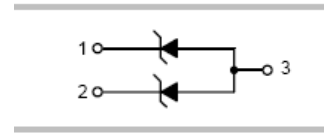


### Features

- ESD rating of class N (exceeding 16KV) per the human body model
- Low leakage

HF

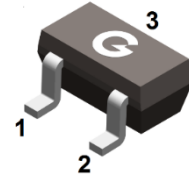


### Typical Applications

- Transient overvoltage protection capability

### Mechanical Data

- Case: SOT-523
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



SOT-523

### Ordering Information

| Part Number | Package | Shipping Quantity      | Marking Code |
|-------------|---------|------------------------|--------------|
| MMBZ5V6ALT  | SOT-523 | 3000 pcs / Tape & Reel | 5A6          |

### Maximum Ratings (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Characteristic                                                              | Symbol   | Value | Unit |
|-----------------------------------------------------------------------------|----------|-------|------|
| Forward Voltage ( $I_F = 10\text{mA}$ )                                     | $V_F$    | 0.9   | V    |
| Peak Power Dissipation ( $t_p = 1\text{ms}$ , $T_L \leq 25^\circ\text{C}$ ) | $P_{PK}$ | 20    | W    |

### Thermal Characteristics

| Parameter                            | Symbol          | Value      | Unit               |
|--------------------------------------|-----------------|------------|--------------------|
| Power Dissipation                    | $P_D$           | 150        | mW                 |
| Thermal Resistance Junction-to-Air   | $R_{\theta JA}$ | 833        | $^\circ\text{C/W}$ |
| Operating Junction Temperature Range | $T_J$           | -55 ~ +150 | $^\circ\text{C}$   |
| Storage Temperature Range            | $T_{STG}$       | -55 ~ +150 | $^\circ\text{C}$   |

### Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                 | Symbol     | Test Condition           | Min. | Typ. | Max. | Unit                       |
|---------------------------|------------|--------------------------|------|------|------|----------------------------|
| Reverse Stand-off Voltage | $V_{RWM}$  |                          | -    | -    | 3    | V                          |
| Reverse Breakdown Voltage | $V_{(BR)}$ | $I_T = 20\text{mA}$      | 5.32 | 5.60 | 5.88 | V                          |
| Reverse Leakage Current   | $I_R$      | $V_{RWM} = 3\text{V}$    | -    | -    | 5    | $\mu\text{A}$              |
| Clamping Voltage          | $V_{CC}$   | $I_{PP} = 2.5\text{A}$   | -    | -    | 8    | V                          |
| Maximum Zener Impedance   | $Z_{ZT}$   | $I_{ZT} = 20\text{mA}$   | -    | -    | 11   | $\Omega$                   |
| Maximum Zener Impedance   | $Z_{ZK}$   | $I_{ZK} = 0.25\text{mA}$ | -    | -    | 1600 | $\Omega$                   |
| Temperature Coefficient   | $T_C$      | $I_{ZT} = 20\text{mA}$   | -    | 1.67 | -    | $\text{mV}/^\circ\text{C}$ |

### TYPICAL CHARACTERISTICS (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

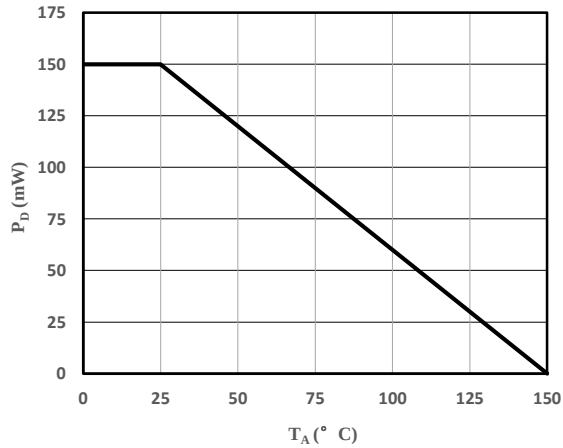


Fig 1 Steady State Power Derating

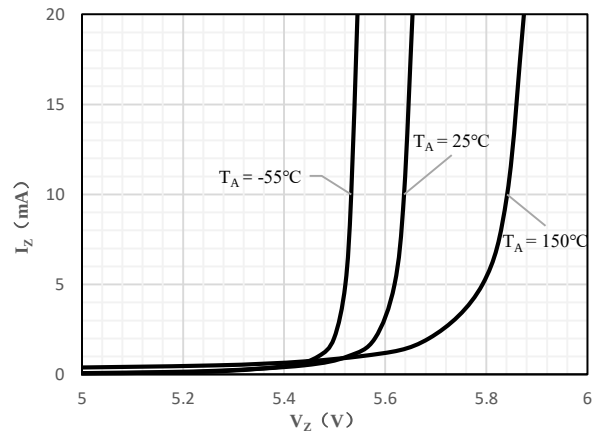


Fig 2 Typical Zener Breakdown Characteristics

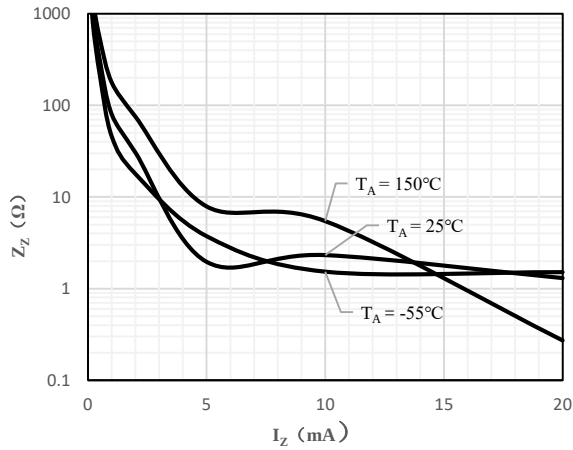


Fig 3 Zener Impedance vs. Zener Current

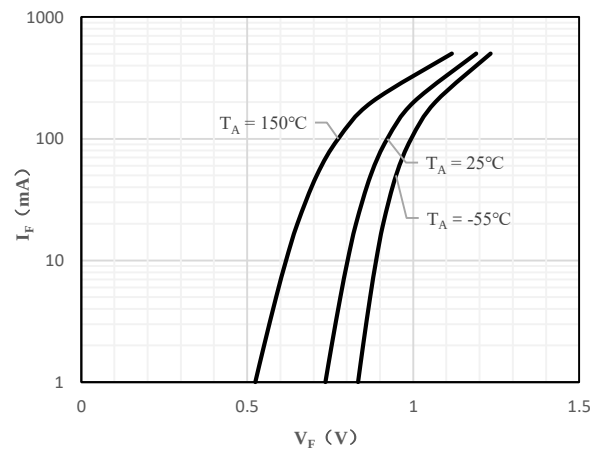


Fig 4 Typical Forward Characteristics

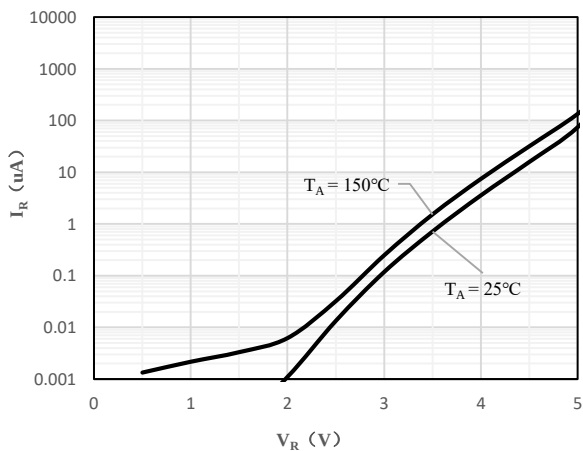
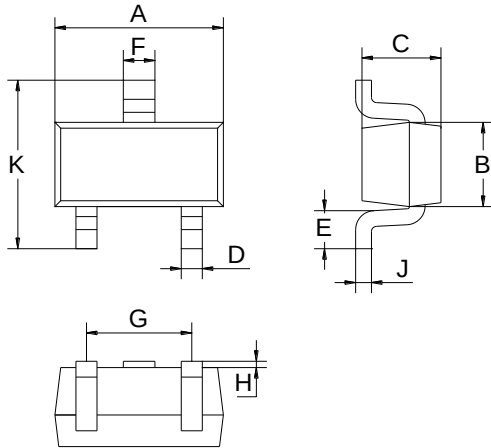


Fig 5 Typical Reverse Characteristics

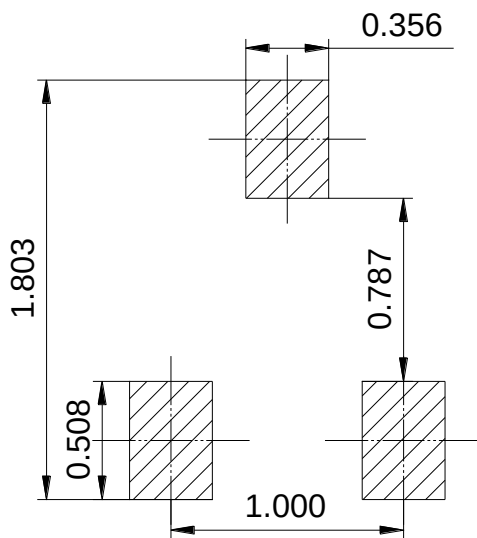
### Package Outline Dimensions (Unit: mm)



| SOT-523   |      |      |
|-----------|------|------|
| Dimension | Min. | Max. |
| A         | 1.50 | 1.70 |
| B         | 0.75 | 0.85 |
| C         | 0.60 | 0.80 |
| D         | 0.15 | 0.30 |
| E         | 0.30 | 0.40 |
| F         | 0.25 | 0.40 |
| G         | 0.90 | 1.10 |
| H         | 0.02 | 0.10 |
| J         | 0.08 | 0.18 |
| K         | 1.45 | 1.75 |

### Mounting Pad Layout (Unit: mm)

#### SOT-523



### IMPORTANT NOTICE

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