 50       | 5.0                            | 1.0   | CD           |
| MMSZ4680           | 2.09           | 2.2    | 2.31    | 50       | 4.0                            | 1.0   | CE           |
| MMSZ4681           | 2.28           | 2.40   | 2.52    | 50       | 2.0                            | 1.0   | CF           |
| MMSZ4682           | 2.565          | 2.7    | 2.835   | 50       | 1.0                            | 1.0   | CH           |
| MMSZ4683           | 2.85           | 3.0    | 3.15    | 50       | 0.8                            | 1.0   | CJ           |
| MMSZ4684           | 3.135          | 3.3    | 3.465   | 50       | 7.5                            | 1.5   | CK           |
| MMSZ4685           | 3.42           | 3.6    | 3.78    | 50       | 7.5                            | 2.0   | CM           |
| MMSZ4686           | 3.705          | 3.9    | 4.095   | 50       | 5.0                            | 2.0   | CN           |
| MMSZ4687           | 4.085          | 4.3    | 4.515   | 50       | 4.0                            | 2.0   | CP           |
| MMSZ4688           | 4.465          | 4.7    | 4.935   | 50       | 10                             | 3.0   | CT           |
| MMSZ4689           | 4.845          | 5.1    | 5.355   | 50       | 10                             | 3.0   | CU           |
| MMSZ4690           | 5.32           | 5.6    | 5.88    | 50       | 10                             | 4.0   | CV           |
| MMSZ4691           | 5.89           | 6.2    | 6.51    | 50       | 10                             | 5.0   | CA           |
| MMSZ4692           | 6.46           | 6.8    | 7.14    | 50       | 10                             | 5.1   | CX           |
| MMSZ4693           | 7.125          | 7.5    | 7.875   | 50       | 10                             | 5.7   | CY           |
| MMSZ4694           | 7.79           | 8.2    | 8.61    | 50       | 1                              | 6.2   | CZ           |
| MMSZ4695           | 8.265          | 8.7    | 9.135   | 50       | 1                              | 6.6   | DC           |
| MMSZ4696           | 8.645          | 9.1    | 9.555   | 50       | 1                              | 6.9   | DD           |
| MMSZ4697           | 9.50           | 10     | 10.5    | 50       | 1                              | 7.6   | DE           |
| MMSZ4698           | 10.45          | 11     | 11.55   | 50       | 0.05                           | 8.4   | DF           |
| MMSZ4699           | 11.40          | 12     | 12.6    | 50       | 0.05                           | 9.1   | DH           |
| MMSZ4700           | 12.35          | 13     | 13.65   | 50       | 0.05                           | 9.8   | DJ           |
| MMSZ4701           | 13.30          | 14     | 14.7    | 50       | 0.05                           | 10.6  | DK           |
| MMSZ4702           | 14.25          | 15     | 15.75   | 50       | 0.05                           | 11.4  | DM           |
| MMSZ4703           | 15.20          | 16     | 16.8    | 50       | 0.05                           | 12.1  | DN           |
| MMSZ4704           | 16.15          | 17     | 17.85   | 50       | 0.05                           | 12.9  | DP           |
| MMSZ4705           | 17.10          | 18     | 18.9    | 50       | 0.05                           | 13.6  | DT           |
| MMSZ4706           | 18.05          | 19     | 19.95   | 50       | 0.05                           | 14.4  | DU           |
| MMSZ4707           | 19.00          | 20     | 21      | 50       | 0.01                           | 15.2  | DV           |
| MMSZ4708           | 20.9           | 22     | 23.1    | 50       | 0.01                           | 16.7  | DA           |
| MMSZ4709           | 22.8           | 24     | 25.2    | 50       | 0.01                           | 18.2  | DX           |
| MMSZ4710           | 23.75          | 25     | 26.25   | 50       | 0.01                           | 19.0  | DY           |
| MMSZ4711           | 25.65          | 27     | 28.35   | 50       | 0.01                           | 20.4  | EA           |
| MMSZ4712           | 26.6           | 28     | 29.4    | 50       | 0.01                           | 21.2  | EC           |
| MMSZ4713           | 28.5           | 30     | 31.5    | 50       | 0.01                           | 22.8  | ED           |
| MMSZ4714           | 31.35          | 33     | 34.65   | 50       | 0.01                           | 25.0  | EE           |
| MMSZ4715           | 34.2           | 36     | 37.8    | 50       | 0.01                           | 27.3  | EF           |
| MMSZ4716           | 37.05          | 39     | 40.95   | 50       | 0.01                           | 29.6  | EH           |

## Curve Characteristics

Fig. 1 - Steady State Power Derating

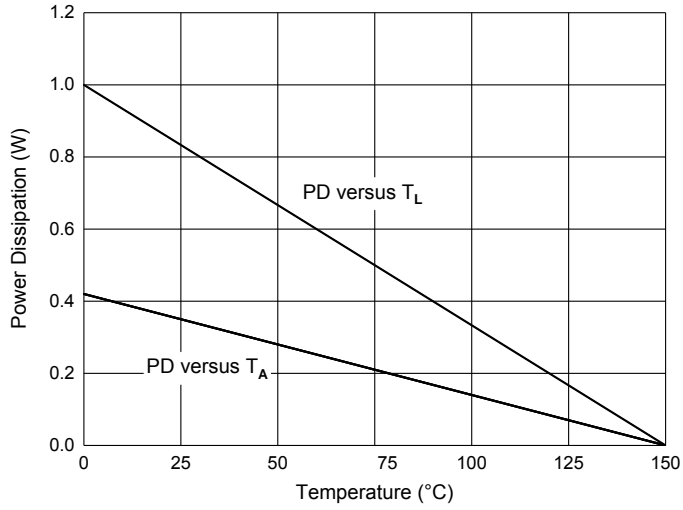


Fig. 2 - Typical Zener Breakdown Characteristics

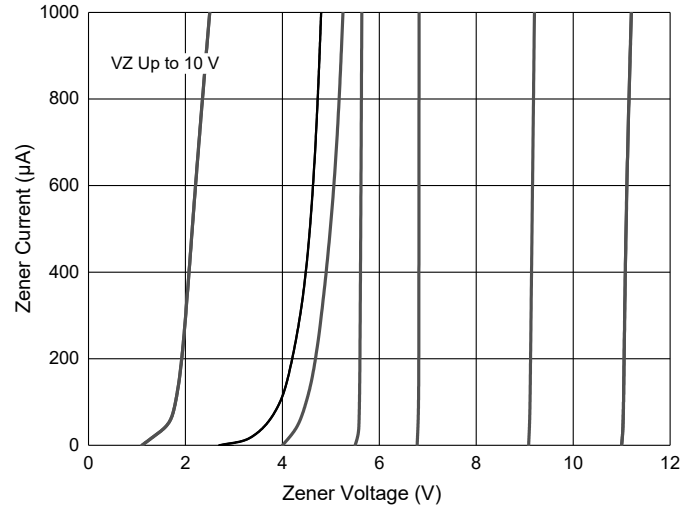
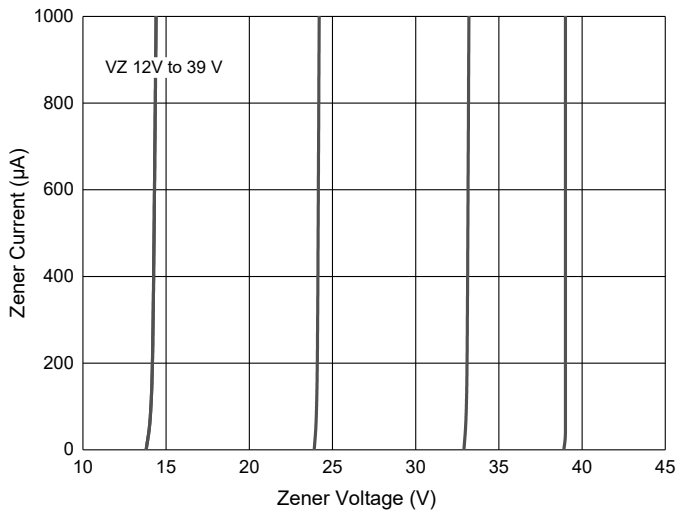


Fig. 3 - Typical Zener Breakdown Characteristics



## Ordering Information

| Device          | Packing               |
|-----------------|-----------------------|
| Part Number-TP  | Tape&Reel:3Kpcs/Reel  |
| Part Number-13P | Tape&Reel:10Kpcs/Reel |

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