

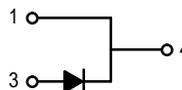
# SWITCHMODE™ Power Rectifier

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

- Ultrafast 100 Nanosecond Recovery Time
- 175°C Operating Junction Temperature
- High Voltage Capability to 400 Volts
- Low Forward Voltage Drop
- High Temperature Glass Passivated Junction

## Mechanical Characteristics

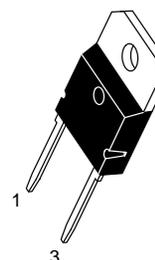
- Case: Epoxy, Molded
- Weight: 4.3 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 30 Units Per Plastic Tube
- Marking: U3040



**MUR3040**

Motorola Preferred Device

**ULTRAFAST RECTIFIERS**  
**30 AMPERES**  
**400 VOLTS**



CASE 340E-02, STYLE 1

## MAXIMUM RATINGS

Rating	Symbol	Max	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	400	Volts
Average Rectified Forward Current $T_C = 70^\circ\text{C}$	$I_{F(AV)}$	30	Amps
Peak Repetitive Forward Current (Rated $V_R$ , Square Wave, 20 kHz) $T_C = 150^\circ\text{C}$	$I_{FRM}$	30	Amps
Non Repetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	$I_{FSM}$	300	Amps
Operating Junction Temperature and Storage Temperature	$T_J, T_{stg}$	-65 to +175	$^\circ\text{C}$

## THERMAL CHARACTERISTICS

Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.0	$^\circ\text{C/W}$
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## ELECTRICAL CHARACTERISTICS

Instantaneous Forward Voltage (1) @ $I_F = 30$ Amps, $T_C = 100^\circ\text{C}$ @ $I_F = 30$ Amps, $T_C = 25^\circ\text{C}$	$V_F$	1.4 1.5	Volts
Instantaneous Reverse Current (1) @ Rated dc Voltage, $T_C = 100^\circ\text{C}$ @ Rated dc Voltage, $T_C = 25^\circ\text{C}$	$I_R$	6.0 35	mA $\mu\text{A}$
Reverse Recovery Time $I_F = 1.0$ Amp, $dI/dt = 15$ Amp/ $\mu\text{s}$	$t_{RR}$	100	ns

(1) Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$

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Preferred devices are Motorola recommended choices for future use and best overall value.

Rev 3

TYPICAL ELECTRICAL CHARACTERISTICS

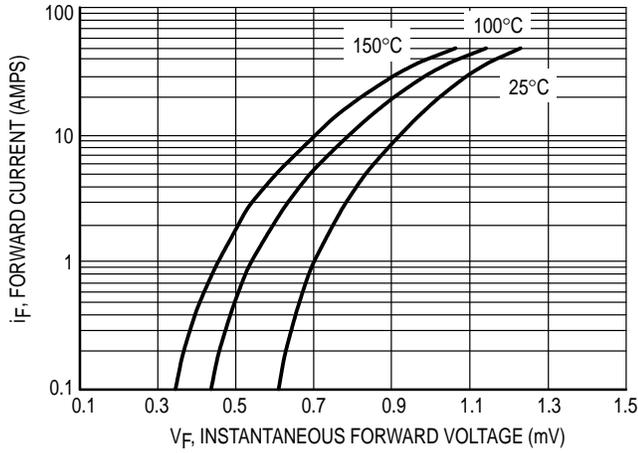


Figure 1. Typical Forward Voltage

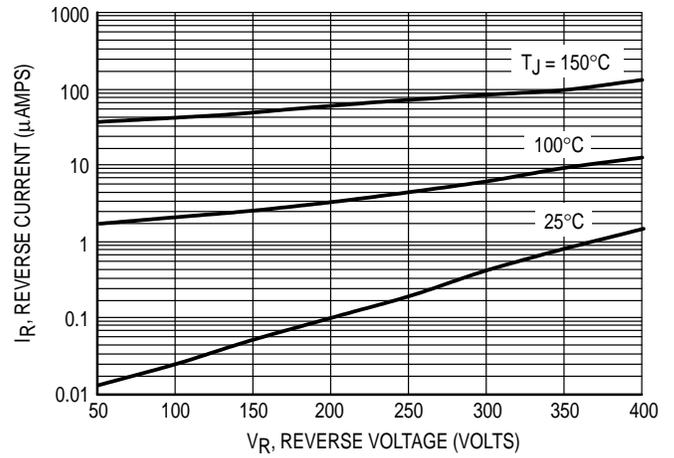


Figure 2. Typical Reverse Current

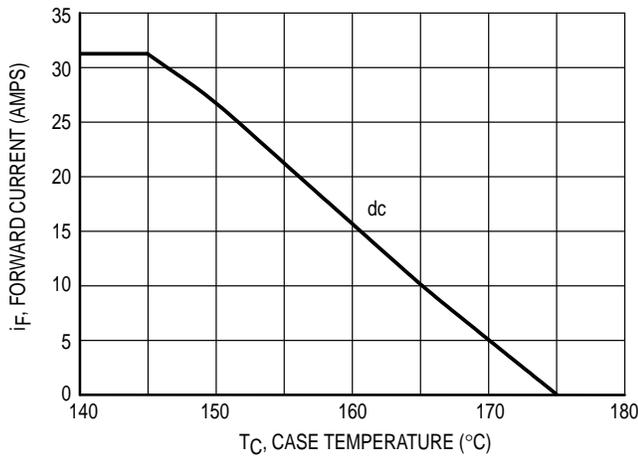


Figure 3. Current Derating, Case

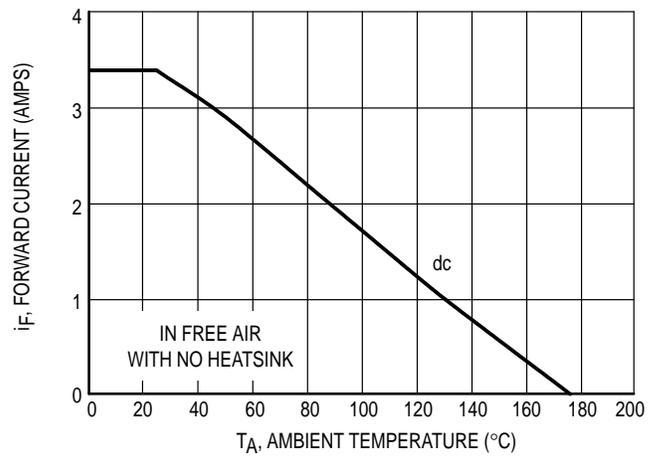
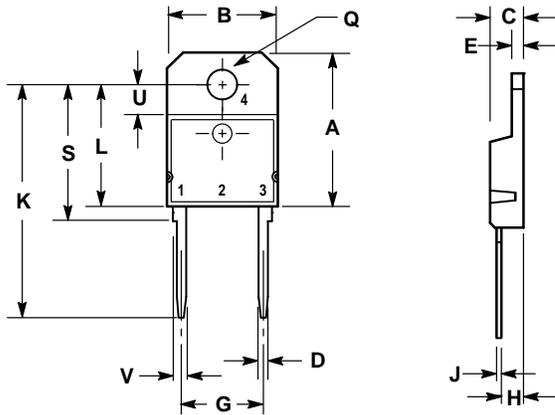


Figure 4. Current Derating, Ambient

PACKAGE DIMENSIONS



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

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	—	20.35	—	0.801
B	14.70	15.20	0.579	0.598
C	4.70	4.90	0.185	0.193
D	1.10	1.30	0.043	0.051
E	1.17	1.37	0.046	0.054
G	10.80	11.10	0.425	0.437
H	2.00	3.00	0.079	0.118
J	0.50	0.78	0.020	0.031
K	31.00 REF		1.220 REF	
L	—	16.20	—	0.638
Q	4.00	4.10	0.158	0.161
S	17.80	18.20	0.701	0.717
U	4.00 REF		0.157 REF	
V	1.75 REF		0.069	

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

CASE 340E-02  
 ISSUE A

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