

Advance Information

SWITCHMODE RECTIFIERS

... designed for use in switching power supplies, inverters, and as free wheeling diodes, these devices have the following features:

- Low Forward Voltage
- Low Leakage Current
- DO-204AH (DO-35) Glass Package

MAXIMUM RATINGS

Rating	Symbol	MBR030	MBR040	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	40	Volts
Average Rectified Forward Current (Rated V_F) $T_L = 90^\circ\text{C}$, $L = 3/8"$ $T_A = 60^\circ\text{C}$, $L = 3/8"$, (Mt. Method #1)	$I_F(AV)$	$\longleftrightarrow 0.5 \longleftrightarrow$ $\longleftrightarrow 0.5 \longleftrightarrow$		Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	$\longleftrightarrow 15.0 \longleftrightarrow$		Amps
Operating Junction and Storage Temperature	T_J , T_{stg}	- 65 to + 150		

THERMAL CHARACTERISTICS

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Lead = $3/8"$	$R_{\theta JL}$	180	190	$^\circ\text{C/W}$

ELECTRICAL CHARACTERISTICS

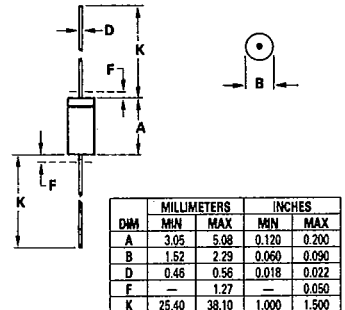
Characteristic	Symbol	Typ	Max	Unit
Instantaneous Forward Voltage (1) ($I_F = 0.1\text{ A}$, $T_J = 25^\circ\text{C}$) ($I_F = 0.5\text{ A}$, $T_J = 25^\circ\text{C}$)	V_F	0.460 0.610	0.500 0.750	Volts
Reverse Current (Rated dc Voltage, $T_J = 150^\circ\text{C}$) (Rated dc Voltage, $T_J = 25^\circ\text{C}$)	I_R	0.6 0.003	1.0 0.001	mA

(1) Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

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

SCHOTTKY RECTIFIERS

0.5 AMPERE
30-40 VOLTS



ALL JEDEC dimensions and notes apply.

NOTES:

1. PACKAGE CONTOUR OPTIONAL WITHIN A AND B. HEAT SLUGS, IF ANY, SHALL BE INCLUDED WITHIN THIS CYLINDER, BUT NOT SUBJECT TO THE MINIMUM LIMIT OF B.
2. LEAD DIAMETER NOT CONTROLLED IN ZONE F TO ALLOW FOR FLASH, LEAD FINISH BUILDUP AND MINOR IRREGULARITIES OTHER THAN HEAT SLUGS.
3. POLARITY DENOTED BY CATHODE BAND.
4. DIMENSIONING AND TOLERANCING PER ANSI Y14.5, 1973.

MECHANICAL CHARACTERISTICS

CASE: Glass

FINISH: External leads are plated and are readily solderable

POLARITY: Cathod indicated by polarity band.

WEIGHT: 0.2 Gram (approximately).

MAXIMUM LEAD TEMPERATURE FOR SOLDERING PURPOSES: 230 $^\circ\text{C}$, $1/8"$ from case for 10 seconds.

MBR030, MBR040

FIGURE 1 — TYPICAL FORWARD VOLTAGE

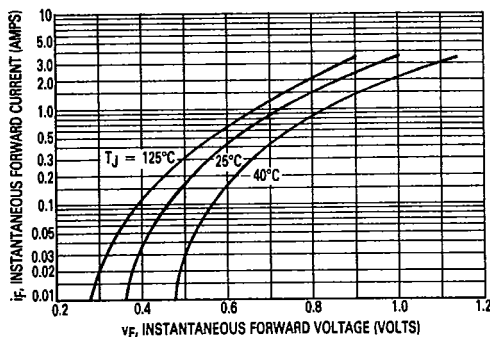


FIGURE 3 — TYPICAL CAPACITANCE

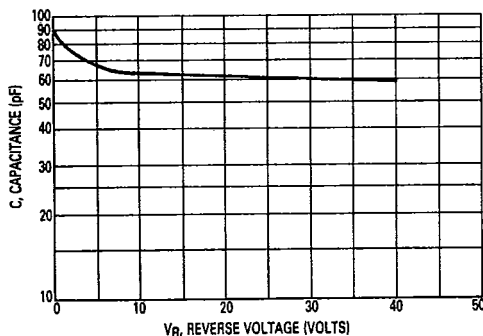


FIGURE 5 — FORWARD POWER DISSIPATION

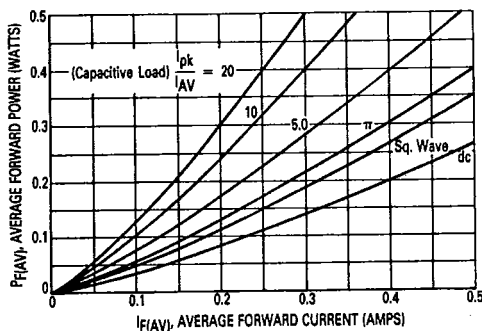


FIGURE 2 — CURRENT DERATING, PRINTED CIRCUIT BOARD MOUNTING

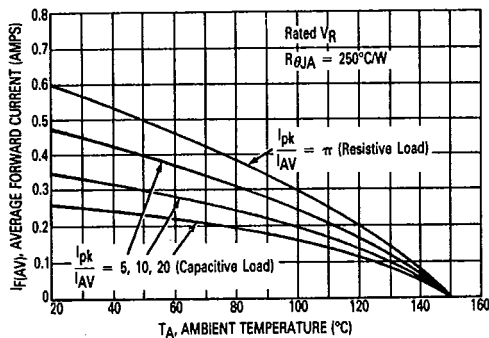
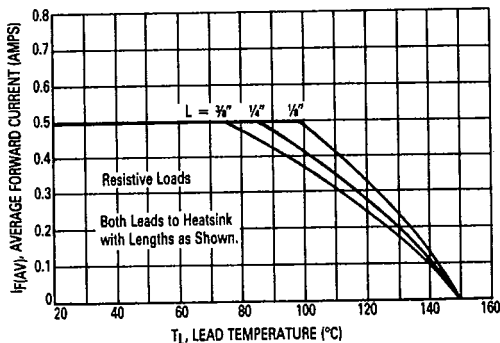


FIGURE 4 — CURRENT DERATING, LEAD TEMPERATURE



NOTE 1

Data shown for thermal resistance junction-to-ambient (θ_{JA}) for the mountings shown is to be used as typical guideline values for preliminary engineering or in case the tie point temperature cannot be measured.

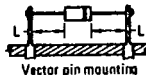
TYPICAL VALUES FOR θ_{JA} IN STILL AIR

MOUNTING METHOD	1/8	1/4	3/8	$R_{\theta JA}$
1	200	225	250	$^\circ\text{C/W}$
2	210	235	260	$^\circ\text{C/W}$
3		150		$^\circ\text{C/W}$

MOUNTING METHOD 1



MOUNTING METHOD 2



MOUNTING METHOD 3

