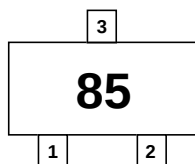
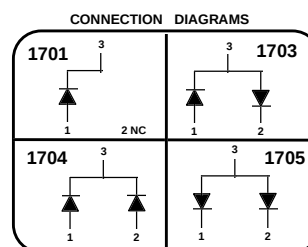


MMBD1701/A / 1703/A / 1704/A / 1705/A



MARKING

MMBD1701	85	MMBD1701A	85A
MMBD1703	87	MMBD1703A	87A
MMBD1704	88	MMBD1704A	88A
MMBD1705	89	MMBD1705A	89A



High Conductance Low Leakage Diode

Sourced from Process 1T.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
W_{IV}	Working Inverse Voltage	20	V
I_O	Average Rectified Current	50	mA
I_F	DC Forward Current	150	mA
i_f	Recurrent Peak Forward Current	150	mA
$i_{f(surge)}$	Peak Forward Surge Current Pulse width = 1.0 second	250	mA
T_{stg}	Storage Temperature Range	-55 to +150	°C
T_J	Operating Junction Temperature	150	°C

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations

Thermal Characteristics

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		MMBD1701/A /1703/A-1705/A*	
P_D	Total Device Dissipation Derate above 25°C	350 2.8	mW mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	°C/W

*Device mounted on glass epoxy PCB 1.6" X 1.6" X 0.06"; mounting pad for the collector lead min. 0.93 in2

High Conductance Low Leakage Diode

(continued)

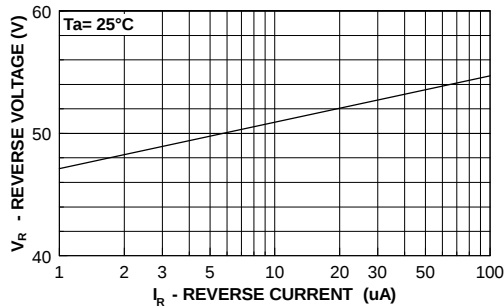
Electrical Characteristics

TA = 25°C unless otherwise noted

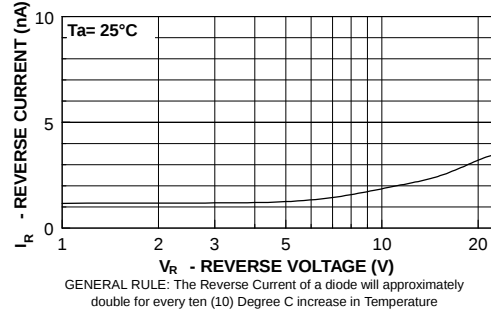
Symbol	Parameter	Test Conditions	Min	Max	Units
B_V	Breakdown Voltage	$I_R = 5.0 \mu A$	30		V
I_R	Reverse Current	$V_R = 20 V$		50	nA
V_F	Forward Voltage	$I_F = 10 \mu A$ $I_F = 100 \mu A$ $I_F = 1.0 mA$ $I_F = 10 mA$ $I_F = 20 mA$ $I_F = 50 mA$	420 520 640 760 810 0.89	500 610 740 880 950 1.1	mV mV mV mV mV V
C_O	Diode Capacitance	$V_R = 0, f = 1.0 MHz$		1.0	pF
T_{RR}	Reverse Recovery Time	MMBD1701-1705 $I_F = I_R = 10 mA, I_{RR} = 1.0 mA,$ $R_L = 100 \Omega$ MMBD1701A-1705A $I_F = I_R = 10 mA, I_{RR} = 1.0 mA,$ $R_L = 100 \Omega$		700 1.0	pS nS

Typical Characteristics

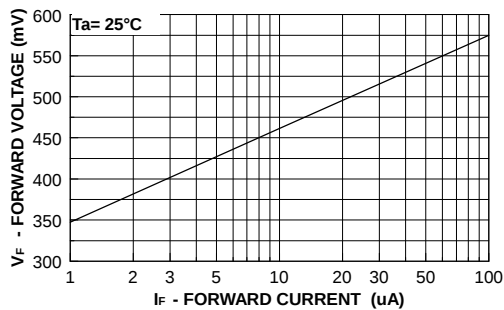
REVERSE VOLTAGE vs REVERSE CURRENT
BV - 1.0 to 100 uA



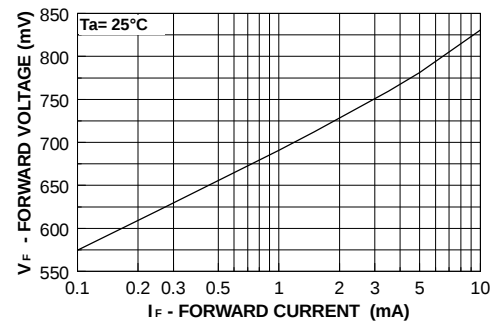
REVERSE CURRENT vs REVERSE VOLTAGE
IR - 1 to 22 V



FORWARD VOLTAGE vs FORWARD CURRENT
VF - 1.0 to 100 uA



FORWARD VOLTAGE vs FORWARD CURRENT
VF - 0.1 to 10 mA



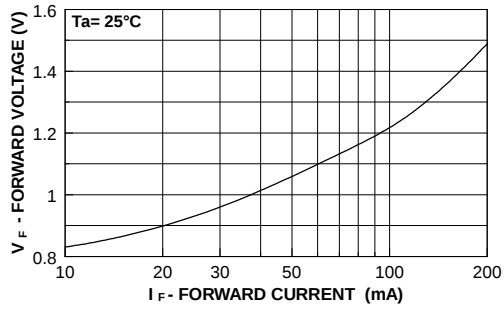
High Conductance Low Leakage Diode

(continued)

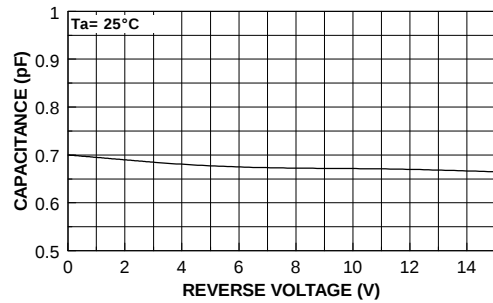
MMBD1701/A / 1703/A / 1704/A / 1705/A

Typical Characteristics (continued)

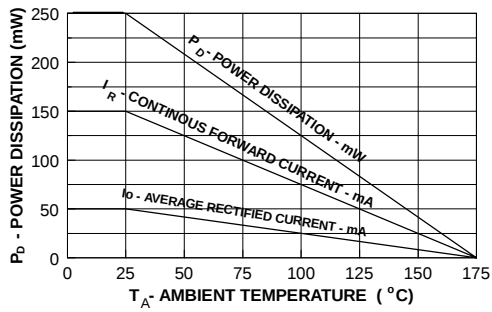
FORWARD VOLTAGE vs FORWARD CURRENT
VF - 10 - 200 mA



CAPACITANCE vs REVERSE CURRENT
VR - 0 to 15 V



Power Dissipation,
Average Rectified Current (I_O),
Forward Current (I_F) & Ambient Temperature (T_A)



Power Derating Curve

