

# MMBD6050

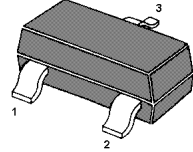
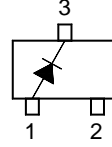
## SILICON EPITAXIAL PLANAR SWITCHING DIODE

### Features

- Small package
- Low forward voltage
- Fast reverse recovery time
- Small total capacitance

### Applications

- Ultra high speed switching application



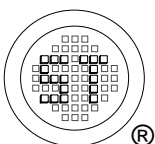
Marking Code: **5D**  
SOT-23 Plastic Package

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

| Parameter                  | Symbol    | Value         | Unit             |
|----------------------------|-----------|---------------|------------------|
| Reverse Voltage            | $V_R$     | 70            | V                |
| Forward Current            | $I_F$     | 200           | mA               |
| Peak Forward Surge Current | $I_{FSM}$ | 500           | mA               |
| Power Dissipation          | $P_d$     | 300           | mW               |
| Junction Temperature       | $T_j$     | 150           | $^\circ\text{C}$ |
| Storage Temperature Range  | $T_s$     | - 55 to + 150 | $^\circ\text{C}$ |

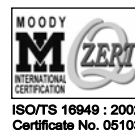
### Characteristics at $T_a = 25\text{ }^\circ\text{C}$

| Parameter   | Symbol      | Min.         | Max.       | Unit |
|---|-------------|--------------|------------|------|
| Forward Voltage<br>at $I_F = 1\text{ mA}$<br>at $I_F = 100\text{ mA}$               | $V_F$       | 0.55<br>0.85 | 0.7<br>1.1 | V    |
| Reverse Current<br>at $V_R = 50\text{ V}$   | $I_R$       | -            | 100        | nA   |
| Reverse Breakdown Voltage<br>at $I_R = 100\text{ }\mu\text{A}$                      | $V_{(BR)R}$ | 70           | -          | V    |
| Diode Capacitance<br>at $V_R = 0$ , $f = 1\text{ MHz}$                              | $C_T$       | -            | 2.5        | pF   |
| Reverse Recovery Time<br>at $I_F = I_R = 10\text{ mA}$ , $I_{R(REC)} = 1\text{ mA}$ | $t_{rr}$    | -            | 4          | ns   |



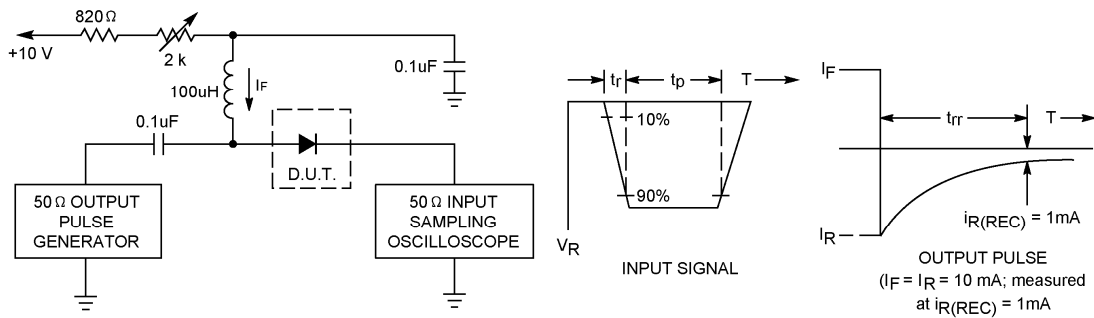
## SEMTECH ELECTRONICS LTD.

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



Dated : 10/10/2008

FIGURE 1. RECOVERY TIME EQUIVALENT TEST CIRCUIT



- Notes: 1. A 2.0kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10mA.
- 2. Input pulse is adjusted so  $I_{R(peak)}$  is equal to 10mA.
- 3.  $t_p \gg t_{rr}$

FIGURE 2. FORWARD VOLTAGE

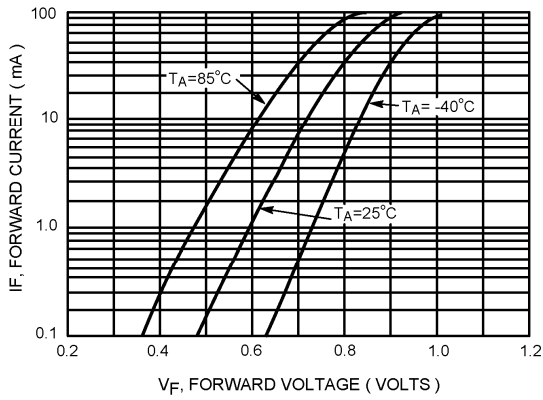


FIGURE 3. LEAKAGE CURRENT

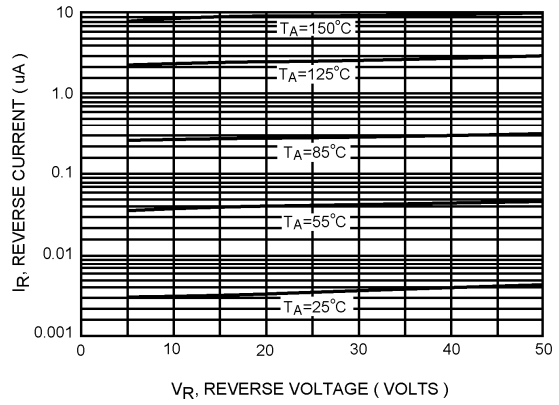
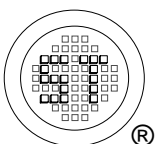
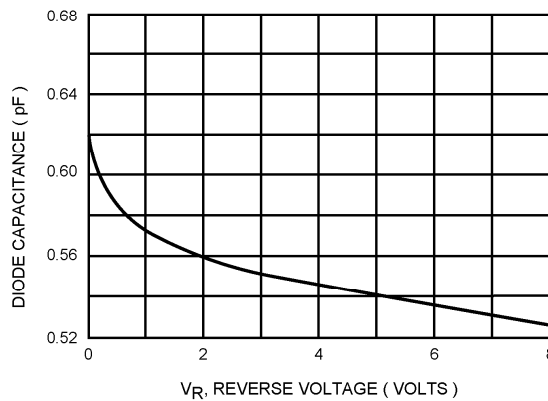


FIGURE 4. CAPACITANCE



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