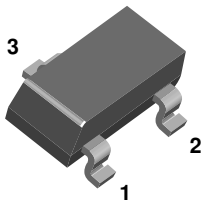
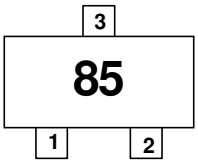
FAIRCHILD
SEMICONDUCTOR®

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



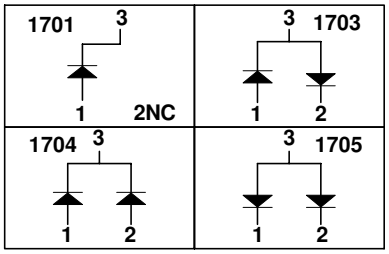
SOT-23



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 µA	30		V
V_F	Forward Voltage	I_F = 10 µA	420	500	mV
		I_F = 100 µA	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 Ω		0.7	ns
	MMBD1701A-1705A	I_F = I_R = 10 mA, I_{RR} = 1.0 mA, R_L = 100 Ω		1.0	ns

Small Signal Diode
(continued)

Typical Characteristics

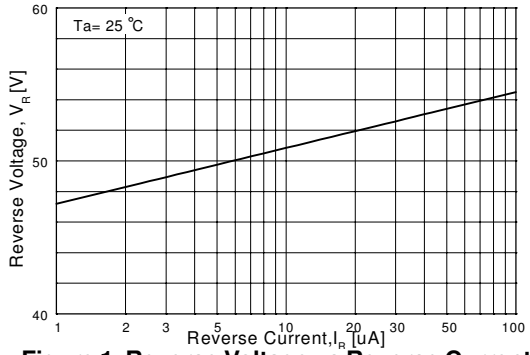


Figure 1. Reverse Voltage vs Reverse Current
BV - 1.0 to 100 uA

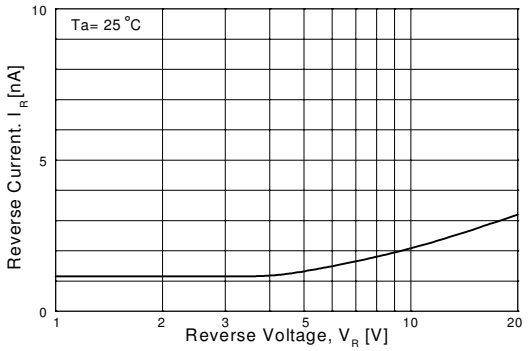


Figure 2. Reverse Current vs Reverse Voltage
IR - 1 to 22V

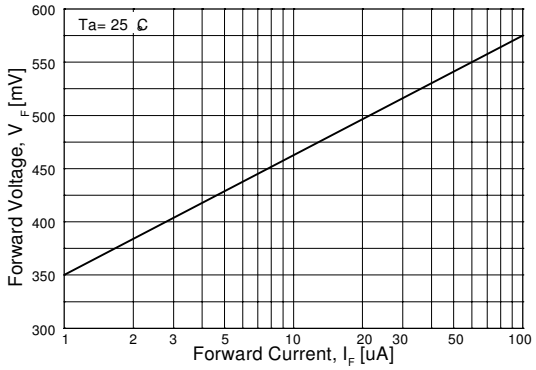


Figure 3. Forward Voltage vs Forward Current
VF - 1.0 to 100 uA

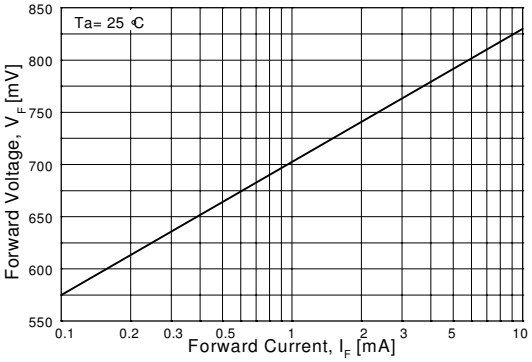


Figure 4. Forward Voltage vs Forward Current
VF - 0.1 to 10 mA

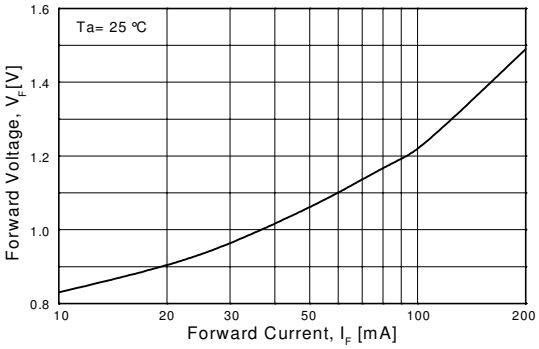


Figure 5. Forward Voltage vs Forward Current
VF - 10 - 200 mA

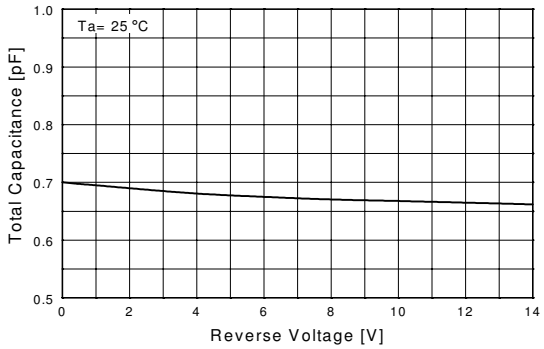


Figure 6. Total Capacitance vs Reverse Current

Typical Characteristics (continued)

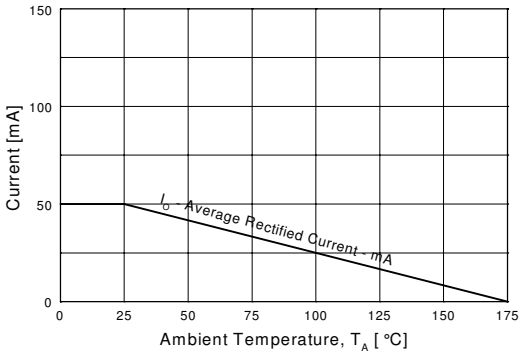


Figure 7. Average Rectified Current (I_O) versus Ambient Temperature (T_A)

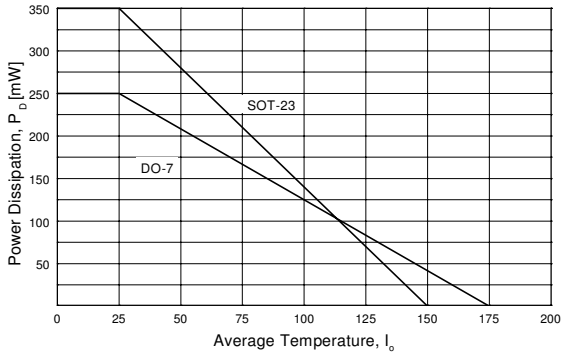


Figure 8. Power Derating Curve

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DenseTrench™	GTO™	Power247™	SuperSOT™-6	
DOME™	HiSeC™	PowerTrench®	SuperSOT™-8	
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E²CMOS™	LittleFET™	QS™	TinyLogic™	
EnSigna™	MicroFET™	QT Optoelectronics™	TruTranslation™	
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