Preferred Devices

SWITCHMODE™ Power Rectifiers

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

Features

- Ultrafast 25, 50 and 75 Nanosecond Recovery Time
- 175°C Operating Junction Temperature
- Popular TO-220 Package
- Epoxy Meets UL 94 V-0 @ 0.125 in
- Low Forward Voltage
- Low Leakage Current
- High Temperature Glass Passivated Junction
- Reverse Voltage to 600 Volts
- Pb-Free Packages are Available*

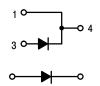
Mechanical Characteristics

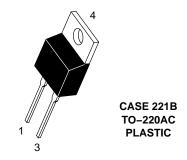
- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube



http://onsemi.com

ULTRAFAST RECTIFIERS 8.0 AMPERES 50-600 VOLTS





MARKING DIAGRAM



A = Assembly Locarion

′ = Year

WW = Work Week

U8 = Device Code

xx = 10, 15, 20, 40 or 60

KA = Location Code

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 2 of this data sheet.

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

^{*}For additional information on our Pb–Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

MAXIMUM RATINGS

		MUR						
Rating	Symbol	805	810	815	820	840	860	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	50	100	150	200	400	600	V
Average Rectified Forward Current Total Device, (Rated V _R), T _C = 150°C	I _{F(AV)}	8.0				А		
Peak Repetitive Forward Current (Rated V _R , Square Wave, 20 kHz), T _C = 150°C	I _{FM}	16			Α			
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I _{FSM}	100				А		
Operating Junction Temperature and Storage Temperature Range	T _J , T _{stg}	-65 to +175			°C			

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

THERMAL CHARACTERISTICS

Maximum Thermal Resistance, Junction-to-Case	$R_{ heta JC}$	3.0	2.0	°C/W
ELECTRICAL CHARACTERISTICS	·			
Maximum Instantaneous Forward Voltage (Note 1) ($i_F = 8.0 \text{ Amps}$, $T_C = 150^{\circ}\text{C}$) ($i_F = 8.0 \text{ Amps}$, $T_C = 25^{\circ}\text{C}$)	VF	0.895 0.975		20 50
Maximum Instantaneous Reverse Current (Note 1) (Rated dc Voltage, T _J = 150°C) (Rated dc Voltage, T _J = 25°C)	i _R	250 5.0	500 10	μΑ
Maximum Reverse Recovery Time $ (I_F = 1.0 \text{ Amp, di/dt} = 50 \text{ Amps/}\mu\text{s}) $ $ (I_F = 0.5 \text{ Amp, } i_R = 1.0 \text{ Amp, } I_{REC} = 0.25 \text{ Amp}) $	t _{rr}	35 25	60 50	ns

^{1.} Pulse Test: Pulse Width = 300 μ s, Duty Cycle \leq 2.0%.

ORDERING INFORMATION

Device	Package	Shipping [†]
MUR805	TO-220	50 Units / Rail
MUR810	TO-220	50 Units / Rail
MUR815	TO-220	50 Units / Rail
MUR815G	TO-220 (Pb-Free)	50 Units / Rail
MUR820	TO-220	50 Units / Rail
MUR820G	TO-220 (Pb-Free)	50 Units / Rail
MUR840	TO-220	50 Units / Rail
MUR840G	TO-220 (Pb-Free)	50 Units / Rail
MUR860	TO-220	50 Units / Rail
MUR860G	TO-220 (Pb-Free)	50 Units / Rail

[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

MUR805, MUR810, MUR815, MUR820

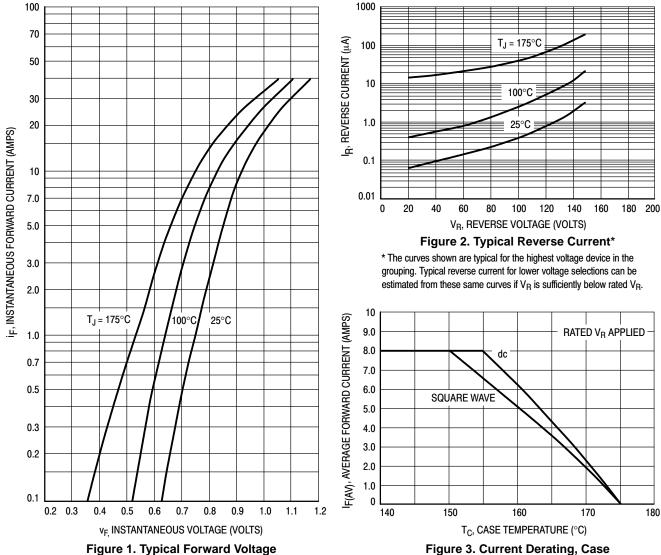


Figure 1. Typical Forward Voltage

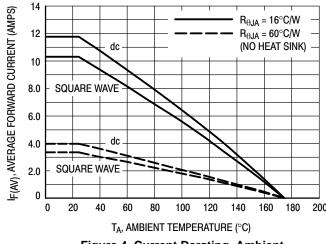


Figure 4. Current Derating, Ambient

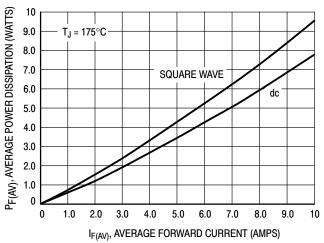
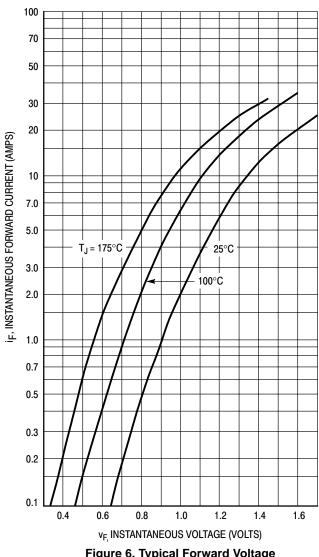
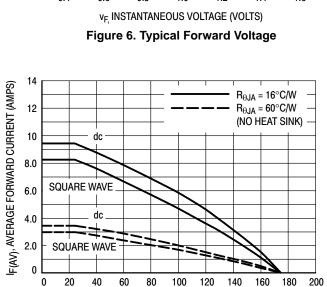


Figure 5. Power Dissipation

MUR840





T_A, AMBIENT TEMPERATURE (°C)

Figure 9. Current Derating, Ambient

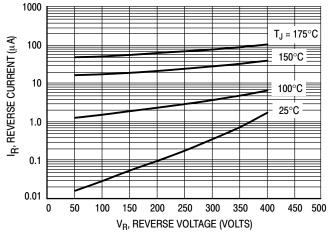


Figure 7. Typical Reverse Current*

 * The curves shown are typical for the highest voltage device in the grouping. Typical reverse current for lower voltage selections can be estimated from these same curves if V_{R} is sufficiently below rated V_{R} .

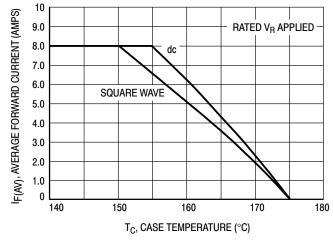


Figure 8. Current Derating, Case

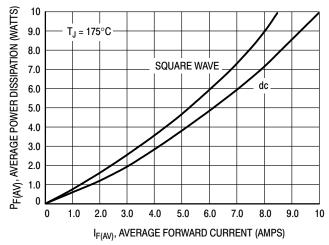
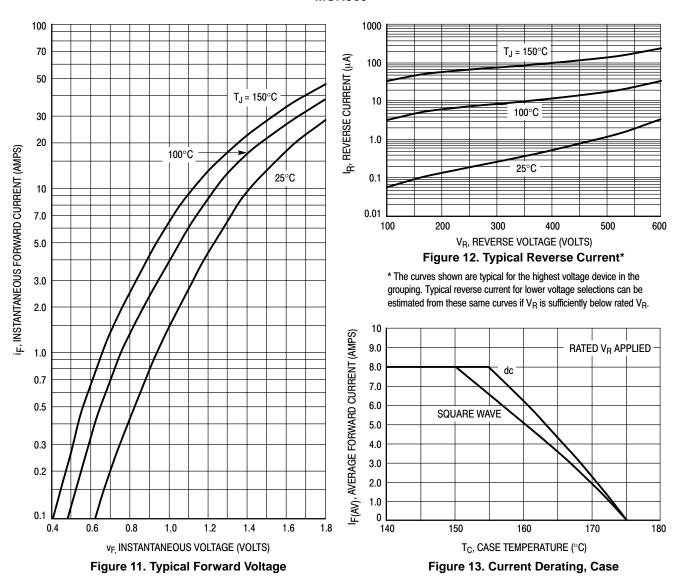


Figure 10. Power Dissipation

MUR860



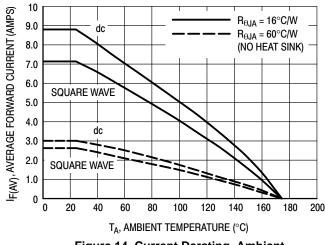


Figure 14. Current Derating, Ambient

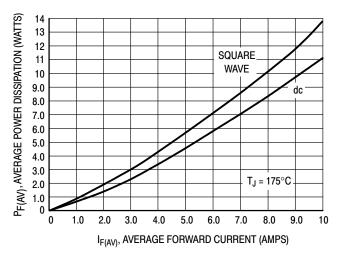


Figure 15. Power Dissipation

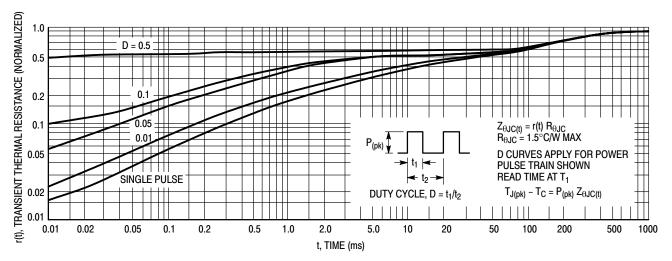


Figure 16. Thermal Response

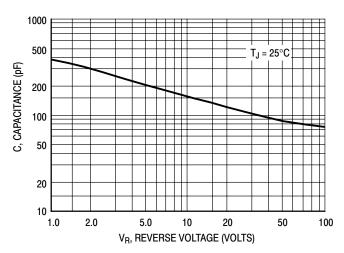
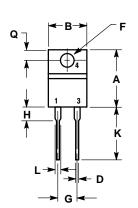


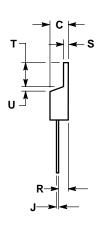
Figure 17. Typical Capacitance

PACKAGE DIMENSIONS

TO-220 TWO-LEAD

CASE 221B-04 ISSUE D





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

	INCHES		MILLIMETERS		
DIM	MIN	MAX	MIN	MAX	
Α	0.595	0.620	15.11	15.75	
В	0.380	0.405	9.65	10.29	
С	0.160	0.190	4.06	4.82	
D	0.025	0.035	0.64	0.89	
F	0.142	0.147	3.61	3.73	
G	0.190	0.210	4.83	5.33	
Н	0.110	0.130	2.79	3.30	
J	0.018	0.025	0.46	0.64	
K	0.500	0.562	12.70	14.27	
L	0.045	0.060	1.14	1.52	
Q	0.100	0.120	2.54	3.04	
R	0.080	0.110	2.04	2.79	
S	0.045	0.055	1.14	1.39	
T	0.235	0.255	5.97	6.48	
U	0.000	0.050	0.000	1.27	

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