



## MMSZ4687-V SERIES

### SURFACE MOUNT SILICON ZENER DIODES

**VOLTAGE** 4.3 to 43 Volts **POWER** 500 mWatts

#### FEATURES

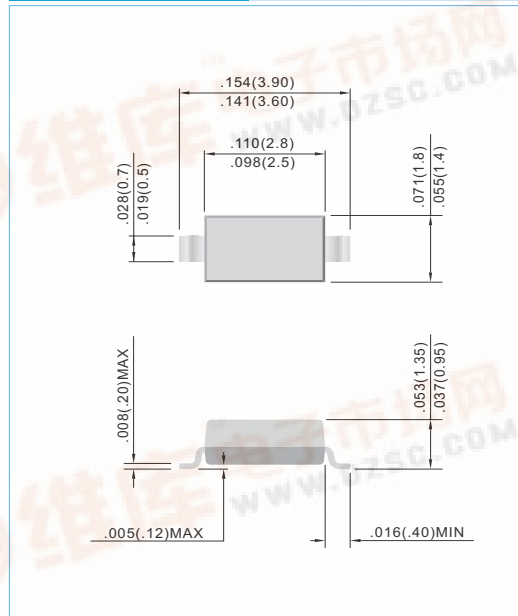
- Planar Die construction
- 500mW Power Dissipation
- Ideally Suited for Automated Assembly Processes
- In compliance with EU RoHS 2002/95/EC directives

#### MECHANICAL DATA

- Case: SOD-123, Molded Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: See Diagram Below
- Approx. Weight: 0.01grams
- Mounting Position: Any

SOD-123

Unit: inch (mm)



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

| Parameter                                                      | Symbol | Value       | Units              |
|----------------------------------------------------------------|--------|-------------|--------------------|
| Maximum Power Dissipation @ $T_A=25^{\circ}\text{C}$ (Notes A) | $P_D$  | 500         | mW                 |
| Operating Junction and Storage Temperature Range               | $T_J$  | -50 to +150 | $^{\circ}\text{C}$ |

#### NOTES:

A. Mounted on 5.0mm<sup>2</sup>(.013mm thick) land areas.

B. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.



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| Part Number | Nominal Zener Voltage            |        |        | Max. Zener Impedance             |      |                                  |    | Max Reverse Leakage Current     |      | Marking Code |
|-------------|----------------------------------|--------|--------|----------------------------------|------|----------------------------------|----|---------------------------------|------|--------------|
|             | V <sub>Z</sub> @ I <sub>ZT</sub> |        |        | Z <sub>ZT</sub> @I <sub>ZT</sub> |      | Z <sub>ZK</sub> @I <sub>ZK</sub> |    | I <sub>R</sub> @ V <sub>R</sub> |      |              |
|             | Nom. V                           | Min. V | Max. V | Ω                                | mA   | Ω                                | mA | μA                              | V    |              |
| MMSZ4687-V  | 4.3                              | 4.09   | 4.52   | -                                | 0.05 | -                                | -  | 4                               | 2    | CP           |
| MMSZ4688-V  | 4.7                              | 4.47   | 4.94   | -                                | 0.05 | -                                | -  | 10                              | 3    | CT           |
| MMSZ4689-V  | 5.1                              | 4.85   | 5.36   | -                                | 0.05 | -                                | -  | 10                              | 3    | CU           |
| MMSZ4690-V  | 5.6                              | 5.32   | 5.88   | -                                | 0.05 | -                                | -  | 10                              | 4    | CV           |
| MMSZ4691-V  | 6.2                              | 5.89   | 6.51   | -                                | 0.05 | -                                | -  | 10                              | 5    | CA           |
| MMSZ4692-V  | 6.8                              | 6.46   | 7.14   | -                                | 0.05 | -                                | -  | 10                              | 5.1  | CX           |
| MMSZ4693-V  | 7.5                              | 7.13   | 7.88   | -                                | 0.05 | -                                | -  | 10                              | 5.7  | CY           |
| MMSZ4694-V  | 8.2                              | 7.79   | 8.61   | -                                | 0.05 | -                                | -  | 1                               | 6.2  | CZ           |
| MMSZ4695-V  | 8.7                              | 8.27   | 9.14   | -                                | 0.05 | -                                | -  | 1                               | 6.6  | DC           |
| MMSZ4696-V  | 9.1                              | 8.65   | 9.56   | -                                | 0.05 | -                                | -  | 1                               | 6.9  | DD           |
| MMSZ4697-V  | 10                               | 9.50   | 10.50  | -                                | 0.05 | -                                | -  | 1                               | 7.6  | DE           |
| MMSZ4698-V  | 11                               | 10.50  | 11.60  | -                                | 0.05 | -                                | -  | 0.05                            | 8.4  | DF           |
| MMSZ4699-V  | 12                               | 11.40  | 12.60  | -                                | 0.05 | -                                | -  | 0.05                            | 9.1  | DH           |
| MMSZ4700-V  | 13                               | 12.40  | 13.70  | -                                | 0.05 | -                                | -  | 0.05                            | 9.8  | DJ           |
| MMSZ4701-V  | 14                               | 13.30  | 14.70  | -                                | 0.05 | -                                | -  | 0.05                            | 10.6 | DK           |
| MMSZ4702-V  | 15                               | 14.30  | 15.80  | -                                | 0.05 | -                                | -  | 0.05                            | 11.4 | DM           |
| MMSZ4703-V  | 16                               | 15.20  | 16.80  | -                                | 0.05 | -                                | -  | 0.05                            | 12.1 | DN           |
| MMSZ4704-V  | 17                               | 16.20  | 17.90  | -                                | 0.05 | -                                | -  | 0.05                            | 12.9 | DP           |
| MMSZ4705-V  | 18                               | 17.10  | 18.90  | -                                | 0.05 | -                                | -  | 0.05                            | 13.6 | DT           |
| MMSZ4706-V  | 19                               | 18.10  | 20.00  | -                                | 0.05 | -                                | -  | 0.05                            | 14.4 | DU           |
| MMSZ4707-V  | 20                               | 19.00  | 21.00  | -                                | 0.05 | -                                | -  | 0.01                            | 15.2 | DV           |
| MMSZ4708-V  | 22                               | 20.90  | 23.10  | -                                | 0.05 | -                                | -  | 0.01                            | 16.7 | DA           |
| MMSZ4709-V  | 24                               | 22.80  | 25.20  | -                                | 0.05 | -                                | -  | 0.01                            | 18.2 | DZ           |
| MMSZ4710-V  | 25                               | 23.80  | 26.30  | -                                | 0.05 | -                                | -  | 0.01                            | 19   | DY           |
| MMSZ4711-V  | 27                               | 25.70  | 28.40  | -                                | 0.05 | -                                | -  | 0.01                            | 20.4 | EA           |
| MMSZ4712-V  | 28                               | 26.60  | 29.40  | -                                | 0.05 | -                                | -  | 0.01                            | 21.2 | EC           |
| MMSZ4713-V  | 30                               | 28.50  | 31.50  | -                                | 0.05 | -                                | -  | 0.01                            | 22.8 | ED           |
| MMSZ4714-V  | 33                               | 31.40  | 34.70  | -                                | 0.05 | -                                | -  | 0.01                            | 25   | EE           |
| MMSZ4715-V  | 36                               | 34.20  | 37.80  | -                                | 0.05 | -                                | -  | 0.01                            | 27.3 | EF           |
| MMSZ4716-V  | 39                               | 37.10  | 41.00  | -                                | 0.05 | -                                | -  | 0.01                            | 29.6 | EH           |
| MMSZ4717-V  | 43                               | 40.90  | 45.20  | -                                | 0.05 | -                                | -  | 0.01                            | 32.6 | EJ           |

## MMSZ4687-V SERIES

### Typical Characteristics

$T_{amb} = 25^\circ\text{C}$  unless otherwise specified

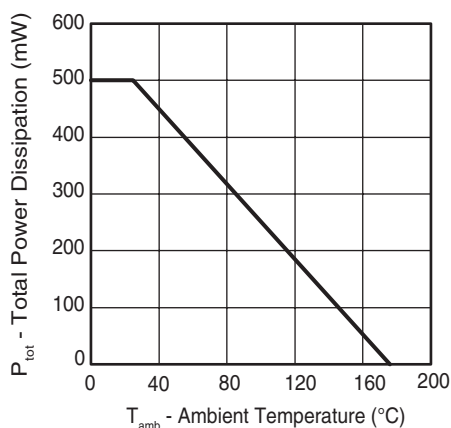


Figure 1. Total Power Dissipation vs. Ambient Temperature

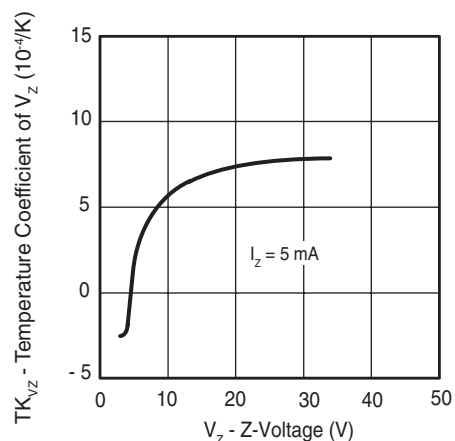


Figure 4. Temperature Coefficient of  $V_z$  vs. Z-Voltage

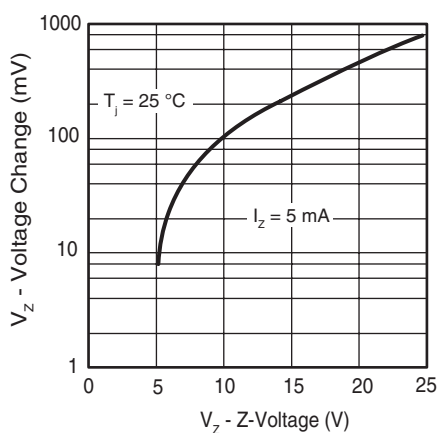


Figure 2. Typical Change of Working Voltage under Operating Conditions at  $T_{amb}=25^\circ\text{C}$

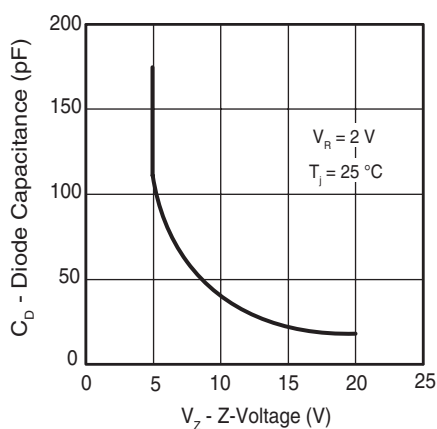


Figure 5. Diode Capacitance vs. Z-Voltage

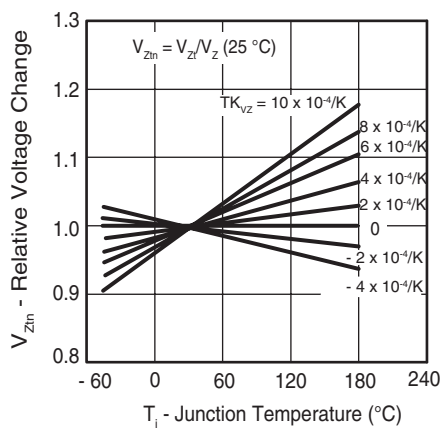


Figure 3. Typical Change of Working Voltage vs. Junction Temperature

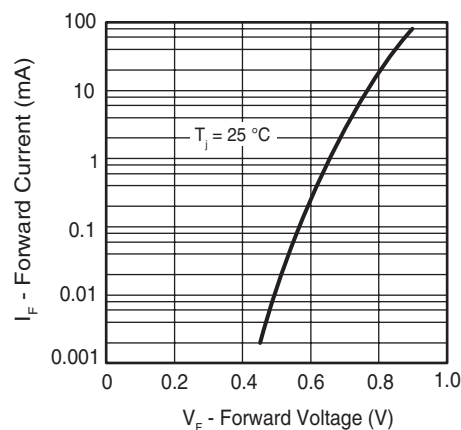


Figure 6. Forward Current vs. Forward Voltage

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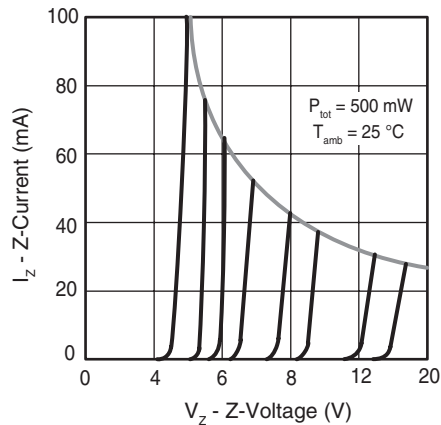


Figure 7. Z-Current vs. Z-Voltage

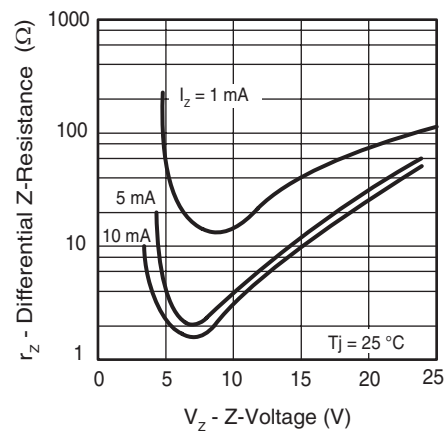


Figure 9. Differential Z-Resistance vs. Z-Voltage

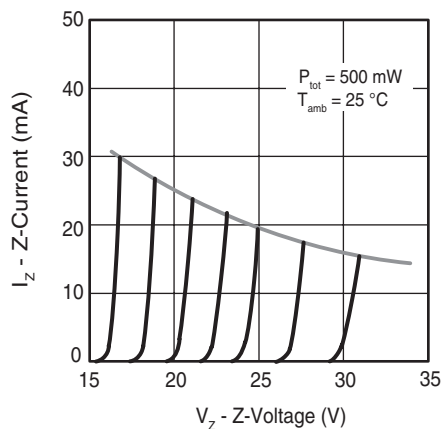


Figure 8. Z-Current vs. Z-Voltage

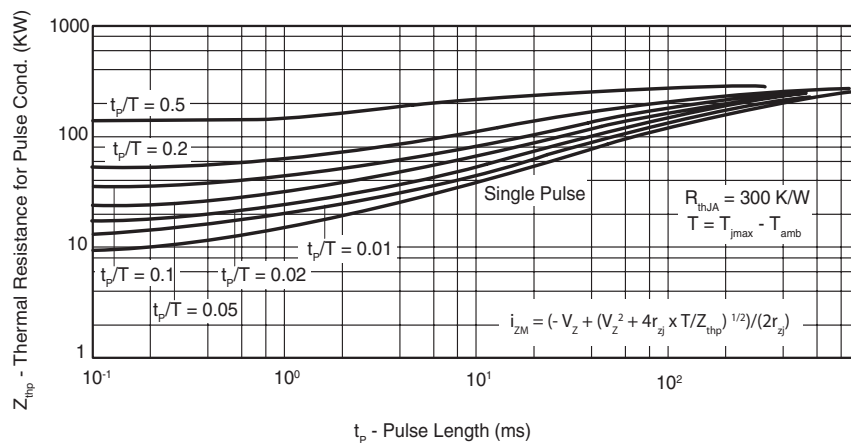


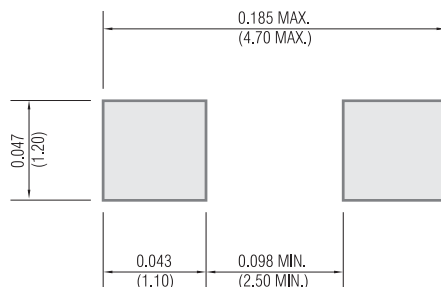
Figure 10. Thermal Response

## MMSZ4687-V SERIES

### MOUNTING PAD LAYOUT

SOD-123

Unit: inch ( mm )



### ORDER INFORMATION

- Packing information
  - T/R - 10K per 13" plastic Reel
  - T/R - 3K per 7" plastic Reel

### LEGAL STATEMENT

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