MBRL030
MBRL040

MOTOROLA

Advance Information

LEADLESS SCHOTTKY RECTIFIERS

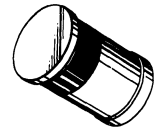
0.5 AMPERE 30–40 VOLTS

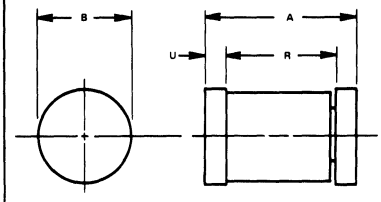
3

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
- Leadless Package for Surface Mount Technology





DIM	MILLIMETERS MIN	MILLIMETERS MAX	INCHES MIN	INCHES MAX
A	3.30	3.70	0.130	0.146
B	1.60	1.70	0.063	0.067
R	2.49	2.59	0.098	0.102
U	0.41	0.55	0.016	0.022

CASE 362-01

MAXIMUM RATINGS

Rating	Symbol	MBRL030	MBRL040	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_R) T_C = 75°C, T_A = 50°C, Mounting Per Note 1	$I_{F(AV)}$	0.5 0.5		Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	5.0		Amps
Operating Junction and Storage Temperature	T_J, T_{stg}	−65 to +150		°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to End Cap	$R_{\theta JC}$	180	190	°C/W

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Typ	Max	Unit
Instantaneous Foward Voltage (1) (i_F = 0.1 A, T_J = 25°C) (i_F = 0.5 A, T_J = 25°C)	v_F	 0.460 0.610	 0.500 0.650	Volts
Reverse Current (Rated dc Voltage, T_J = 125°C) (Rated dc Voltage, T_J = 25°C)	i_R	 0.6 0.003	 1.0 0.005	mA

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

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.

MECHANICAL CHARACTERISTICS

CASE: Glass

FINISH: End caps are plated and are readily solderable

POLARITY: Cathod indicated by polarity band.

WEIGHT: 0.2 Gram (approximately).

MAXIMUM LEAD TEMPERATURE FOR SOLDERING PURPOSES: 230°C, @ end cap for 10 seconds.

FIGURE 1 — TYPICAL FORWARD VOLTAGE

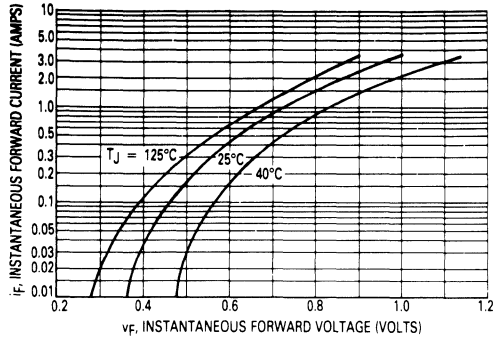


FIGURE 2 — CURRENT DERATING, PRINTED CIRCUIT BOARD MOUNTING

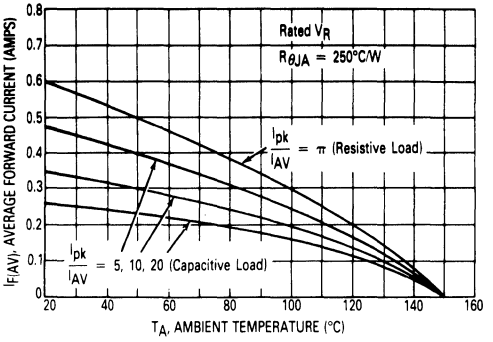


FIGURE 3 — TYPICAL CAPACITANCE

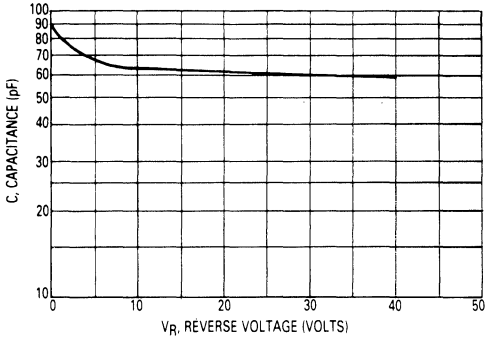


FIGURE 4 — CURRENT DERATING, END CAP TEMPERATURE

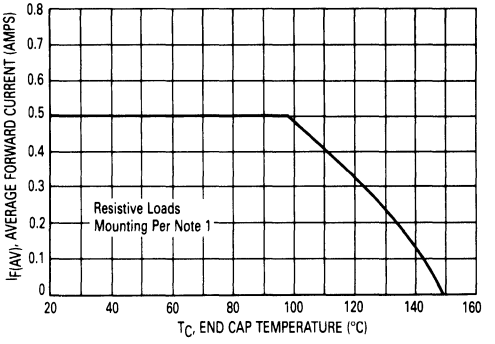
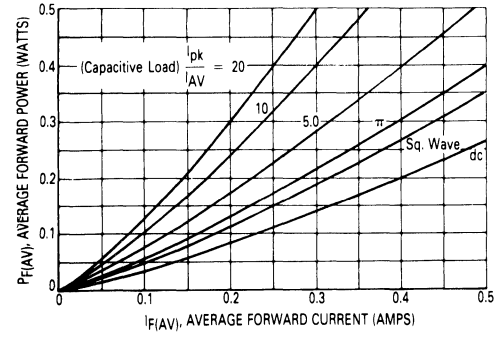


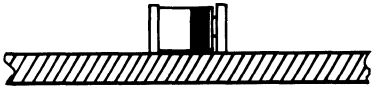
FIGURE 5 — FORWARD POWER DISSIPATION



NOTE 1

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

TYPICAL VALUES FOR θ_{JA} IN STILL AIR = 250°C/W



PC Board with 1½" x 1½" Copper Surface