

## **ZMM2V4 - ZMM75**

## 500mW SURFACE MOUNT ZENER DIODE

#### **Features**

- Planar Die Construction
- Sealed Glass Case
- Ideally Suited for Automated Insertion
- 2.4V 75V Nominal Zener Voltages

## **Mechanical Data**

Case: MiniMELF, Glass

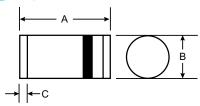
Terminals: Solderable per MIL-STD-202,

Method 208

Polarity: Cathode Band

Approx. Weight: 0.05 grams

## NOT FOR NEW DESIGN, **USE BZT52C2V4 - BZT52C51**



| MiniMELF             |      |      |  |  |  |  |
|----------------------|------|------|--|--|--|--|
| Dim                  | Min  | Max  |  |  |  |  |
| Α                    | 3.30 | 3.70 |  |  |  |  |
| В                    | 1.30 | 1.60 |  |  |  |  |
| С                    | 0.28 | 0.50 |  |  |  |  |
| All Dimensions in mm |      |      |  |  |  |  |

#### @ T<sub>A</sub> = 25°C unless otherwise specified **Maximum Ratings**

| Characteristic                                       | Symbol                            | Value       | Unit |  |  |
|--|-----------------------------------|-------------|------|--|--|
| Power Dissipation (Note 2)                           | P <sub>d</sub>                    | 500         | mW   |  |  |
| Forward Voltage @ I <sub>F</sub> = 200mA             | V <sub>F</sub>                    | 1.5         | V    |  |  |
| Thermal Resistance, Junction to Ambient Air (Note 2) | $R_{	heta JA}$                    | 300         | K/W  |  |  |
| Operating and Storage Temperature Range              | T <sub>j</sub> , T <sub>STG</sub> | -55 to +175 | °C   |  |  |

Notes:

- Tested with Pulses, tp = 20ms.
  Valid provided that Electrodes are kept at Ambient Temperature.

## **Electrical Characteristics** @ T<sub>A</sub> = 25°C unless otherwise specified

| Type<br>Number | Nominal Zener<br>Voltage<br>(Note 1)<br>Vz @ I <sub>ZT</sub> |      | Zener<br>Voltage<br>Range        | Maximum<br>Zener<br>Impedance<br>Z <sub>ZT</sub> @ I <sub>ZT</sub> | Maximum Zener<br>Impedance<br>Z <sub>ZK</sub> @ I <sub>ZK</sub> |      | Maximum<br>Leakage Current @ V <sub>R</sub> |  |                | Temperature    |
|----------------|--|------|----------------------------------|--|---|------|---|--|----------------|----------------|
|                |  |      | V <sub>Z</sub> @ I <sub>ZT</sub> |  |   |      | I <sub>R</sub> @<br>T <sub>J</sub> = 25°C   | I <sub>R</sub> @<br>T <sub>J</sub> = 150°C | V <sub>R</sub> | Coefficient    |
|                | (V)  | (mA) | (V)                              | <b>(</b> Ω <b>)</b>  | <b>(</b> Ω <b>)</b>   | (mA) | (μΑ)  | (μΑ)                                       | (V)            | (%/K)          |
| ZMM2V4         | 2.4  | 5.0  | 2.28 to 2.56                     | 85   | 600   | 1.0  | 50  | 100  | 1.0            | -0.09 to -0.06 |
| ZMM2V7         | 2.7  | 5.0  | 2.5 to 2.9                       | 85   | 600   | 1.0  | 10  | 50   | 1.0            | -0.09 to -0.06 |
| ZMM3V0         | 3.0  | 5.0  | 2.8 to 3.2                       | 90   | 600   | 1.0  | 4.0   | 40   | 1.0            | -0.08 to -0.05 |
| ZMM3V3         | 3.3  | 5.0  | 3.1 to 3.5                       | 90   | 600   | 1.0  | 2.0   | 40   | 1.0            | -0.08 to -0.05 |
| ZMM3V6         | 3.6  | 5.0  | 3.4 to 3.8                       | 90   | 600   | 1.0  | 2.0   | 40   | 1.0            | -0.08 to -0.05 |
| ZMM3V9         | 3.9  | 5.0  | 3.7 to 4.1                       | 90   | 600   | 1.0  | 2.0   | 40   | 1.0            | -0.08 to -0.05 |
| ZMM4V3         | 4.3  | 5.0  | 4.0 to 4.6                       | 90   | 600   | 1.0  | 1.0   | 20   | 1.0            | -0.06 to -0.03 |
| ZMM4V7         | 4.7  | 5.0  | 4.4 to 5.0                       | 80   | 600   | 1.0  | 0.5   | 10   | 1.0            | -0.05 to +0.02 |
| ZMM5V1         | 5.1  | 5.0  | 4.8 to 5.4                       | 60   | 550   | 1.0  | 0.1   | 2.0  | 1.0            | -0.02 to +0.02 |
| ZMM5V6         | 5.6  | 5.0  | 5.2 to 6.0                       | 40   | 450   | 1.0  | 0.1   | 2.0  | 1.0            | -0.05 to +0.05 |
| ZMM6V2         | 6.2  | 5.0  | 5.8 to 6.6                       | 10   | 200   | 1.0  | 0.1   | 2.0  | 2.0            | 0.03 to 0.06   |
| ZMM6V8         | 6.8  | 5.0  | 6.4 to 7.2                       | 8.0  | 150   | 1.0  | 0.1   | 2.0  | 3.0            | 0.03 to 0.07   |
| ZMM7V5         | 7.5  | 5.0  | 7.0 to 7.9                       | 7.0  | 50  | 1.0  | 0.1   | 2.0  | 5.0            | 0.03 to 0.07   |
| ZMM8V2         | 8.2  | 5.0  | 7.7 to 8.7                       | 7.0  | 50  | 1.0  | 0.1   | 2.0  | 6.2            | 0.03 to 0.08   |
| ZMM9V1         | 9.1  | 5.0  | 8.5 to 9.6                       | 10   | 50  | 1.0  | 0.1   | 2.0  | 6.8            | 0.03 to 0.09   |
| ZMM10          | 10   | 5.0  | 9.4 to 10.6                      | 15   | 70  | 1.0  | 0.1   | 2.0  | 7.5            | 0.03 to 0.10   |
| ZMM11          | 11   | 5.0  | 10.4 to 11.6                     | 20   | 70  | 1.0  | 0.1   | 2.0  | 8.2            | 0.03 to 0.11   |
| ZMM12          | 12   | 5.0  | 11.4 to 12.7                     | 20   | 90  | 1.0  | 0.1   | 2.0  | 9.1            | 0.03 to 0.11   |
| ZMM13          | 13   | 5.0  | 12.4 to 14.1                     | 26   | 110   | 1.0  | 0.1   | 2.0  | 10             | 0.03 to 0.11   |
| ZMM15          | 15   | 5.0  | 13.8 to 15.6                     | 30   | 110   | 1.0  | 0.1   | 2.0  | 11             | 0.03 to 0.11   |
| ZMM16          | 16   | 5.0  | 15.3 to 17.1                     | 40   | 170   | 1.0  | 0.1   | 2.0  | 12             | 0.03 to 0.11   |
| ZMM18          | 18   | 5.0  | 16.8 to 19.1                     | 50   | 170   | 1.0  | 0.1   | 2.0  | 13             | 0.03 to 0.11   |
| ZMM20          | 20   | 5.0  | 18.8 to 21.2                     | 55   | 220   | 1.0  | 0.1   | 2.0  | 15             | 0.03 to 0.11   |
| ZMM22          | 22   | 5.0  | 20.8 to 23.3                     | 55   | 220   | 1.0  | 0.1   | 2.0  | 16             | 0.04 to 0.12   |
| ZMM24          | 24   | 5.0  | 22.8 to 25.6                     | 80   | 220   | 1.0  | 0.1   | 2.0  | 18             | 0.04 to 0.12   |
| ZMM27          | 27   | 5.0  | 25.1 to 28.9                     | 80   | 220   | 1.0  | 0.1   | 2.0  | 20             | 0.04 to 0.12   |
| ZMM30          | 30   | 5.0  | 28 to 32                         | 80   | 220   | 1.0  | 0.1   | 2.0  | 22             | 0.04 to 0.12   |
| ZMM33          | 33   | 5.0  | 31 to 35                         | 80   | 220   | 1.0  | 0.1   | 2.0  | 24             | 0.04 to 0.12   |
| ZMM36          | 36   | 5.0  | 34 to 38                         | 80   | 220   | 1.0  | 0.1   | 2.0  | 27             | 0.04 to 0.12   |
| ZMM39          | 39   | 2.5  | 37 to 41                         | 90   | 500   | 0.5  | 0.1   | 5.0  | 30             | 0.04 to 0.12   |
| ZMM43          | 43   | 2.5  | 40 to 46                         | 90   | 600   | 0.5  | 0.1   | 5.0  | 33             | 0.04 to 0.12   |
| ZMM47          | 47   | 2.5  | 44 to 50                         | 110  | 700   | 0.5  | 0.1   | 5.0  | 36             | 0.04 to 0.12   |
| ZMM51          | 51   | 2.5  | 48 to 54                         | 125  | 700   | 0.5  | 0.1   | 10   | 39             | 0.04 to 0.12   |
| ZMM56          | 56   | 2.5  | 52 to 60                         | 135  | 1000  | 0.5  | 0.1   | 10   | 43             | 0.04 to 0.12   |
| ZMM62          | 62   | 2.5  | 58 to 66                         | 150  | 1000  | 0.5  | 0.1   | 10   | 47             | 0.04 to 0.12   |
| ZMM68          | 68   | 2.5  | 64 to 72                         | 200  | 1000  | 0.5  | 0.1   | 10   | 51             | 0.04 to 0.12   |
| ZMM75          | 75   | 2.5  | 70 to 79                         | 250  | 1500  | 0.5  | 0.1   | 10   | 56             | 0.04 to 0.12   |

Notes:

Tested with pulses t<sub>p</sub> = 20 ms.
 Valid provided that electrodes are kept at ambient temperature.

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