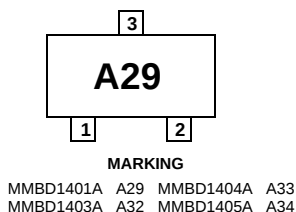
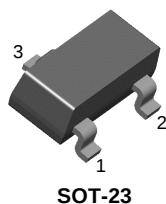
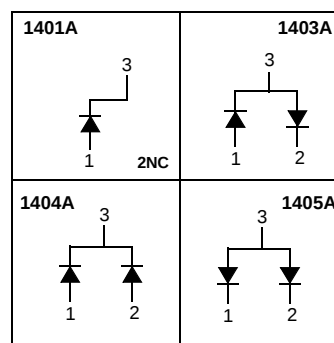


MMBD1401A / 1403A / 1404A / 1405A



Connection Diagram



High Voltage General Purpose Diode

Sourced from Process 2V.

Absolute Maximum Ratings * $T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
W_{IV}	Working Inverse Voltage	175	V
I_O	Average Rectified Current	200	mA
I_F	DC Forward Current	600	mA
i_f	Recurrent Peak Forward Current	700	mA
$i_{f(surge)}$	Non-repetitive Peak Forward Surge Current		
	Pulse Width = 1.0 second	1.0	A
	Pulse Width = 1.0 microsecond	2.0	A
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 the diode may be impaired.

NOTES:

- 1) These ratings are based on 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	Max.	Units
		MMBD1401A - 1405A*	
P_D	Power Dissipation	350	mW
	Derate above 25°C	2.8	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^\circ\text{C}/\text{W}$

* Device mounted on glass epoxy PCB $1.6'' \times 1.6'' \times 0.06''$; mounting pad for the collector lead min. 0.93 in 2

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

Symbol	Parameter	Test Conditions	Min.	Max.	Units
B_V	Breakdown Voltage	$I_R = 100\mu\text{A}$	250		V
I_R	Reverse Leakage	$V_R = 120\text{V}$ $V_R = 175\text{V}$		40 100	nA nA
V_F	Forward Voltage	$I_F = 10\text{mA}$ $I_F = 50\text{mA}$ $I_F = 200\text{mA}$ $I_F = 200\text{mA}$ $I_F = 300\text{mA}$ $I_F = 300\text{mA}$	760	800 920 1.1 1.0 1.25 1.1	mV mV V V V V
C_O	Diode Capacitance	$V_R = 0, f = 1.0\text{MHz}$		2.0	pF
T_{RR}	Reverse Recovery Time	$I_F = I_R = 30\text{mA}$ $I_{RR} = 1.0\text{mA}, R_L = 100\Omega$		50	nS

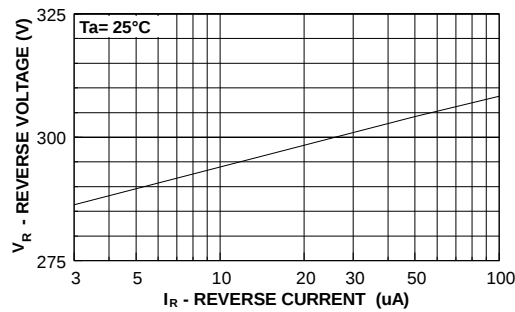
Typical Characteristics

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

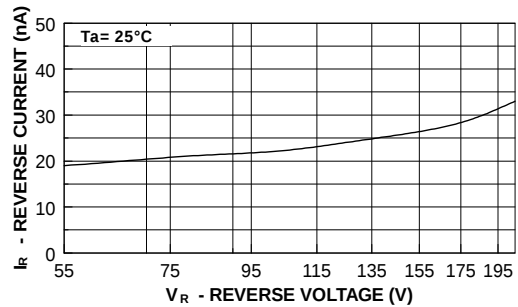


Figure 2. Reverse Current vs Reverse Voltage
IR - 55 to 205V

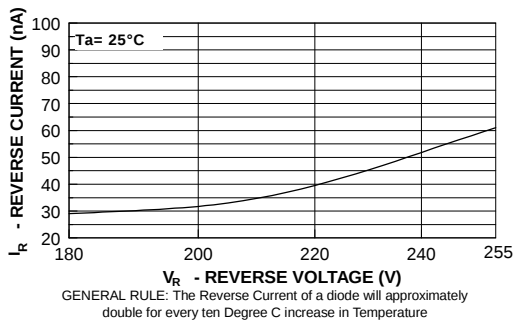


Figure 3. Reverse Current vs Reverse Voltage
IR - 180 to 255V

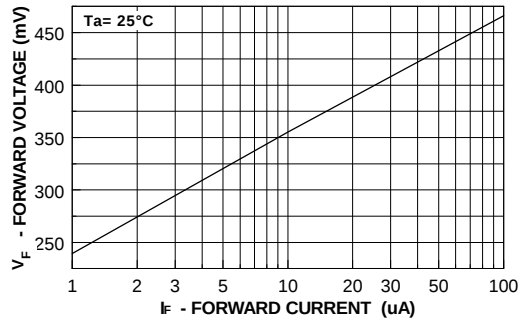


Figure 4. Forward Voltage vs Forward Current
VF - 1.0 to 100 μA

Typical Characteristics (Continued)

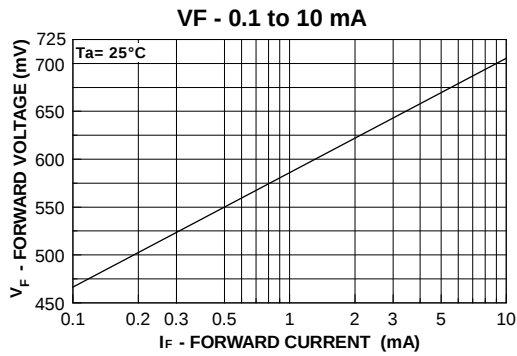


Figure 5. Forward Voltage vs Forward Current
VF - 0.1 to 10mA

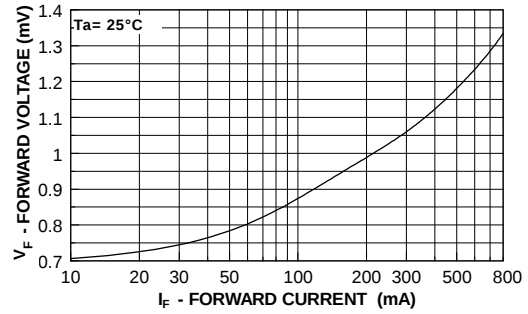


Figure 6. Forward Voltage vs Forward Current
VF - 10 to 800mA

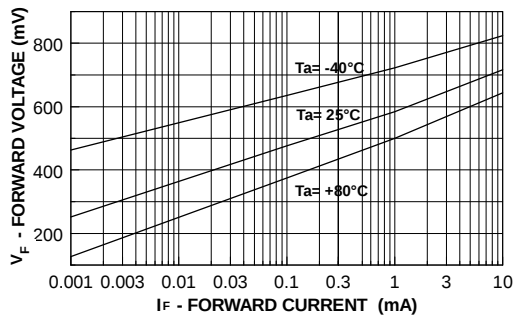


Figure 7. Forward Voltage vs Ambient Temperature
VF - 1.0µA - 10mA (-40 to +80°C)

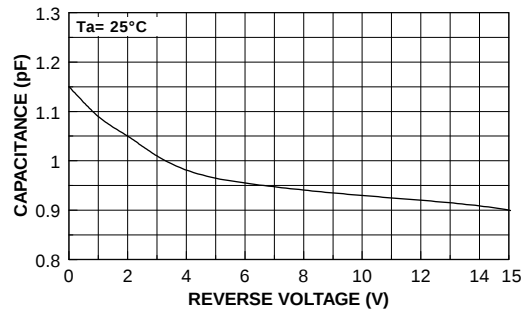


Figure 8. Capacitance vs Reverse Voltage
VR - 0 to 5V

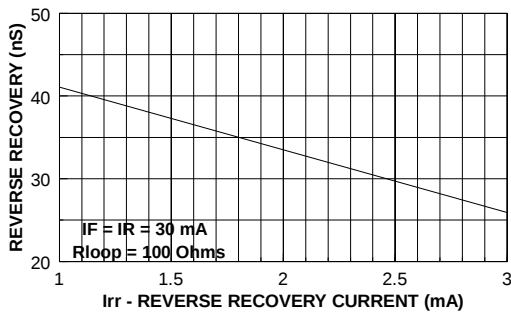


Figure 9. Reverse Recovery Time vs
Reverse Recovery Current (Irr)

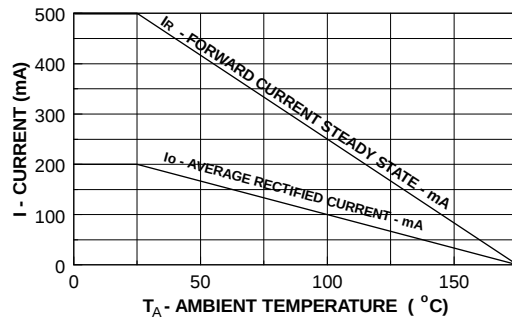


Figure 10. Average Rectified Current(I_O) &
Forward Current (I_F) vs Ambient Temperature(T_A)

Typical Characteristics (Continued)

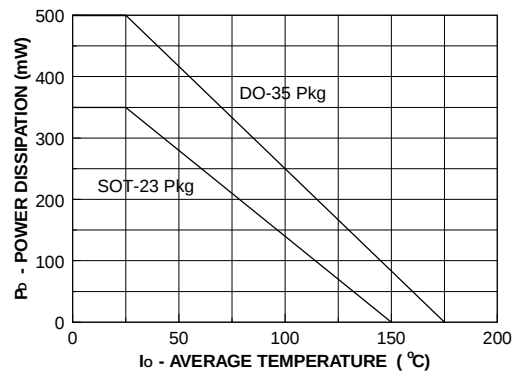


Figure 11. Power Derating Curve

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FACT™	ImpliedDisconnect™	OCXPro™	RapidConnect™	UHC™
FACT Quiet Series™		OPTOLOGIC [®]	μSerDes™	UltraFET [®]
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