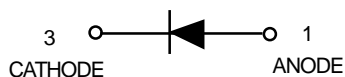


Switching Diode



MMBD6050LT1



CASE 318-08, STYLE8
SOT- 23 (TO-236AB)

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	70	Vdc
Forward Current	I_F	200	mAdc
Peak Forward Surge Current	$I_{FM(surge)}$	500	mAdc

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board ⁽¹⁾ $T_A = 25^\circ\text{C}$	P_D	225	mW
Derate above 25°C		1.8	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate, ⁽²⁾ $T_A = 25^\circ\text{C}$	P_D	300	mW
Derate above 25°C		2.4	mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

DEVICE MARKING

MMBD6050LT1 = 5A

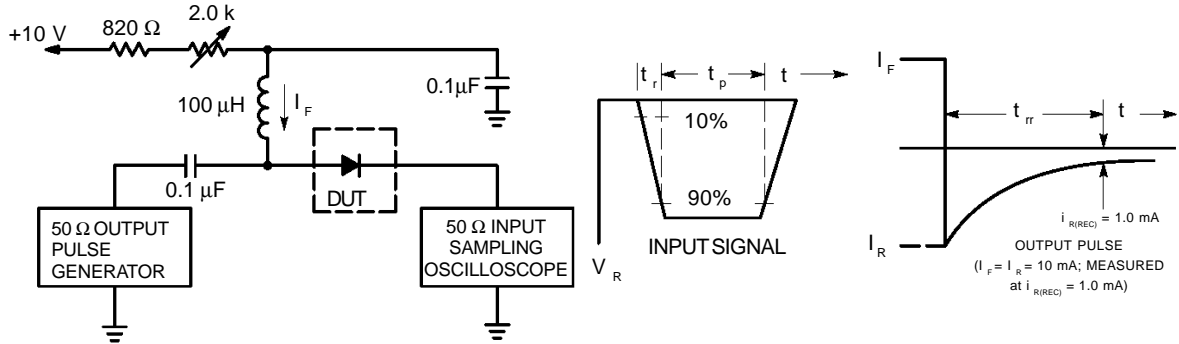
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Breakdown Voltage ($I_{(BR)} = 100 \mu\text{Adc}$)	$V_{(BR)}$	70	—	Vdc
Reverse Voltage Leakage Current ($V_R = 50 \text{Vdc}$)	I_R	—	0.1	μAdc
Forward Voltage ($I_F = 1.0 \text{mAdc}$) ($I_F = 100 \text{mAdc}$)	V_F	0.55 0.85	0.7 1.1	Vdc
Reverse Recovery Time ($I_F = I_R = 10 \text{mAdc}, I_{R(REC)} = 1.0 \text{mAdc}$) (Figure 1)	t_{rr}	—	4.0	ns
Capacitance ($V_R = 0\text{V}$)	C	—	2.5	pF

1. FR-5 = 1.0 x 0.75 x 0.062 in.

2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

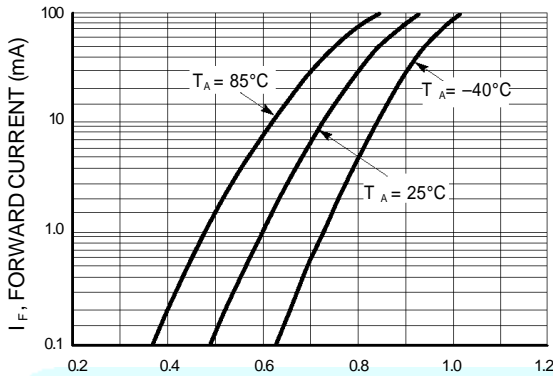
MMBD6050LT1



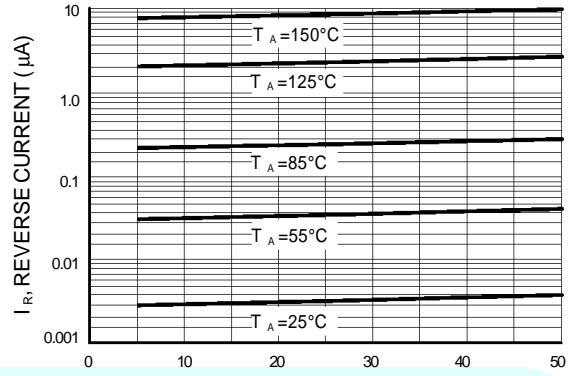
- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10mA.
 2. Input pulse is adjusted so $I_{R(\text{peak})}$ is equal to 10mA.
 3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

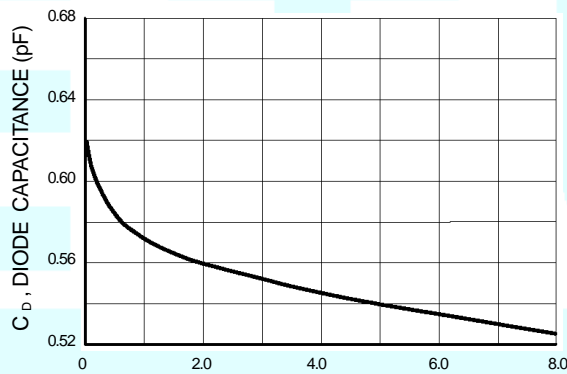
TYPICAL CHARACTERISTICS



V_F , FORWARD VOLTAGE (VOLTS)
 Figure 2. Forward Voltage



V_R , REVERSE VOLTAGE (VOLTS)
 Figure 3. Leakage Current



V_R , REVERSE VOLTAGE (VOLTS)
 Figure 4. Capacitance