ETL SEMICONDUCTOR

Dual Switching Diode

1 — ANODE

2 — CATHODE

3 — CATHODE/ANODE

MMBD7000LT1

CASE 318−08, STYLE11
SOT− 23 (TO−236AB)

MAXIMUM RATINGS(EACH DIODE)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	100	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] $T_A = 25°C$	P_D	225	mW
Derate above 25°C		1.8	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, [2] $T_A = 25°C$	P_D	300	mW
Derate above 25°C		2.4	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	T_J , T_{stg}	−55 to +150	°C

DEVICE MARKING

MMBD7000LT1 = M5C

ELECTRICAL CHARACTERISTICS ($T_A = 25°C$ unless otherwise noted)(EACH DIODE)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Breakdown Voltage ($I_{(BR)}$ = 100 µAdc)	$V_{(BR)}$	100	—	Vdc
Reverse Voltage Leakage Current				µAdc
(V_R = 50 Vdc)	I_R	—	1.0	
(V_R = 100 Vdc)	I_{R2}	—	3.0	
(V_R = 50 Vdc,125°C)	I_{R3}	—	100	
Forward Voltage	V_F			Vdc
(I_F = 1.0 mAdc)		0.55	0.7	
(I_F = 10 mAdc)		0.67	0.82	
(I_F = 100 mAdc)		0.75	1.1	
Reverse Recovery Time ($I_F = I_R$ = 10 mAdc) (Figure 1)	t_{rr}	—	4.0	ns
Capacitance(V_R=0V)	C	—	1.5	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.
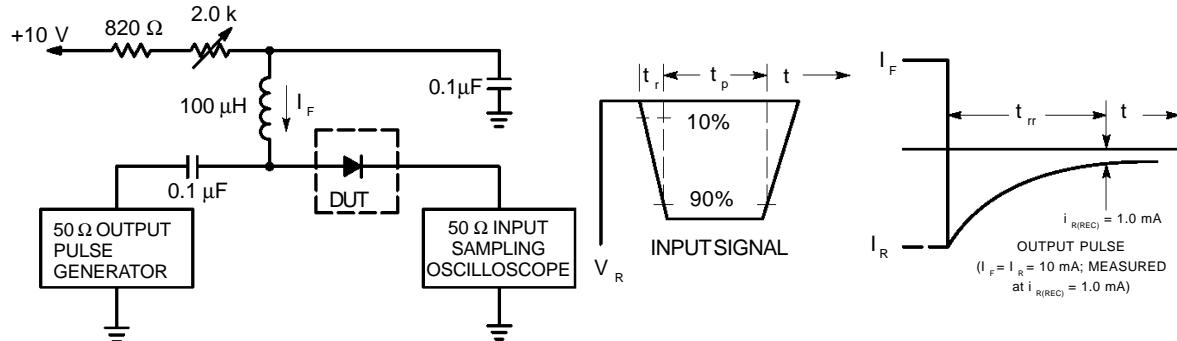
Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10mA.

2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10mA.

3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

## CURVES APPLICABLE TO EACH CATHODE
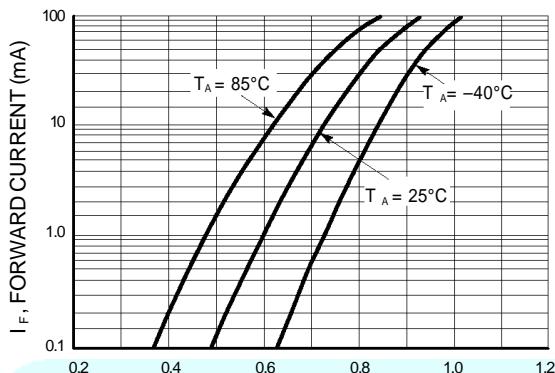
V_F, FORWARD VOLTAGE (VOLTS)
Figure 2. Forward Voltage
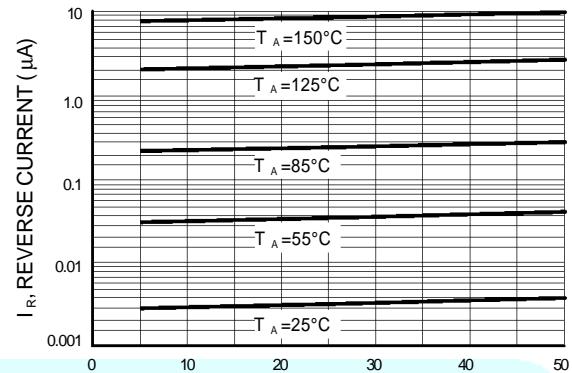
V_R, REVERSE VOLTAGE (VOLTS)
Figure 3. Leakage Current
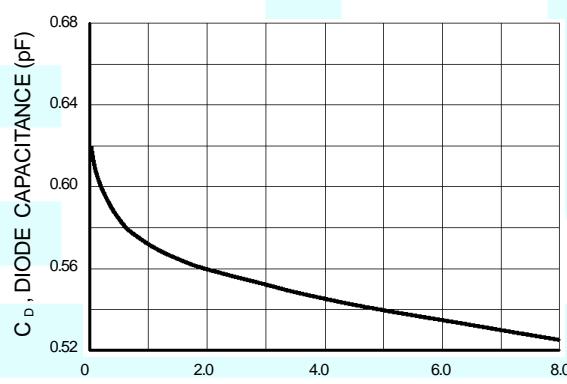
V_R, REVERSE VOLTAGE (VOLTS)
Figure 4. Capacitance