

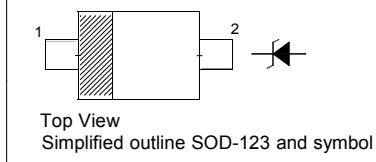
## SILICON PLANAR ZENER DIODES

**Features**

- Total power dissipation: max. 500 mW
- Small plastic package suitable for surface mounted design
- High reliability

## PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Cathode     |
| 2   | Anode       |

**Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )**

| Parameter                 | Symbol           | Value         | Unit |
|---------------------------|------------------|---------------|------|
| Power Dissipation         | $P_{\text{tot}}$ | 500           | mW   |
| Junction Temperature      | $T_j$            | 150           | °C   |
| Storage Temperature Range | $T_{\text{Stg}}$ | - 55 to + 150 | °C   |

**Characteristics at  $T_a = 25^\circ\text{C}$** 

| Parameter                                   | Symbol           | Max. | Unit |
|---|------------------|------|------|
| Thermal Resistance Junction to Ambient Air  | $R_{\text{thA}}$ | 340  | °C/W |
| Forward Voltage<br>at $I_F = 10 \text{ mA}$ | $V_F$            | 0.9  | V    |

Characteristics at  $T_a = 25^\circ\text{C}$ 

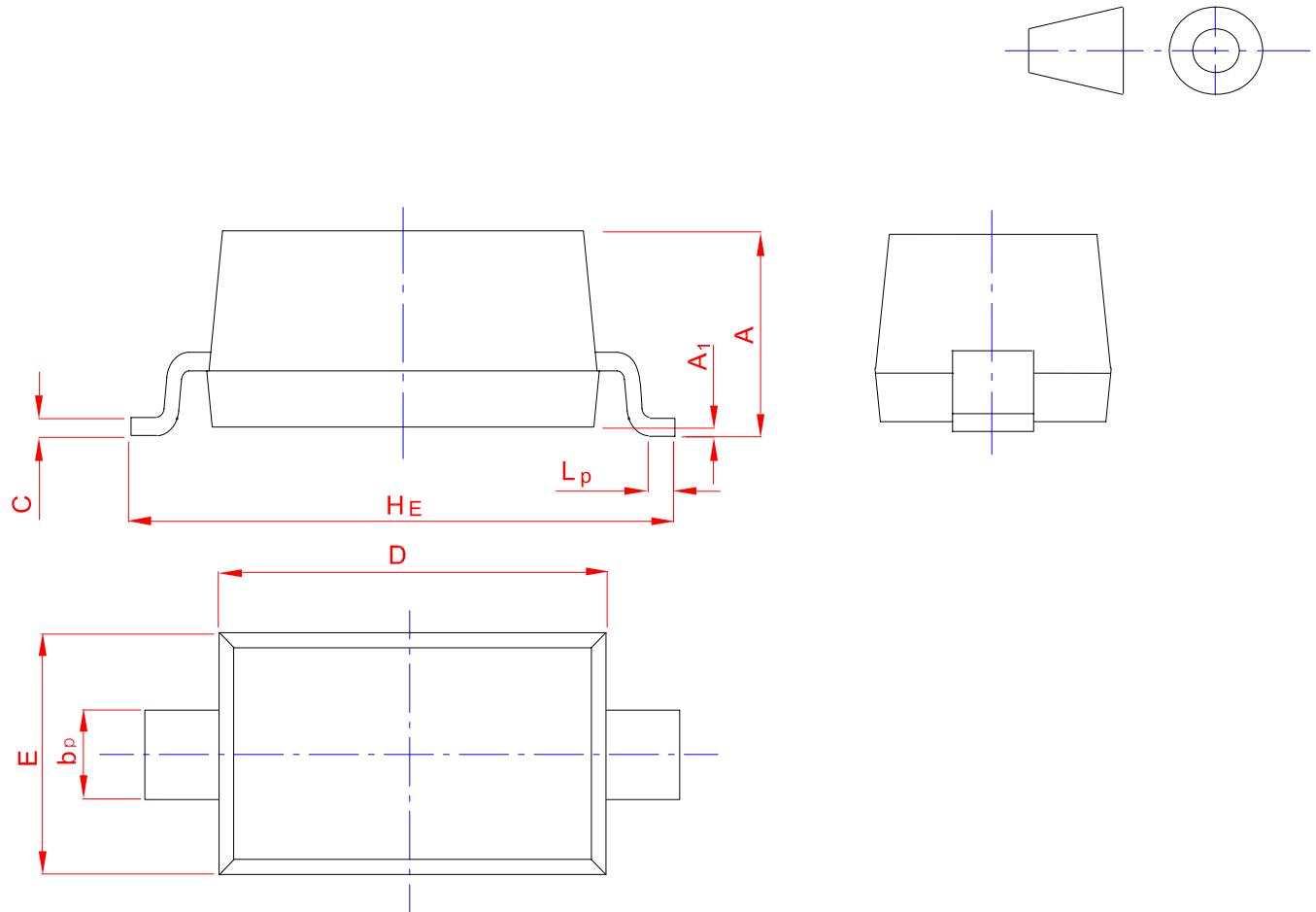
| Type     | Marking Code | Zener Voltage Range <sup>1)</sup> |                       |               | Dynamic Impedance <sup>2)</sup> |          | Reverse Leakage Current |     |
|----------|--------------|-----------------------------------|-----------------------|---------------|---------------------------------|----------|-------------------------|-----|
|          |              | $V_{znom}$                        | $I_{ZT}$ for $V_{ZT}$ |               | $Z_{ZT}$ (Max.)                 | $I_{ZT}$ | $I_R$ (Max.)            |     |
|          |              |                                   | $V$                   | $\text{mA}$   |                                 |          | $\mu\text{A}$           | $V$ |
| MM1Z2V2B | 9B           | 2.2                               | 5                     | 2.1...2.4     | 100                             | 5        | 120                     | 0.7 |
| MM1Z2V4B | 9C           | 2.4                               | 5                     | 2.3...2.65    | 100                             | 5        | 120                     | 1   |
| MM1Z2V7B | 9D           | 2.7                               | 5                     | 2.65...2.95   | 110                             | 5        | 120                     | 1   |
| MM1Z3V0B | 9E           | 3.0                               | 5                     | 2.95...3.25   | 120                             | 5        | 50                      | 1   |
| MM1Z3V3B | 9F           | 3.3                               | 5                     | 3.25...3.55   | 120                             | 5        | 20                      | 1   |
| MM1Z3V6B | 9H           | 3.6                               | 5                     | 3.6...3.845   | 100                             | 5        | 10                      | 1   |
| MM1Z3V9B | 9J           | 3.9                               | 5                     | 3.89...4.16   | 100                             | 5        | 5                       | 1   |
| MM1Z4V3B | 9K           | 4.3                               | 5                     | 4.17...4.43   | 100                             | 5        | 5                       | 1   |
| MM1Z4V7B | 9M           | 4.7                               | 5                     | 4.55...4.75   | 100                             | 5        | 2                       | 1   |
| MM1Z5V1B | 9N           | 5.1                               | 5                     | 4.98...5.2    | 80                              | 5        | 2                       | 1.5 |
| MM1Z5V6B | 9P           | 5.6                               | 5                     | 5.49...5.73   | 60                              | 5        | 1                       | 2.5 |
| MM1Z6V2B | 9R           | 6.2                               | 5                     | 6.06...6.33   | 60                              | 5        | 1                       | 3   |
| MM1Z6V8B | 9X           | 6.8                               | 5                     | 6.65...6.93   | 40                              | 5        | 0.5                     | 3.5 |
| MM1Z7V5B | 9Y           | 7.5                               | 5                     | 7.28...7.6    | 30                              | 5        | 0.5                     | 4   |
| MM1Z8V2B | 9Z           | 8.2                               | 5                     | 8.02...8.36   | 30                              | 5        | 0.5                     | 5   |
| MM1Z9V1B | 0A           | 9.1                               | 5                     | 8.85...9.23   | 30                              | 5        | 0.5                     | 6   |
| MM1Z10B  | 0B           | 10                                | 5                     | 9.77...10.21  | 30                              | 5        | 0.1                     | 7   |
| MM1Z11B  | 0C           | 11                                | 5                     | 10.76...11.22 | 30                              | 5        | 0.1                     | 8   |
| MM1Z12B  | 0D           | 12                                | 5                     | 11.74...12.24 | 30                              | 5        | 0.1                     | 9   |
| MM1Z13B  | 0E           | 13                                | 5                     | 12.91...13.49 | 37                              | 5        | 0.1                     | 10  |
| MM1Z15B  | 0F           | 15                                | 5                     | 14.81...15.47 | 42                              | 5        | 0.1                     | 11  |
| MM1Z16B  | 0H           | 16                                | 5                     | 15.85...16.51 | 50                              | 5        | 0.1                     | 12  |
| MM1Z18B  | 0J           | 18                                | 5                     | 17.56...18.35 | 65                              | 5        | 0.1                     | 13  |
| MM1Z20B  | 0K           | 20                                | 5                     | 19.52...20.39 | 85                              | 5        | 0.1                     | 15  |
| MM1Z22B  | 0M           | 22                                | 5                     | 21.54...22.47 | 100                             | 5        | 0.1                     | 17  |
| MM1Z24B  | 0N           | 24                                | 5                     | 23.72...24.78 | 120                             | 5        | 0.1                     | 19  |
| MM1Z27B  | 0P           | 27                                | 5                     | 26.19...27.53 | 150                             | 5        | 0.1                     | 21  |
| MM1Z30B  | 0R           | 30                                | 5                     | 29.19...30.69 | 200                             | 5        | 0.1                     | 23  |
| MM1Z33B  | 0X           | 33                                | 5                     | 32.15...33.79 | 250                             | 5        | 0.1                     | 25  |
| MM1Z36B  | 0Y           | 36                                | 5                     | 35.07...36.87 | 300                             | 5        | 0.1                     | 27  |
| MM1Z39B  | 0Z           | 39                                | 5                     | 37...41       | 100                             | 5        | 2                       | 30  |

<sup>1)</sup>  $V_Z$  is tested with pulses(20 ms).<sup>2)</sup>  $Z_{ZT}$  is measured at  $I_Z$  by given a very small A.C. current signal.

## PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

SOD-123



| UNIT | A            | b <sub>p</sub> | C              | D            | E            | H <sub>E</sub> | A <sub>1</sub> | L <sub>p</sub> |
|------|--------------|----------------|----------------|--------------|--------------|----------------|----------------|----------------|
| mm   | 1.20<br>0.90 | 0.60<br>0.50   | 0.135<br>0.100 | 2.75<br>2.55 | 1.65<br>1.55 | 3.85<br>3.55   | 0.10<br>0.01   | 0.50<br>0.20   |

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