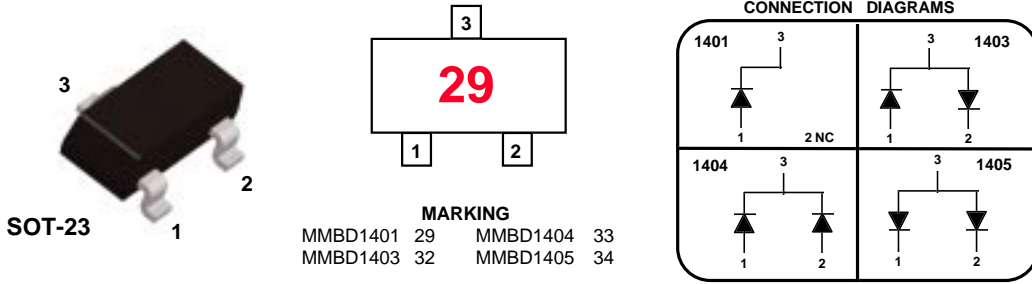


MMBD1401 / 1403 / 1404 / 1405



High Voltage General Purpose Diode

Sourced from Process 1H.

Absolute Maximum Ratings*

TA = 25°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
$i_{f(surge)}$	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	°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

TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		MMBD1401/1403/1404/1405*	
P_D	Total Device Dissipation Derate above 25°C	350	mW
		2.8	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	°C/W

* Device mounted on glass epoxy PCB 1.6" X 1.6" X 0.06"; mounting pad for the collector lead min. 0.93 in²

High Voltage General Purpose Diode

(continued)

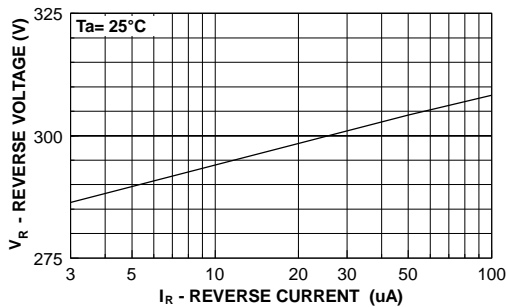
Electrical Characteristics

TA = 25°C unless otherwise noted

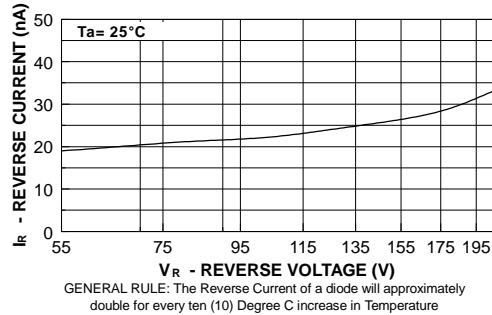
Symbol	Parameter	Test Conditions	Min	Max	Units
B _V	Breakdown Voltage	I _R = 100 μA	200		V
I _R	Reverse Current	V _R = 120 V V _R = 175 V		40 100	nA
V _F	Forward Voltage	I _F = 10 mA I _F = 50 mA I _F = 200 mA I _F = 300 mA	760	800 920 1.0 1.1	mV mV V V
C _O	Diode Capacitance	V _R = 0, f = 1.0 MHz		2.0	pF
T _{RR}	Reverse Recovery Time	I _F = I _R = 30 mA, I _{RR} = 1.0 mA, R _L = 100Ω		50	nS

Typical Characteristics

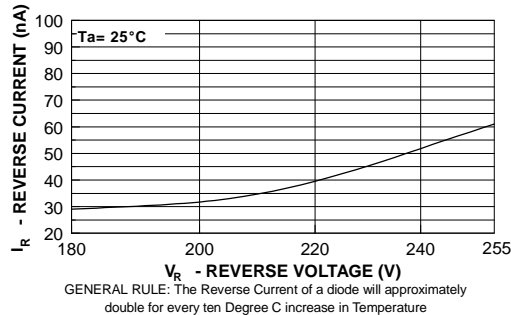
REVERSE VOLTAGE vs REVERSE CURRENT
BV - 1.0 to 100 μA



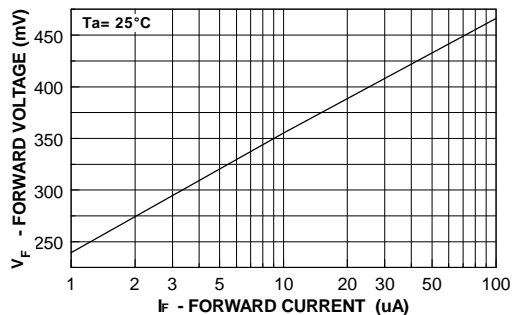
REVERSE CURRENT vs REVERSE VOLTAGE
IR - 55 to 205 V



REVERSE CURRENT vs REVERSE VOLTAGE
IR - 180 to 255 V



FORWARD VOLTAGE vs FORWARD CURRENT
VF - 1.0 to 100 μA



MMBD1401 / 1403 / 1404 / 1405

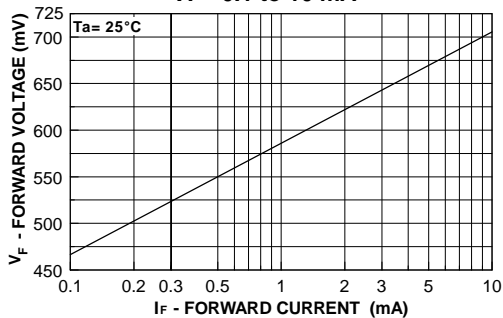
High Voltage General Purpose Diode

(continued)

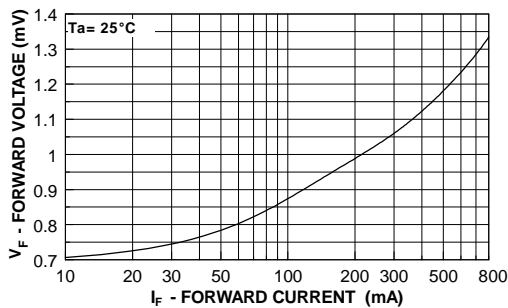
MMBD1401 / 1403 / 1404 / 1405

Typical Characteristics (continued)

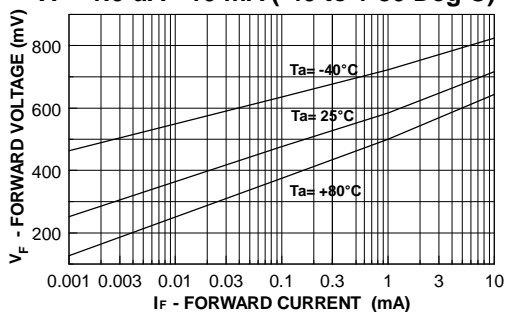
FORWARD VOLTAGE vs FORWARD CURRENT
VF - 0.1 to 10 mA



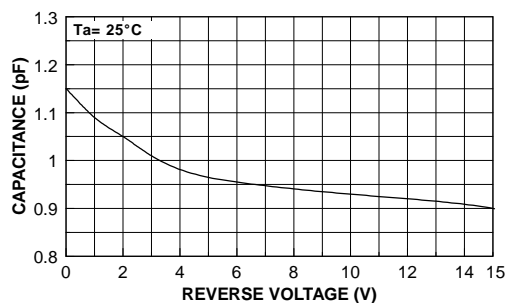
FORWARD VOLTAGE vs FORWARD CURRENT
VF - 10 to 800 mA



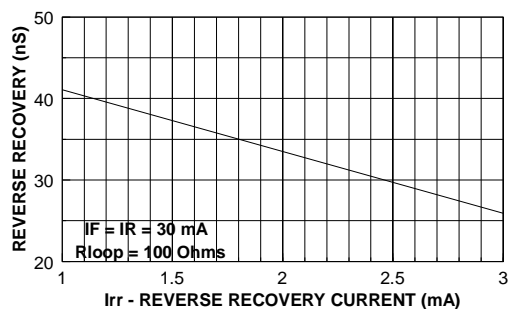
Forward Voltage vs Ambient Temperature
VF - 1.0 uA - 10 mA (-40 to + 80 Deg C)



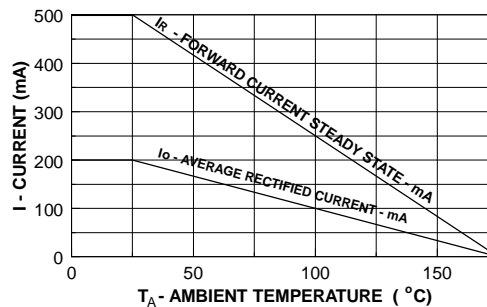
CAPACITANCE vs REVERSE VOLTAGE
VR - 0 to 15 V



REVERSE RECOVERY TIME vs REVERSE RECOVERY CURRENT (Irr)



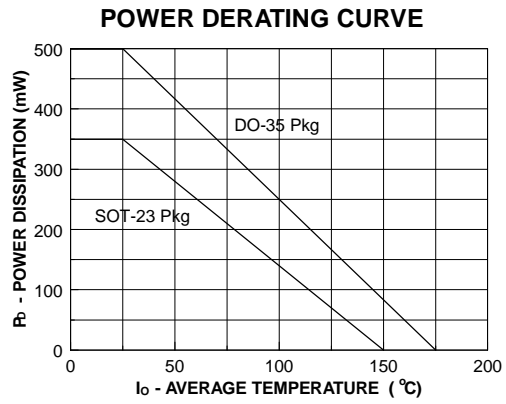
Average Rectified Current (Io) & Forward Current (If) versus Ambient Temperature (TA)



High Voltage General Purpose Diode

(continued)

Typical Characteristics (continued)



MMBD1401 / 1403 / 1404 / 1405

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