



DESCRIPTION

The MBD7000L is available in SOT-23 package.

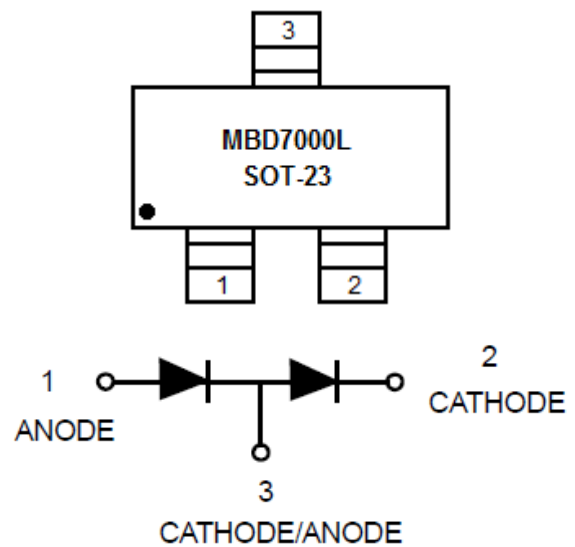
FEATURES

- Available in SOT-23 package

ORDERING INFORMATION

Package Type	Part Number
SOT-23	MBD7000L
Note	3,000pcs/Reel
AiT provides all RoHS Compliant Products	

PIN DESCRIPTION





ABSOLUTE MAXIMUM RATINGS

EACH DIODE

V _R , Reverse Voltage	100Vdc
I _F , Forward Current	200mAdc
I _{FM(surge)} , Peak Forward Surge Current	500mAdc

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, ^{NOTE1} T _A = 25°C Derate above 25°C	P _D	225 1.8	mW mW/°C
Thermal Resistance, Junction to Ambient	R _{θJA}	556	°C/W
Total Device Dissipation Alumina Substrate ^{NOTE2} T _A = 25°C Derate above 25°C	P _D	300 2.4	mW mW/°C
Thermal Resistance, Junction to Ambient	R _{θJA}	417	°C/W
Junction and Storage Temperature	T _J , T _{stg}	-55 to +150	°C

NOTE1: FR-5 = 1.0 x 0.75 x 0.062 in.

NOTE2: Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.



ELECTRICAL CHARACTERISTICS

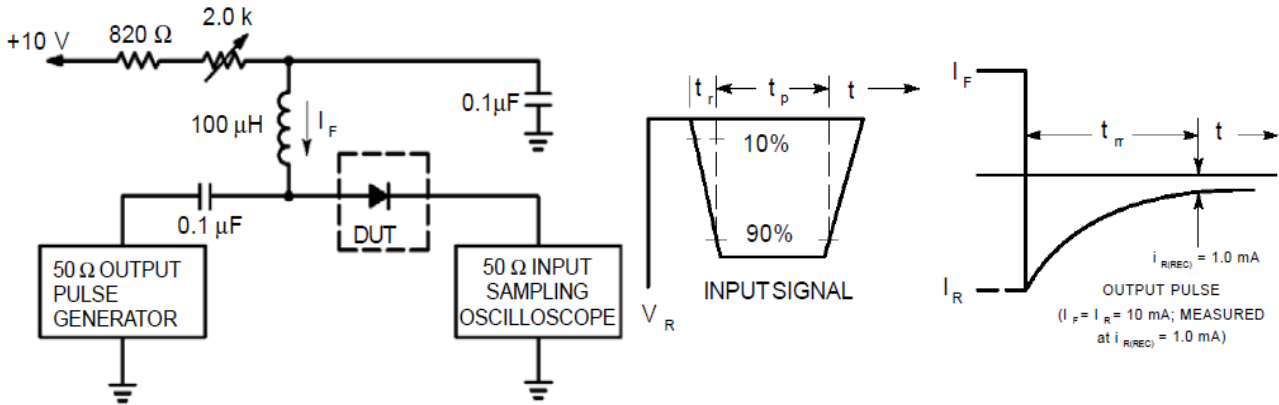
T_A = 25°C unless otherwise noted. (EACH DIODE)

Parameter	Symbol	Characteristic	Min	Max	Unit
OFF CHARACTERISTICS					
Reverse Breakdown Voltage	V _(BR)	I _(BR) = 100μA _{dc}	100	-	V _{dc}
Reverse Voltage Leakage Current	I _R	V _R = 50V _{dc}	-	1.0	μA _{dc}
	I _{R2}	V _R = 100V _{dc}		3.0	
	I _{R3}	V _R = 50V _{dc} , 125°C		100	
Forward Voltage	V _F	I _F = 1.0mA _{dc}	0.55	0.7	V _{dc}
		I _F = 10mA _{dc}	0.67	0.82	
		I _F = 100mA _{dc}	0.75	1.1	
Reverse Recovery Time	trr	I _F = I _R = 10mA _{dc} (Figure.1)	-	4.0	V _{dc}
Capacitance	C	V _R = 0V	-	1.5	V _{dc}



TYPICAL PERFORMANCE CHARACTERISTICS

Figure. 1 Recovery Time Equivalent Test Circuit



NOTE1: A 2.0kΩ variable resistor adjusted for a Forward Current (I_F) of 10mA.

NOTE2: Input pulse is adjusted so $I_{R(peak)}$ is equal to 10mA.

NOTE3: $t_p \gg t_{rr}$

Figure. 2 Forward Voltage

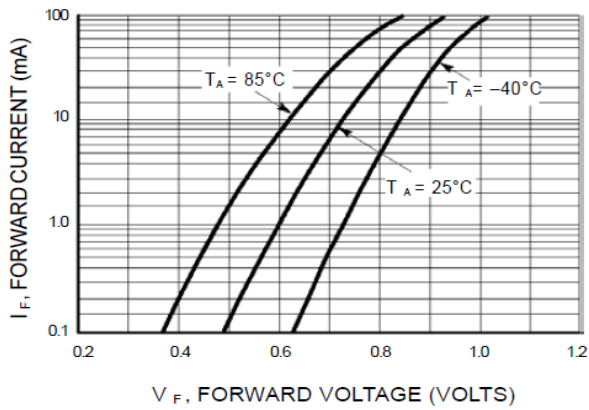


Figure. 3 Leakage Current

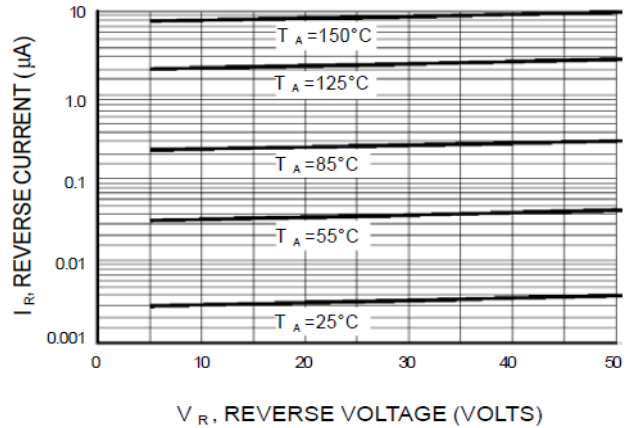
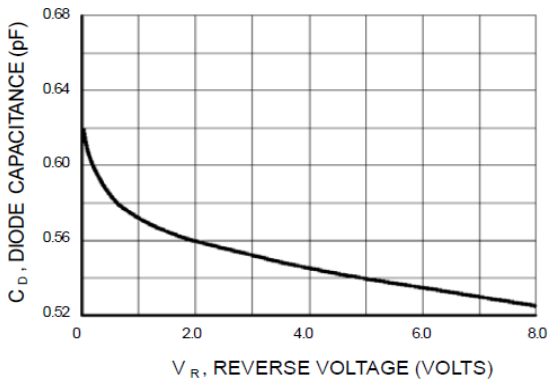


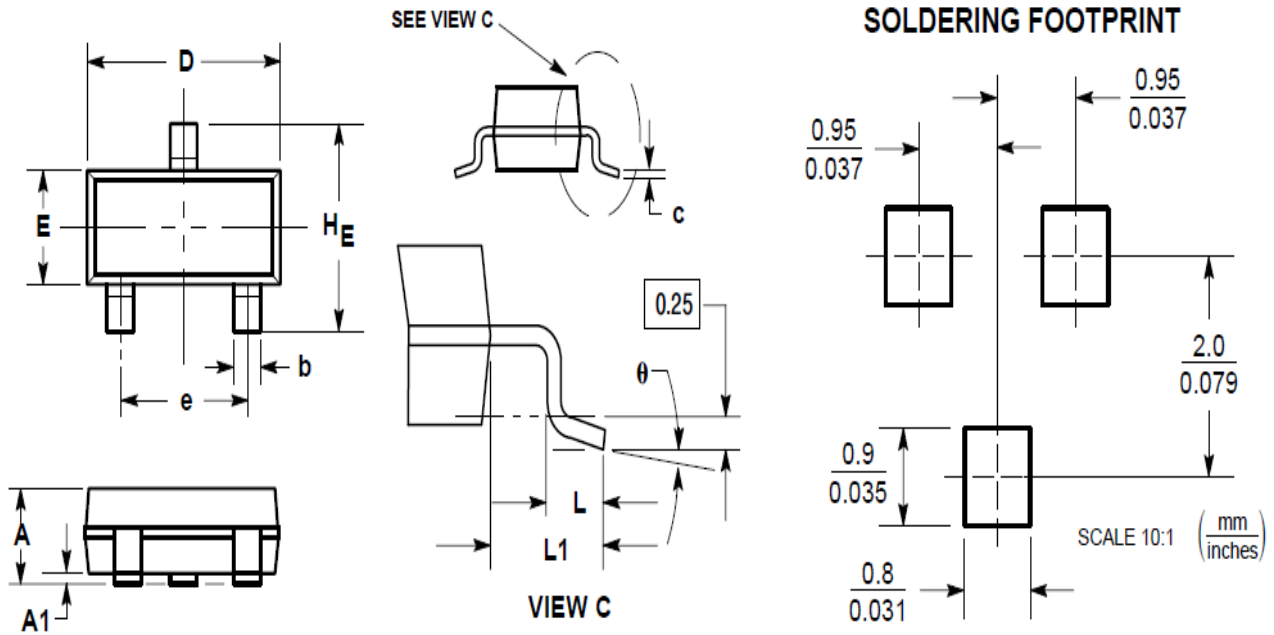
Figure. 4 Capacitance





PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.035	0.044	0.89	1.11
A1	0.001	0.004	0.01	0.10
b	0.015	0.020	0.37	0.50
c	0.003	0.007	0.09	0.18
D	0.110	0.120	2.80	3.04
E	0.047	0.055	1.20	1.40
e	0.070	0.081	1.78	2.04
L	0.004	0.012	0.10	0.30
L1	0.014	0.029	0.35	0.69
H _E	0.083	0.104	2.10	2.64



IMPORTANT NOTICE

AiT Semiconductor Inc. (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Semiconductor Inc.'s integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or severe property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Semiconductor Inc. assumes to no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.