


Advance Information
SWITCHMODE™ Schottky
Power Rectifier

MBR28045V

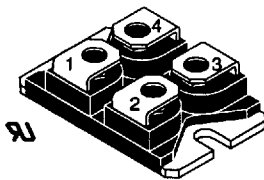
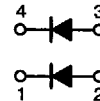
**SCHOTTKY BARRIER
RECTIFIER
160 AMPERES
45 VOLTS**

... using the Schottky Barrier principle with a platinum barrier metal. This state-of-the-art device has the following features:

- 45 V Blocking Voltage, Low Forward Voltage Drop
- Double Rectifier Diodes Construction: May Be Paralleled for Higher Current Output up to 160 Amp
- Guardring Construction Guarantees Stress Protection, High dV/dt Capability (10 kV/μs) and Reverse Avalanche
- Very Low Internal Parasitic Inductance (≤ 5.0 nH)
- Isolated Power Package (2500 Vac Insulation Rating)
- 175°C Operating Junction Temperature
-  — UL Recognized, File #E69369

Mechanical Characteristics

- Case: Molded epoxy with isolated metal base
- Weight: 28 g (approximately)
- Finish: All External Surfaces Corrosion Resistant
- Shipped 10 units per plastic tube
- Marking: MBR28045V



SOT-227B, STYLE 2

MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	45	Volts
Average Rectified Forward Current — Per Diode (Rated V_R) @ $T_C = 125^\circ\text{C}$ — Per Device	$I_{F(AV)}$	80 160	Amps
Peak Repetitive Forward Current, Per Diode (Rated V_R , Square Wave, 20 kHz) @ $T_C = 90^\circ\text{C}$	I_{FRM}	145	Amps
Non Repetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	900	Amps
Peak Repetitive Reverse Current (2.0 μs, 1.0 kHz)	I_{RRM}	2.0	Amps
Operating Junction Temperature	T_J	-65 to 150	°C
Storage Temperature	T_{stg}	-65 to 150	°C
Peak Surge Junction Temperature (Forward Current Applied)	$T_{J(pk)}$	175	°C
Voltage Rate of Change	dV/dt	10000	V/μs
Package Insulation Rating (AC)	V_{isol}	2500	Volts

THERMAL CHARACTERISTICS

Thermal Resistance, Junction to Case	Per Diode Per Device	$R_{\theta JC}$	1.1 0.6	°C/W

SWITCHMODE is a trademark of Motorola, Inc.

This document contains information on a new product. Specifications and information herein are subject to change without notice.

Rev 1



MBR28045V

ELECTRICAL CHARACTERISTICS PER DIODE

Instantaneous Forward Voltage (1) @ $i_F = 80$ Amps, $T_C = 25^\circ\text{C}$ @ $i_F = 80$ Amps, $T_C = 150^\circ\text{C}$ @ $i_F = 160$ Amps, $T_C = 25^\circ\text{C}$	V_F	0.8 0.69 1.0	Volts
Instantaneous Reverse Current (1) @ Rated DC Voltage, $T_C = 25^\circ\text{C}$ @ Rated DC Voltage, $T_C = 100^\circ\text{C}$	i_R	1.0 80	mA

(1) Pulse Test: Pulse Width = 300 μs , Duty Cycle < 2.0%

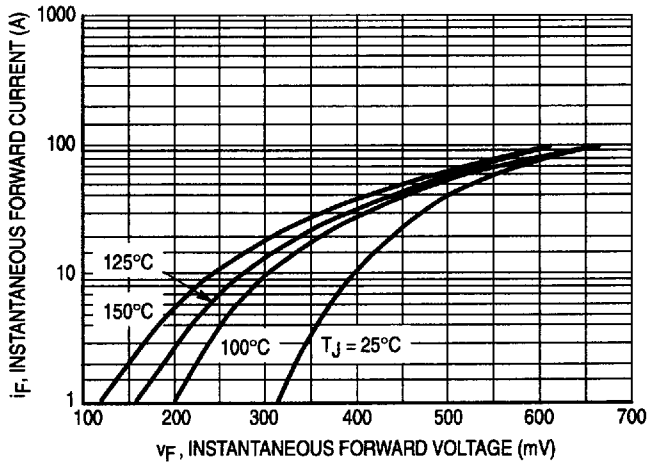


Figure 1. Typical Forward Voltage

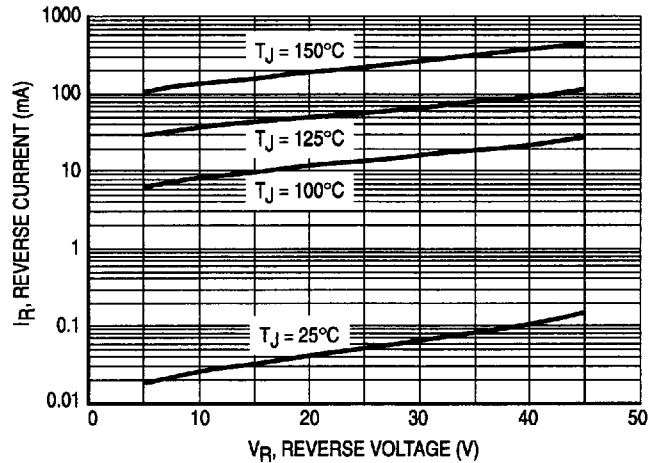
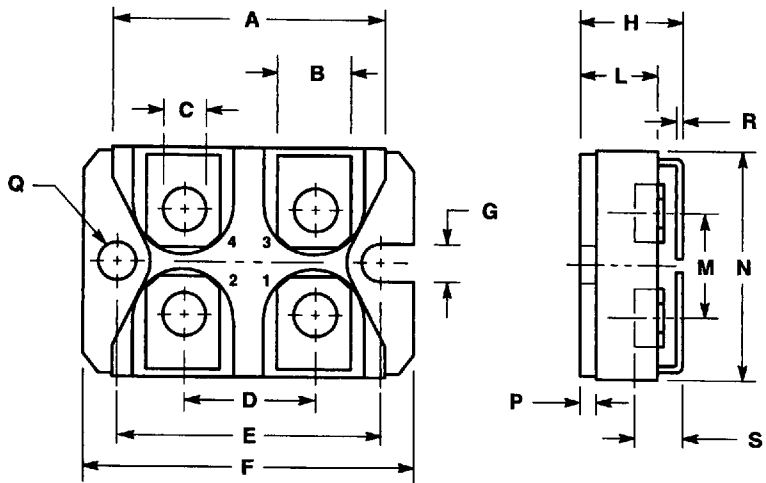


Figure 2. Typical Reverse Current

PACKAGE DIMENSIONS



Recommended screw torque: 1.3 ± 0.2 Nm
 Maximum screw torque: 1.5 Nm

- NOTES:
 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: MILLIMETERS.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	31.50	31.70	1.240	1.248
B	7.80	8.20	0.307	0.322
C	4.10	4.30	0.161	0.169
D	14.90	15.10	0.586	0.590
E	30.10	30.30	1.185	1.183
F	38.00	38.20	1.496	1.503
G	4.00	—	0.157	—
H	11.80	12.20	0.464	0.480
L	8.90	9.10	0.350	0.358
M	12.60	12.80	0.496	0.503
N	25.20	25.40	0.992	1.000
P	1.95	2.05	0.076	0.080
Q	4.10	—	0.157	—
R	0.75	0.85	0.030	0.033
S	5.50	—	0.217	—

- STYLE 2:
 PIN 1. CATHODE 1
 2. ANODE 2
 3. CATHODE 2
 4. ANODE 1

SOT-227B