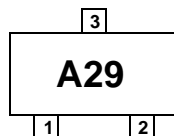
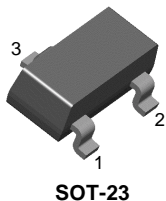
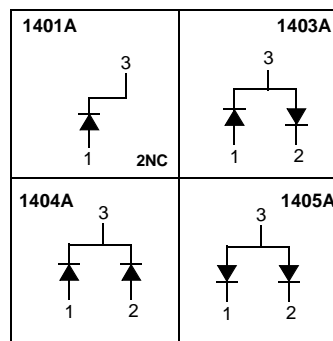


MMBD1401A / 1403A / 1404A / 1405A



MARKING
MMBD1401A A29 MMBD1404A A33
MMBD1403A A32 MMBD1405A A34

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
$i_{f(\text{surge})}$	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 $^\circ\text{C}$	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" x 1.6" x 0.06"; mounting pad for the collector lead min. 0.93 in 2

Electrical Characteristics T_A=25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min.	Max.	Units
B _V	Breakdown Voltage	I _R = 100μA	250		V
I _R	Reverse Leakage	V _R = 120V V _R = 175V		40 100	nA nA
V _F	Forward Voltage	I _F = 10mA I _F = 50mA I _F = 200mA I _F = 200mA I _F = 300mA I _F = 300mA	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 = 1.0MHz		2.0	pF
T _{RR}	Reverse Recovery Time	I _F = I _R = 30mA I _{RR} = 1.0mA, R _L = 100Ω		50	nS

Typical Characteristics

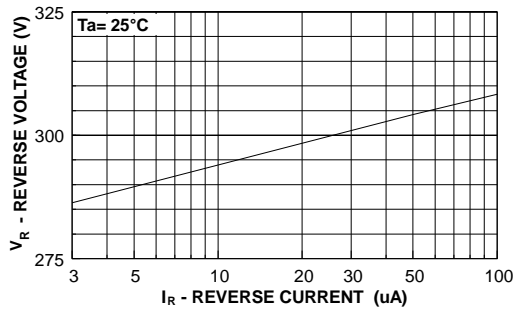


Figure 1. Reverse Voltage vs Reverse Current
BV - 1.0 to 100μA

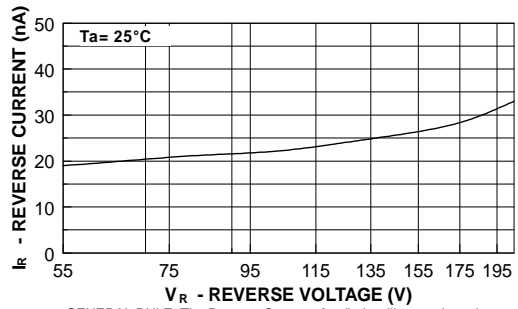


Figure 2. Reverse Current vs Reverse Voltage
IR - 55 to 205V

GENERAL RULE: The Reverse Current of a diode will approximately double for every ten (10) Degree C increase in Temperature

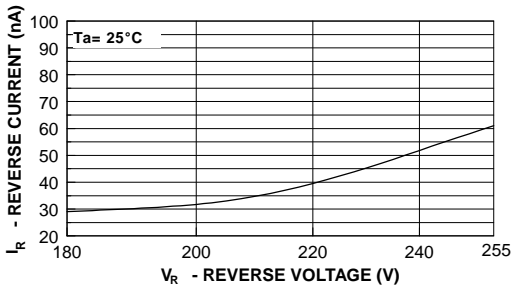


Figure 3. Reverse Current vs Reverse Voltage
IR - 180 to 255V

GENERAL RULE: The Reverse Current of a diode will approximately double for every ten Degree C increase in Temperature

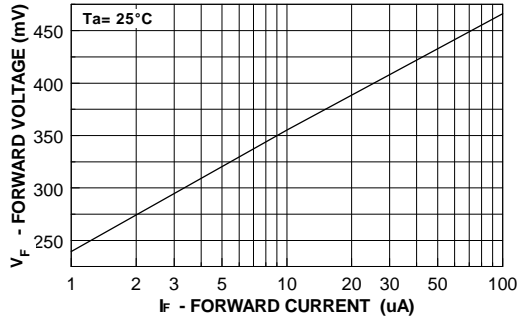
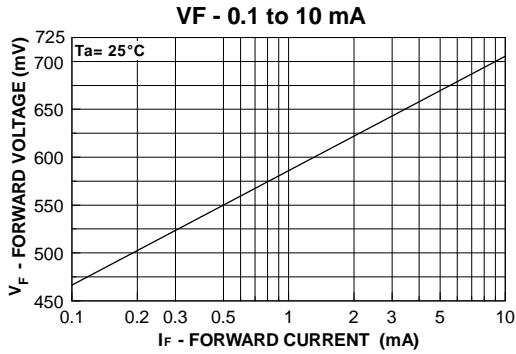
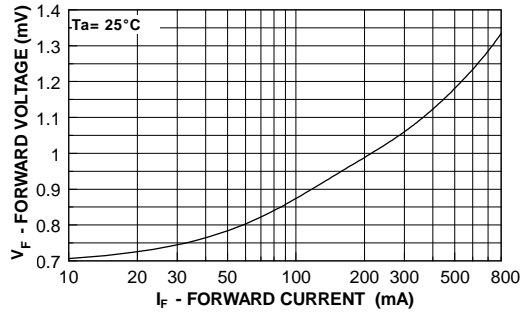


Figure 4. Forward Voltage vs Forward Current
VF - 1.0 to 100μA

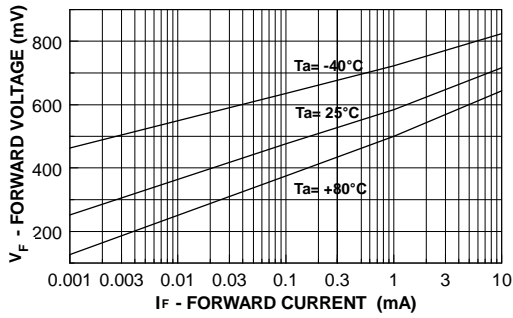
Typical Characteristics (Continued)



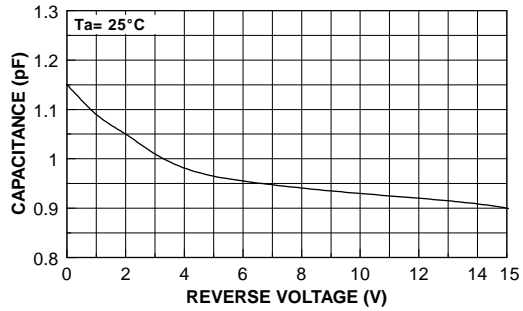
**Figure 5. Forward Voltage vs Forward Current
VF - 0.1 to 10mA**



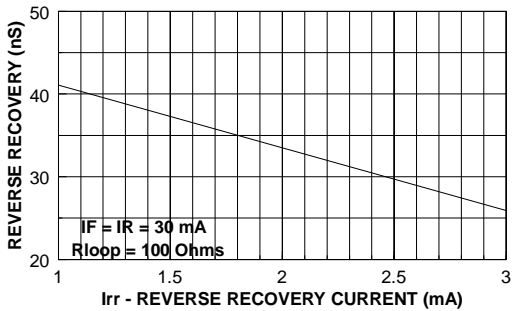
**Figure 6. Forward Voltage vs Forward Current
VF - 10 to 800mA**



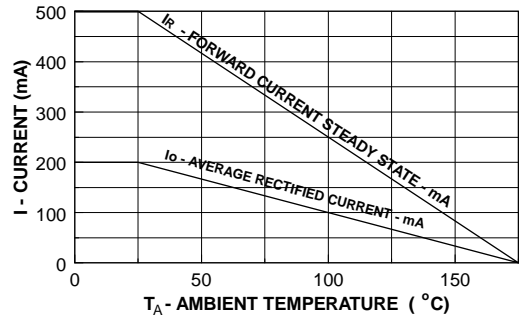
**Figure 7. Forward Voltage vs Ambient Temperature
VF - 1.0µA - 10mA (-40 to +80°C)**



**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)

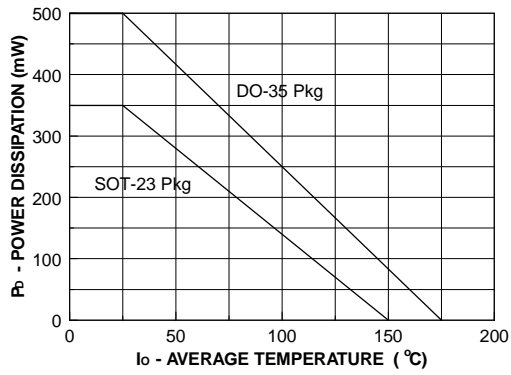


Figure 11. Power Derating Curve

MMBD1401A / 1403A / 1404A / 1405A

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