

# MURD330

## SWITCHMODE Power Rectifier

### DPAK Surface Mount Package

These state-of-the-art devices are designed for use in switching power supplies, inverters and as free wheeling diodes.

#### Features

- Low Forward Voltage Drop
- Low Leakage
- Ultra-Fast Recovery Time
- Pb-Free Package is Available

#### Mechanical Characteristics

- Case: Epoxy, Molded
- Weight: 0.4 Gram (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds

#### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Rated Reverse Voltage	$V_R$	300	V
Average Rectified Forward Current (Rated $V_R$ , $T_C = 170^\circ\text{C}$ )	$I_F$	3.0	A
Non-Repetitive Peak Surge Current	$I_{FSM}$	75	A
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to +175	$^\circ\text{C}$

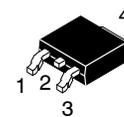
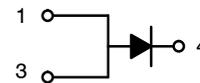
Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.



ON Semiconductor®

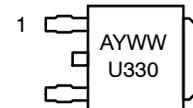
<http://onsemi.com>

### ULTRAFAST RECTIFIER 3 A, 300 V



DPAK  
CASE 369C

#### MARKING DIAGRAM



U330 = Specific Device Code  
A = Assembly Location  
Y = Year  
WW = Work Week

#### ORDERING INFORMATION

Device	Package	Shipping†
MURD330T4	DPAK	2500/Tape & Reel
MURD330T4G	DPAK (Pb-Free)	2500/Tape & Reel

†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.

# MURD330

## THERMAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Thermal Resistance – Junction-to-Case	$R_{\theta JC}$	2	$^{\circ}C/W$
Thermal Resistance – Junction-to-Ambient (Note 1)	$R_{\theta JA}$	49	$^{\circ}C/W$

## ELECTRICAL CHARACTERISTICS

Rating	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage Drop ( $I_F = 3\text{ A}$ , $T_J = 25^{\circ}C$ ) ( $i_F = 3\text{ A}$ , $T_J = 150^{\circ}C$ )	$V_F$	1.15 0.92	V
Maximum Instantaneous Reverse Current ( $T_J = 25^{\circ}C$ , 300 V) ( $T_J = 150^{\circ}C$ , 300 V)	$I_R$	5 500	$\mu A$
Maximum Reverse Recovery Time ( $I_F = 1\text{ Amp}$ , $di/dt = 50\text{ A}/\mu s$ , $V_R = 30\text{ V}$ , $T_J = 25^{\circ}C$ )	$t_{rr}$	50	ns
ESD Ratings:	Machine Model = C Human Body Model = 3B	> 400 > 8000	V

1. Rating applies when surface mounted on a 700 mm<sup>2</sup>, 1 oz Cu heat spreader.

## TYPICAL CHARACTERISTICS

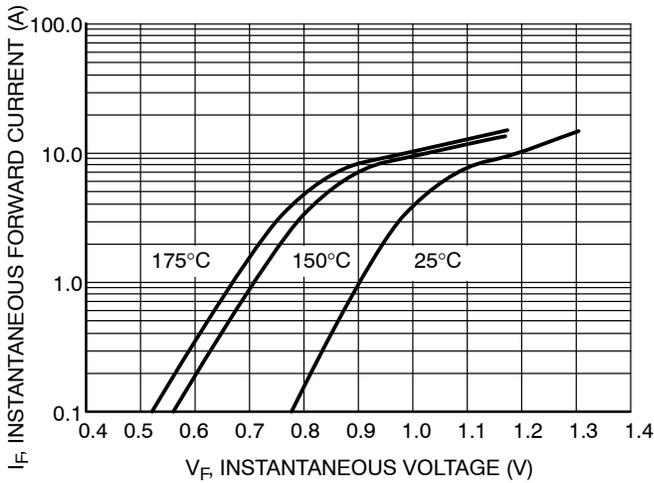


Figure 1. Typical Forward Voltage

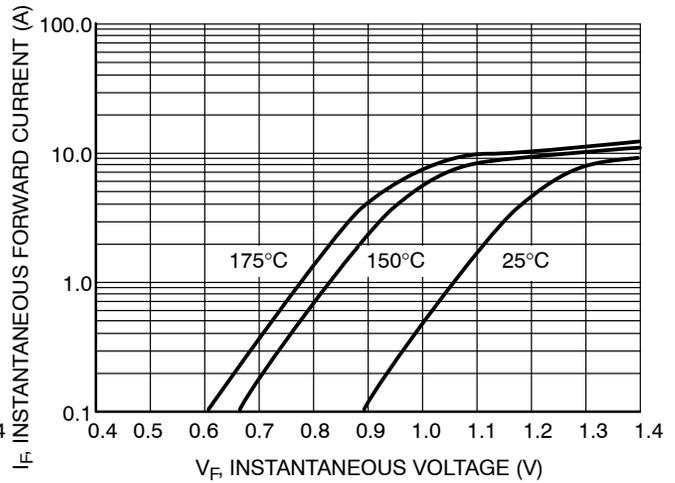


Figure 2. Maximum Forward Voltage

# MURD330

## TYPICAL CHARACTERISTICS

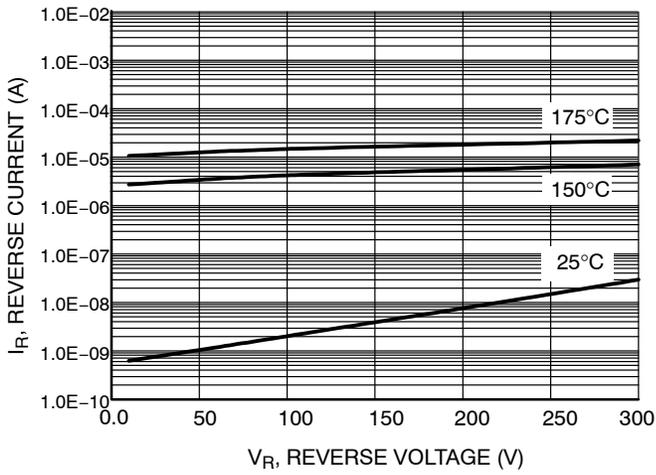


Figure 3. Typical Reverse Voltage

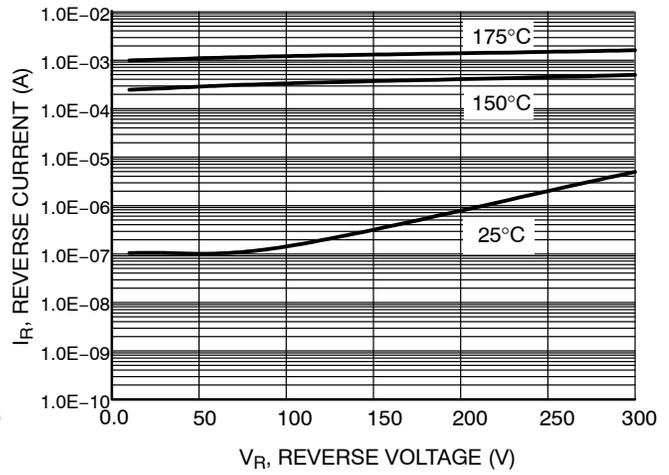


Figure 4. Maximum Reverse Voltage

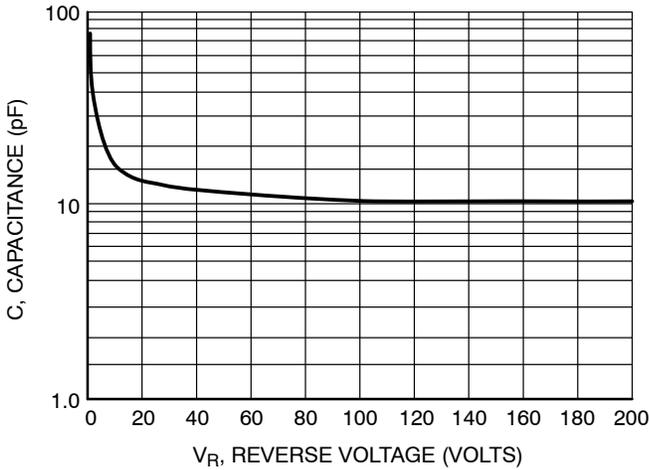


Figure 5. Typical Capacitance

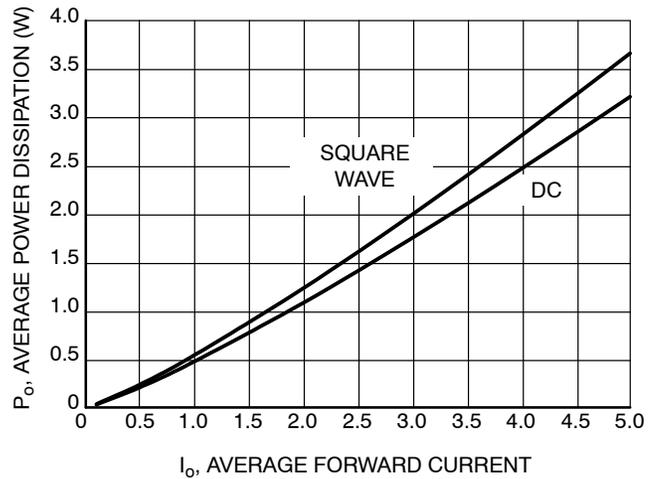


Figure 6. Power Dissipation

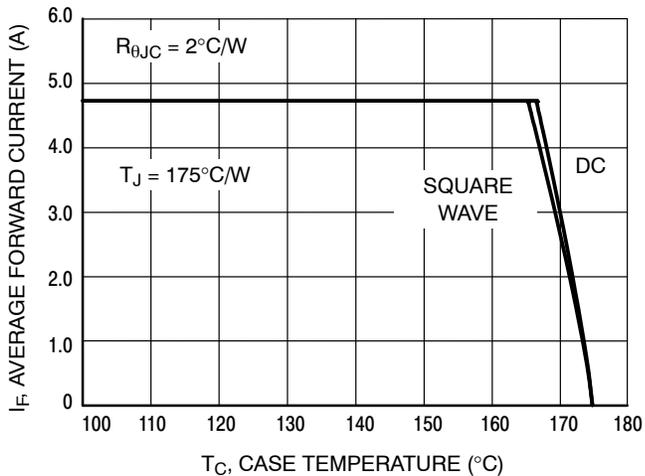


Figure 7. Current Derating, Case

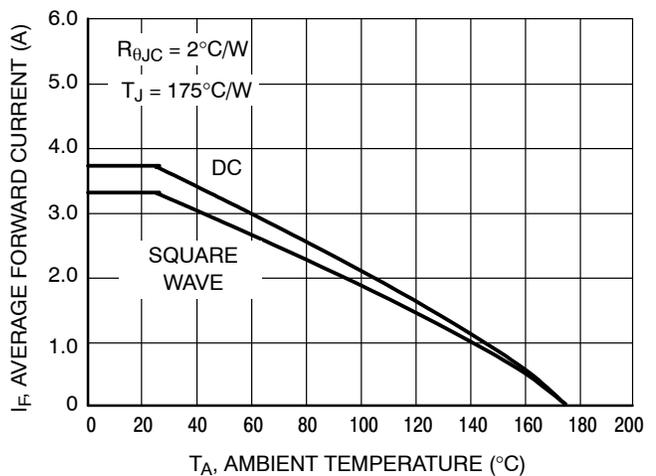
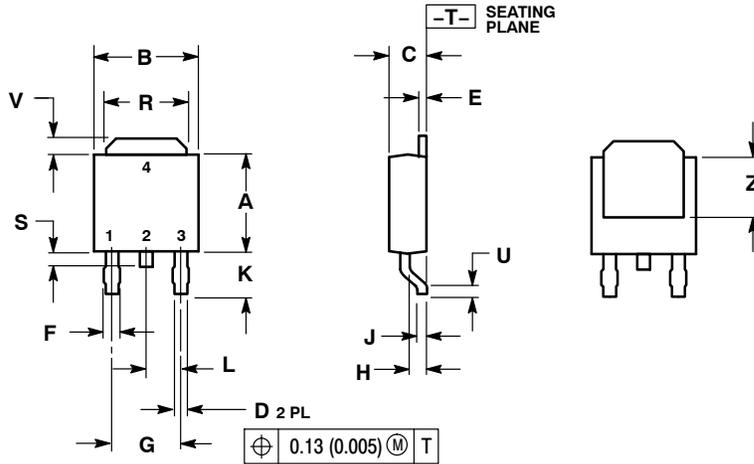


Figure 8. Current Derating, Ambient

# MURD330

## PACKAGE DIMENSIONS

DPAK  
CASE 369C-01  
ISSUE O

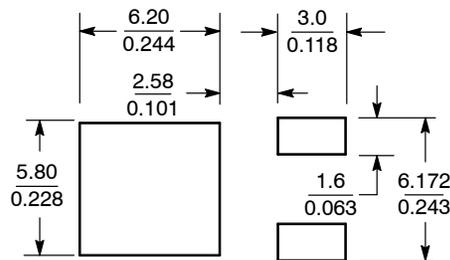


**NOTES:**

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

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.235	0.245	5.97	6.22
B	0.250	0.265	6.35	6.73
C	0.086	0.094	2.19	2.38
D	0.027	0.035	0.69	0.88
E	0.018	0.023	0.46	0.58
F	0.037	0.045	0.94	1.14
G	0.180 BSC		4.58 BSC	
H	0.034	0.040	0.87	1.01
J	0.018	0.023	0.46	0.58
K	0.102	0.114	2.60	2.89
L	0.090 BSC		2.29 BSC	
R	0.180	0.215	4.57	5.45
S	0.025	0.040	0.63	1.01
U	0.020	---	0.51	---
V	0.035	0.050	0.89	1.27
Z	0.155	---	3.93	---

### SOLDERING FOOTPRINT\*



SCALE 3:1  $\left(\frac{\text{mm}}{\text{inches}}\right)$

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

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