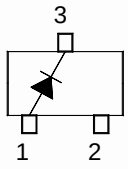
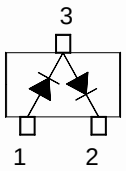
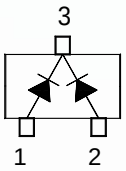
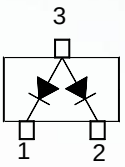
# MMBD3004 **Silicon Epitaxial Planar Diode**

High Voltage Switching Diode

SOT-23

**Features**

- Fast switching speed
- High Conductance
- High Reverse Breakdown Voltage

| MMBD3004 | MMBD3004SE | MMBD3004CC | MMBD3004CA |
|---|---|---|---|
|  |  |  |  |
| **Marking:** HC | **Marking:** PY | **Marking:** PZ | **Marking:** RA |

**Absolute Maximum Ratings ($T_a$ = 25 °C)**

| Parameter | | Symbol | Value | Unit |
|---|---|---|---|---|
| Repetitive Peak Reverse Voltage | | $V_{RRM}$ | 350 | V |
| Working Peak Reverse Voltage | | $V_{RWM}$ | 300 | V |
| Reverse Voltage | | $V_R$ | 300 | V |
| Continuous Forward Current | | $I_F$ | 225 | mA |
| Peak Repetitive Forward Current | | $I_{FRM}$ | 625 | mA |
| Non-Repetitive Peak Forward Surge Current | at t = 1 μs<br>at t = 1 s | $I_{FSM}$ | 4<br>1 | A |
| Power Dissipation | | $P_d$ | 350 | mW |
| Operating and Storage Temperature Range | | $T_j$, $T_{stg}$ | - 65 to + 150 | °C |

**Characteristics at $T_a$ = 25 °C**

| Parameter | Symbol | Min. | Max. | Unit |
|---|---|---|---|---|
| Forward Voltage<br>at $I_F$ = 20 mA<br>at $I_F$ = 100 mA<br>at $I_F$ = 200 mA | $V_F$ | -<br>-<br>- | 0.87<br>1.25 | V |
| Reverse Current<br>at $V_R$ = 240 V<br>at $V_R$ = 240 V, $T_j$ = 150 °C | $I_R$ | -<br>- | 100<br>100 | nA<br>μA |
| Reverse Breakdown Voltage<br>at $I_R$ = 100 μA | $V_{(BR)R}$ | 350 | - | V |
| Total Capacitance<br>at $V_R$ = 0, f = 1 MHz | $C_T$ | - | 5 | pF |
| Reverse Recovery Time<br>at $I_F$ = $I_R$ = 30 mA, $i_{rr}$ = 0.1 $I_R$, $R_L$ = 100 Ω | $t_{rr}$ | - | 50 | ns |

## TYPICAL CHARACTERISTICS

**Fig.1 Typical Forward Characteristics**

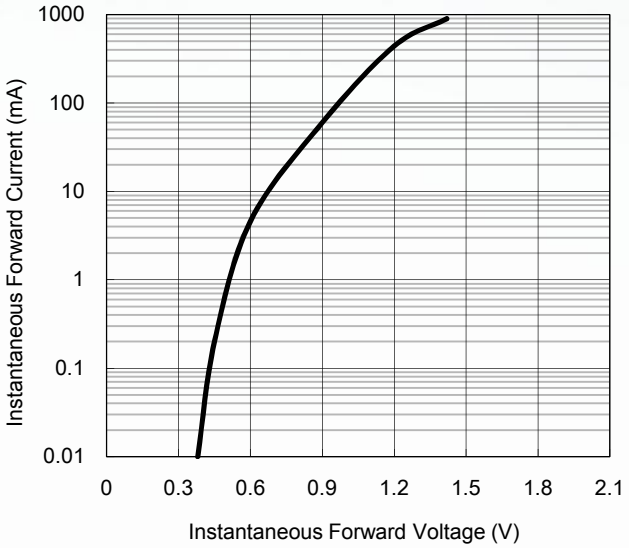



**Fig. 2 Typical Reverse Characteristics**

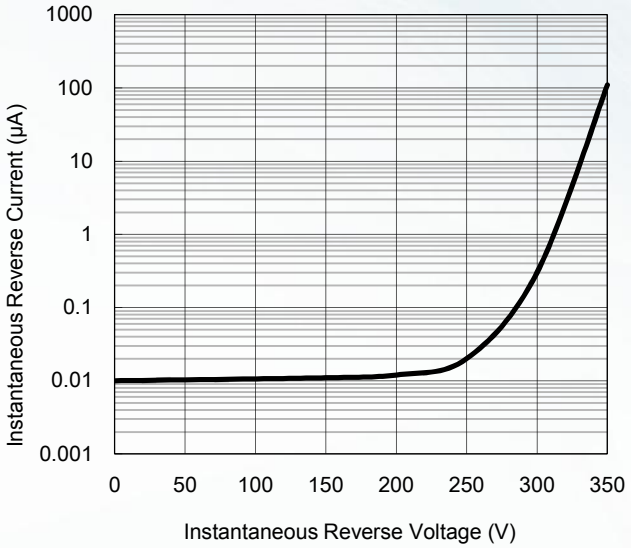



**Fig.3 Admissible Power Dissipation Curve**

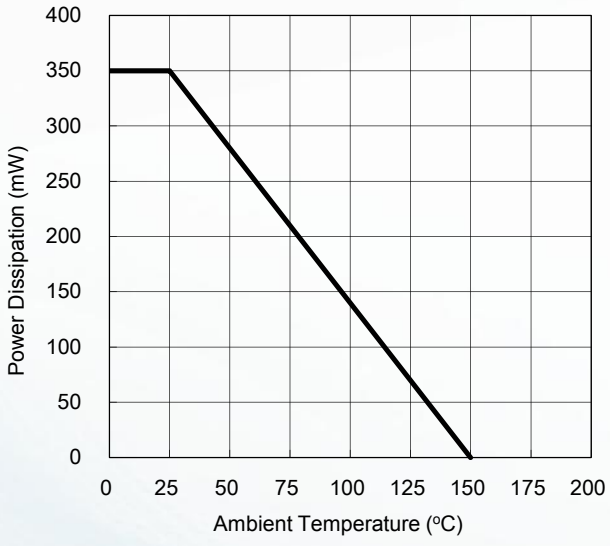
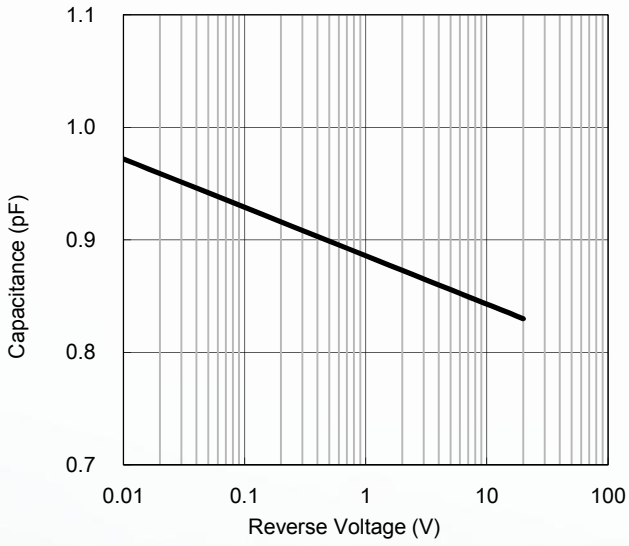


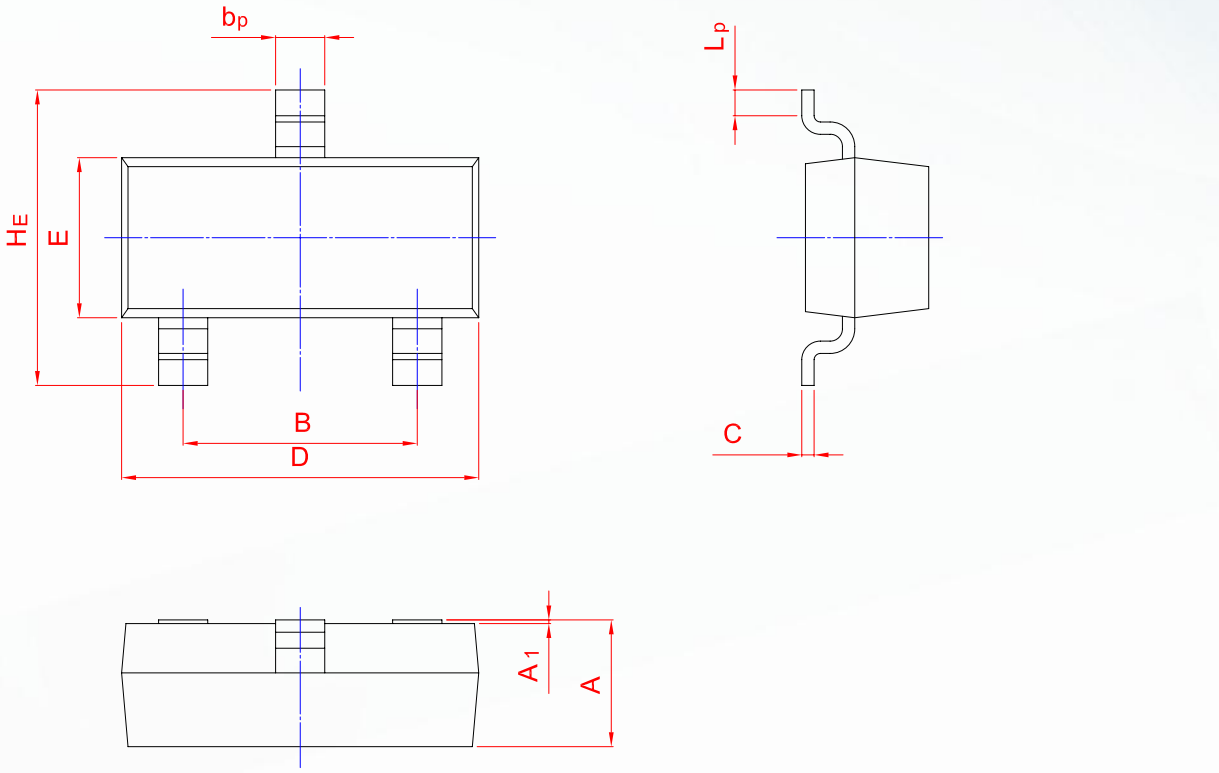

**Fig.4 Typical Capacitance VS. Reverse Voltage**



## PACKAGE OUTLINE

**Plastic surface mounted package; 3 leads**

**SOT-23**




| UNIT | A | B | bp | C | D | E | HE | A1 | Lp |
|---|---|---|---|---|---|---|---|---|---|
| mm | 1.40<br>0.95 | 2.04<br>1.78 | 0.50<br>0.35 | 0.19<br>0.08 | 3.10<br>2.70 | 1.65<br>1.20 | 3.00<br>2.20 | 0.100<br>0.013 | 0.50<br>0.20 |