



Micro Commercial Components

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## MMSZ4685 THRU MMSZ4701

### Features

- Small package size for high density applications
- $V_Z$ — tolerance  $\pm 5\%$
- High Reliability
- Lead Free Finish/RoHS Compliant("P" Suffix designates RoHS Compliant See ordering information)

### Mechanical Data

- Polarity: Cathode indicated by polarity band
- Case Material: Molded Plastic, UL Flammability Classification Rating 94V-0 and MSL Rating 1

### Maximum Ratings

|                                                                                    | Symbol     | Value      | Units            |
|------------------------------------------------------------------------------------|------------|------------|------------------|
| Max. Steady State Power Dissipation at $T_L < 75^\circ\text{C}$ , Lead Length=3/8" | $P_D$      | 500        | mW               |
| Junction Temperature                                                               | $T_J$      | 150        | $^\circ\text{C}$ |
| Storage Temperature Range                                                          | $T_{STG}$  | -55 to 150 | $^\circ\text{C}$ |
| Thermal Resistance( Junction to Ambient)                                           | $R_{thJA}$ | 340        | K/W              |

### Electrical Characteristics @ $25^\circ\text{C}$ Unless Otherwise Specified

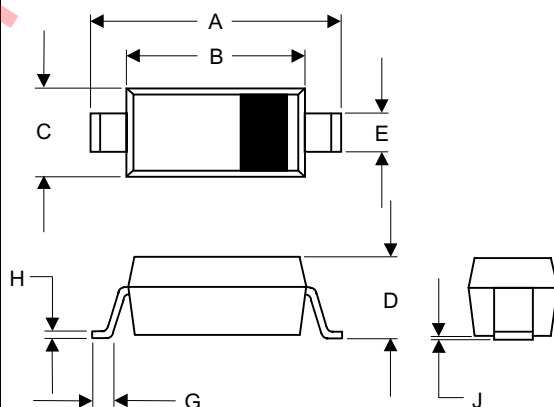
|                                          | Symbol | Maximum | Unit |
|------------------------------------------|--------|---------|------|
| Max. Forward Voltage @ $I_F=10\text{mA}$ | $V_F$  | 0.9     | V    |

#### NOTE:

- 1) Some part number series have lower JEDEC registered ratings.

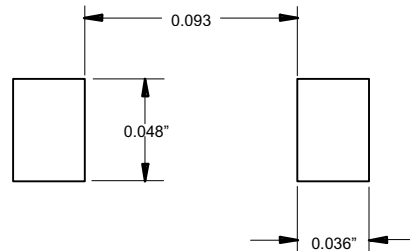
### 500mW Silicon Zener Diodes

#### SOD123



| DIM | INCHES |       | MM    |       | NOTE |
|-----|--------|-------|-------|-------|------|
|     | MIN    | MAX   | MIN   | MAX   |      |
| A   | .140   | .152  | 3.55  | 3.85  |      |
| B   | .100   | .112  | 2.55  | 2.85  |      |
| C   | .055   | .071  | 1.40  | 1.80  |      |
| D   | -----  | .053  | ----- | 1.35  |      |
| E   | .012   | .031  | 0.30  | .78   |      |
| G   | .006   | ----- | 0.15  | ----- |      |
| H   | -----  | .01   | ----- | .25   |      |
| J   | -----  | .006  | ----- | .15   |      |

#### SUGGESTED SOLDER PAD LAYOUT



# MMSZ4685 thru MMSZ4701



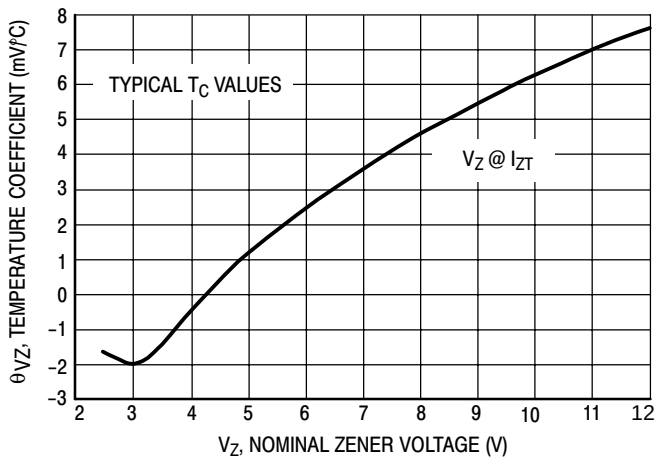
TM

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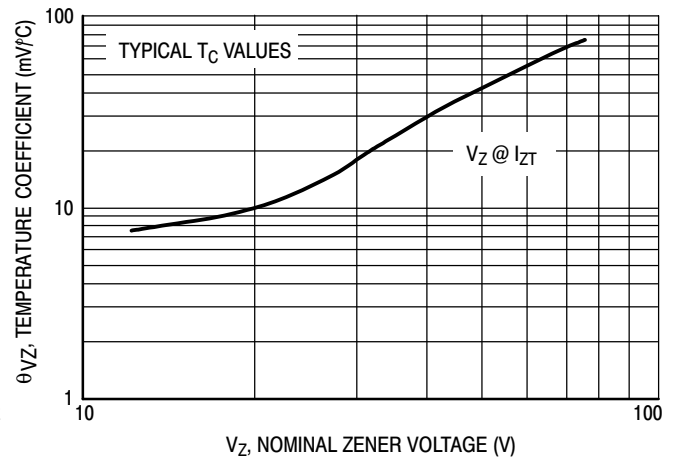
**Electrical Characteristics (T<sub>i</sub>= 30°C Unless Otherwise Noted, VF=0.95V Max @ IF=10mA for all types)**

| Device   | Zener Voltage          |     |      |                  | Leakage Current                |       | Device Marking |
|----------|------------------------|-----|------|------------------|--------------------------------|-------|----------------|
|          | V <sub>Z</sub> (Volts) |     |      | @I <sub>ZT</sub> | I <sub>R</sub> @V <sub>R</sub> |       |                |
|          | Min                    | Nom | Max  | u A              | u A                            | Volts |                |
| MMSZ4685 | 3.42                   | 3.6 | 3.78 | 50               | 7.5                            | 2.0   | CM             |
| MMSZ4686 | 3.70                   | 3.9 | 4.10 | 50               | 5.0                            | 2.0   | CN             |
| MMSZ4689 | 4.85                   | 5.1 | 5.36 | 50               | 10                             | 3.0   | CU             |
| MMSZ4692 | 6.46                   | 6.8 | 7.14 | 50               | 10                             | 5.1   | CX             |
| MMSZ4693 | 7.13                   | 7.5 | 7.88 | 50               | 10                             | 5.7   | CY             |
| MMSZ4701 | 13.30                  | 14  | 14.7 | 50               | 0.05                           | 10.6  | DK             |

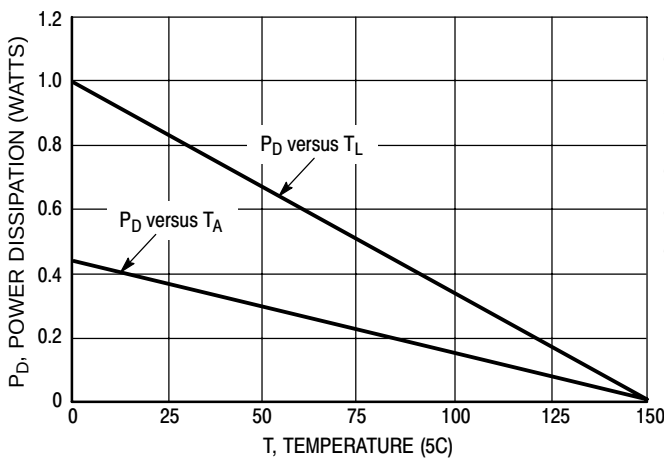
## TYPICAL CHARACTERISTICS



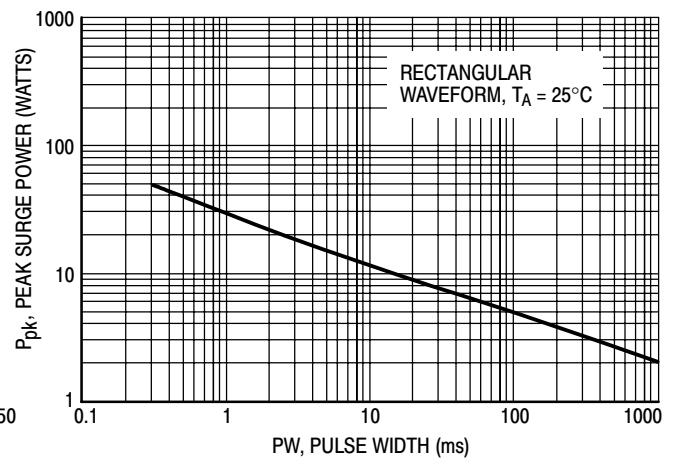
**Figure 1. Temperature Coefficients**  
(Temperature Range -55°C to +150°C)



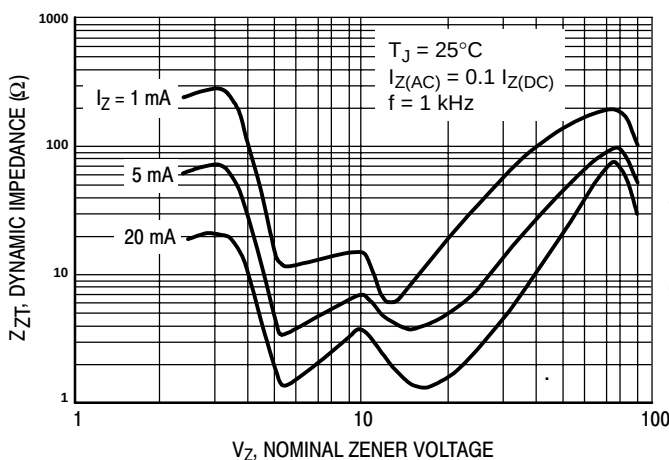
**Figure 2. Temperature Coefficients**  
(Temperature Range -55°C to +150°C)



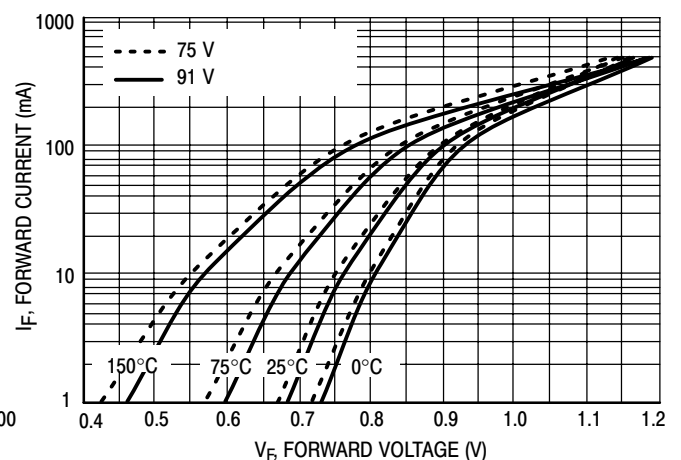
**Figure 3. Steady State Power Derating**



**Figure 4. Maximum Nonrepetitive Surge Power**



**Figure 5. Effect of Zener Voltage on**  
**Zener Impedance**



**Figure 6. Typical Forward Voltage**

## TYPICAL CHARACTERISTICS

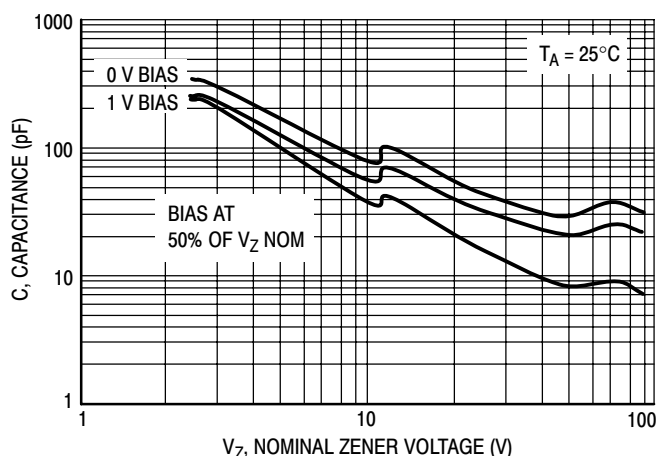


Figure 7. Typical Capacitance

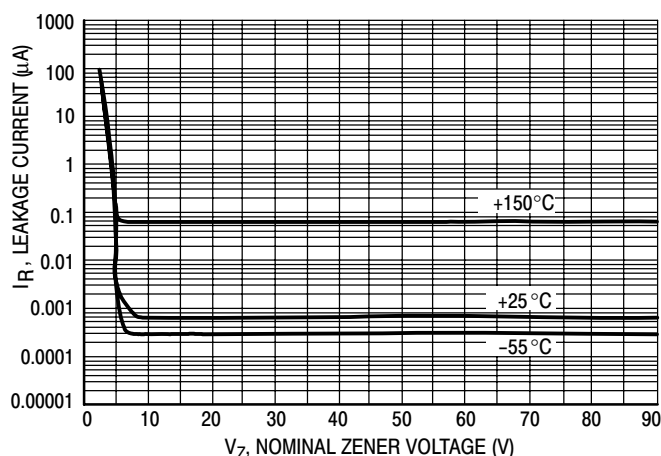


Figure 8. Typical Leakage Current

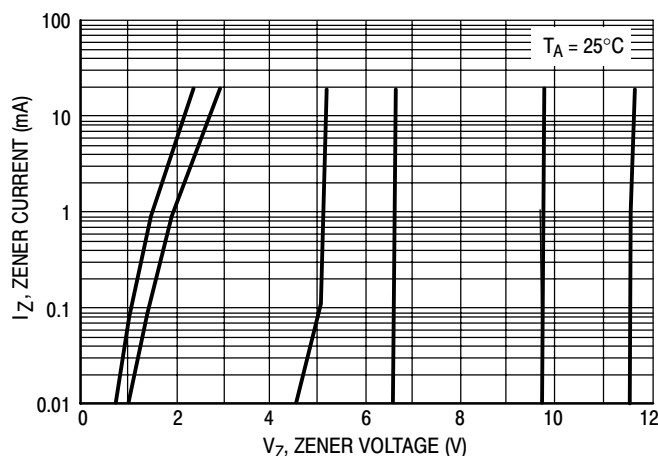


Figure 9. Zener Voltage versus Zener Current ( $V_Z$  Up to 12 V)

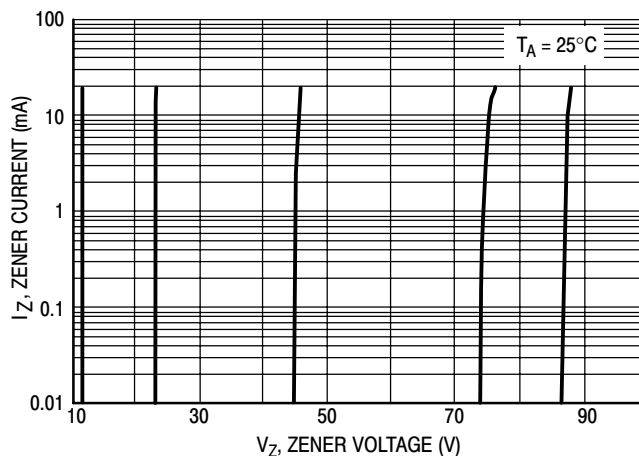


Figure 10. Zener Voltage versus Zener Current (12 V to 91 V)

## Ordering Information

| Device           | Packing              |
|------------------|----------------------|
| (Part Number)-TP | Tape&Reel;3Kpcs/Reel |

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