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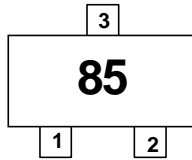
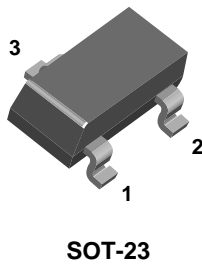
ON Semiconductor®

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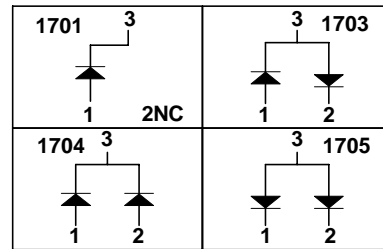
MMBD1701/A / 1703/A / 1704/A / 1705/A



MARKING

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

Connection Diagrams



Small Signal Diodes

Absolute Maximum Ratings*

$T_A = 25^\circ\text{C}$ 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	$^\circ\text{C}$
T_J	Operating Junction Temperature	150	$^\circ\text{C}$

*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	$^\circ\text{C}/\text{W}$

Electrical Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

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

Typical Characteristics

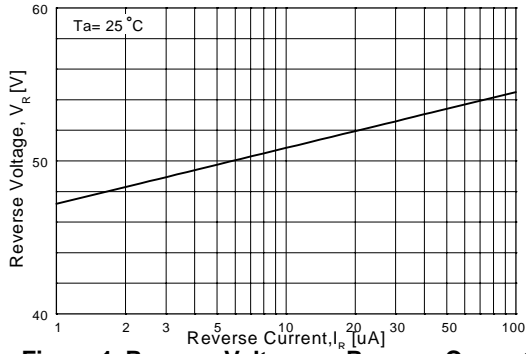


Figure 1. Reverse Voltage vs Reverse Current
BV - 1.0 to 100 uA

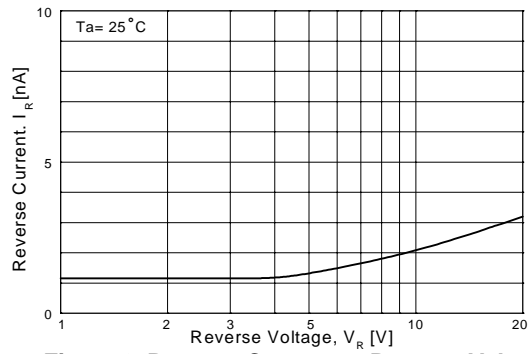


Figure 2. Reverse Current vs Reverse Voltage
IR - 1 to 22V

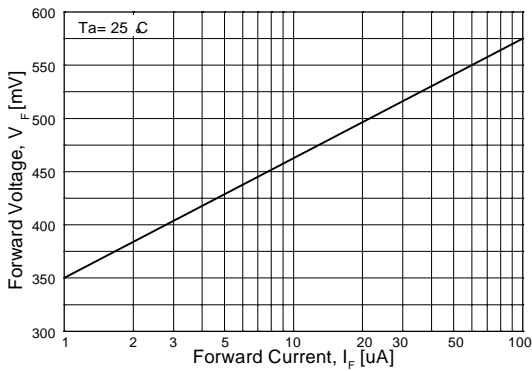


Figure 3. Forward Voltage vs Forward Current
VF - 1.0 to 100 uA

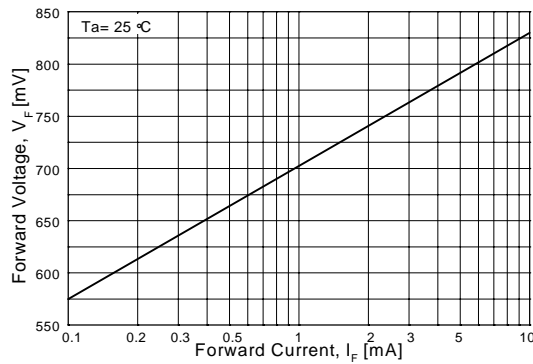


Figure 4. Forward Voltage vs Forward Current
VF - 0.1 to 10 mA

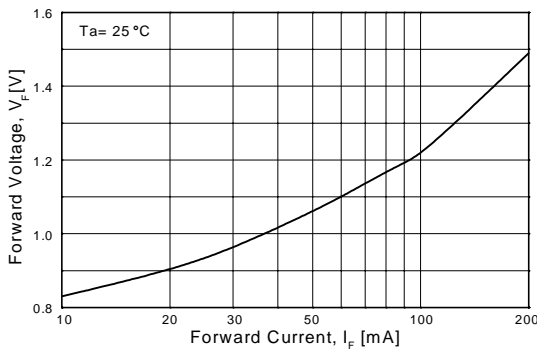


Figure 5. Forward Voltage vs Forward Current
VF - 10 - 200 mA

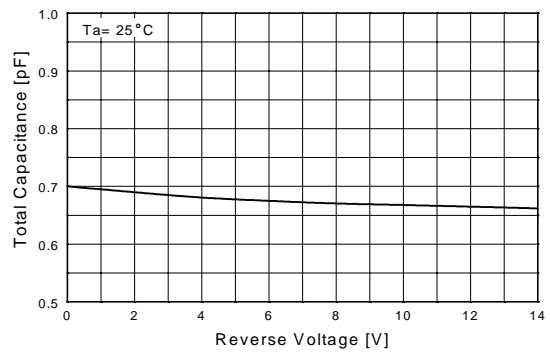


Figure 6. Total Capacitance vs Reverse Current

Typical Characteristics (continued)

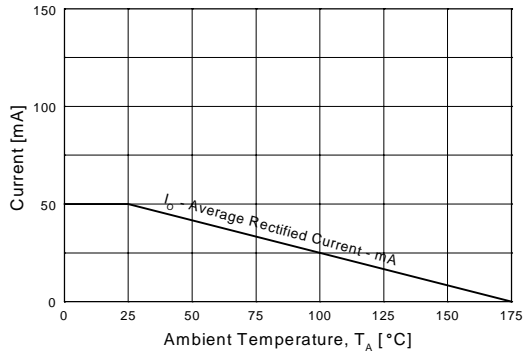


Figure 7. Average Rectified Current (I_o) versus Ambient Temperature (T_A)

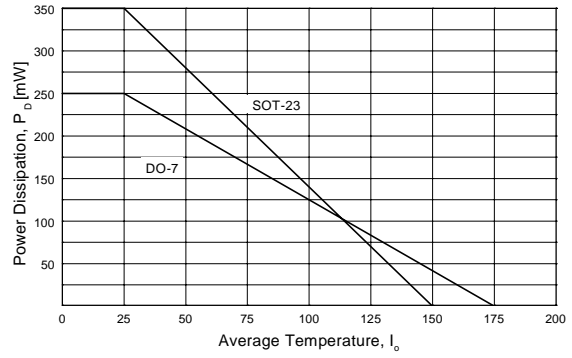


Figure 8. Power Derating Curve

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