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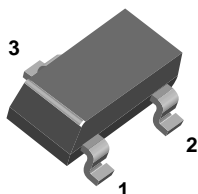
[Fairchild Semiconductor](#)
[MMBD1701](#)

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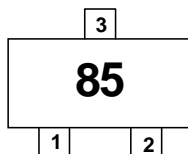
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MMBD1701/A / 1703/A / 1704/A / 1705/A



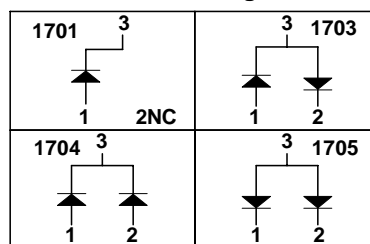
SOT-23



MARKING

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

Connection Diagrams



Small Signal Diodes

Absolute Maximum Ratings*

T_A = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V_{RRM}	Maximum Repetitive Reverse Voltage	30	V
$I_{F(AV)}$	Average Rectified Forward Current	50	mA
I_{FSM}	Non-repetitive 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

Symbol	Parameter	Value	Units
P_D	Power Dissipation	350	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	°C/W

Electrical Characteristics

T_A = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
V_R	Breakdown Voltage	$I_R = 5.0 \mu A$	30		V
V_F	Forward Voltage	$I_F = 10 \mu A$	420	500	mV
		$I_F = 100 \mu A$	520	610	mV
		$I_F = 1.0 mA$	640	740	mV
		$I_F = 10 mA$	760	880	mV
		$I_F = 20 mA$	810	950	mV
		$I_F = 50 mA$	0.89	1.1	V
I_R	Reverse Current	$V_R = 20 V$		50	nA
C_T	Total Capacitance	$V_R = 0, f = 1.0 MHz$		1.0	pF
t_{rr}	Reverse Recovery Time	MMBD1701-1705 $I_F = I_R = 10 mA, I_{RR} = 1.0 mA,$ $R_L = 100 \Omega$		0.7	ns
		MMBD1701A-1705A $I_F = I_R = 10 mA, I_{RR} = 1.0 mA,$ $R_L = 100 \Omega$		1.0	ns

Small Signal Diode
(continued)

Typical Characteristics

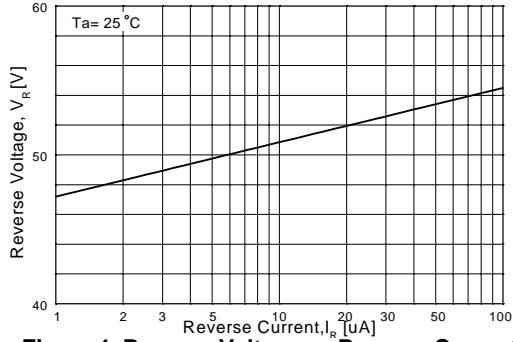


Figure 1. Reverse Voltage vs Reverse Current
BV - 1.0 to 100 uA

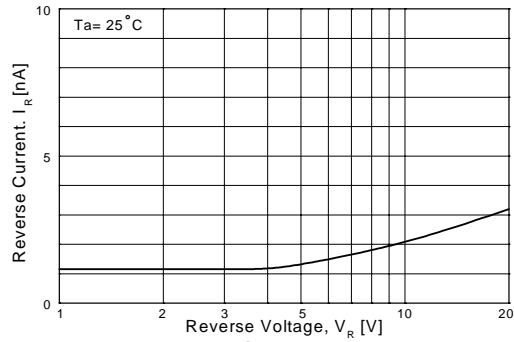


Figure 2. Reverse Current vs Reverse Voltage
IR - 1 to 22V

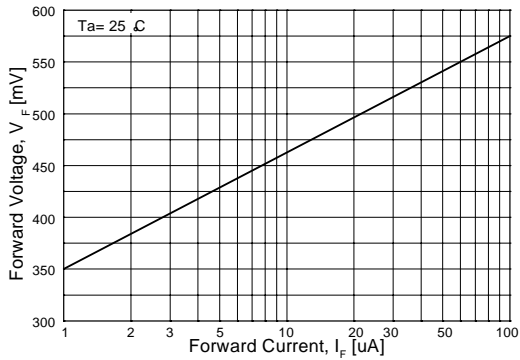


Figure 3. Forward Voltage vs Forward Current
VF - 1.0 to 100 uA

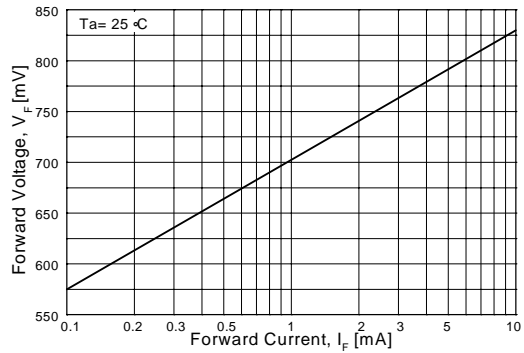


Figure 4. Forward Voltage vs Forward Current
VF - 0.1 to 10 mA

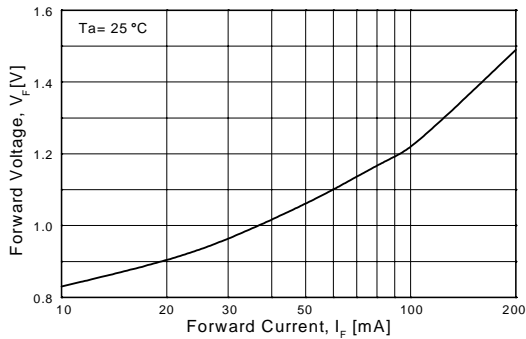


Figure 5. Forward Voltage vs Forward Current
VF - 10 - 200 mA

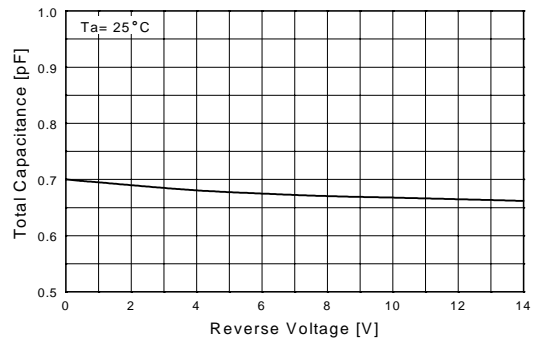


Figure 6. Total Capacitance vs Reverse Current

Small Signal Diode
 (continued)

Typical Characteristics (continued)

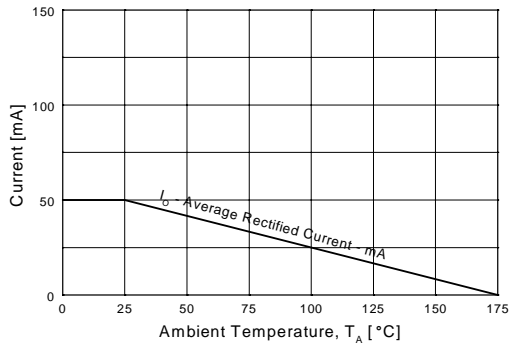


Figure 7. Average Rectified Current (I_o) versus Ambient Temperature (T_A)

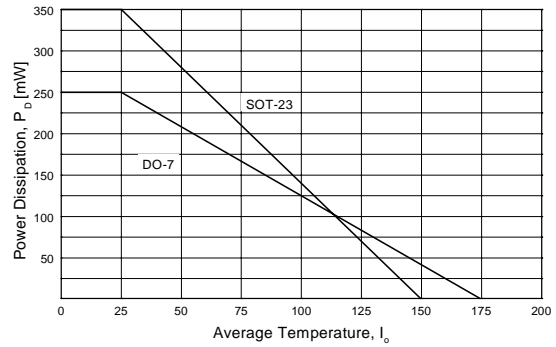


Figure 8. Power Derating Curve

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

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