# MURD340

# 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 |
|---|---|---|---|
| Peak Reverse Voltage | $V_R$ | 400 | V |
| Average Rectified Forward Current | $I_{F(AV)}$ | 3 | A |
| Nonrepetitive Peak Surge Current | $I_{FSM}$ | 75 | A |
| Operating Junction and Storage Temperature Range | $T_J$, $T_{stg}$ | −55 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.

**ON Semiconductor®**

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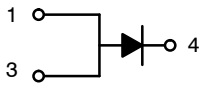
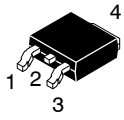
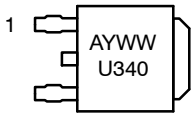
**ULTRAFAST RECTIFIER**
**3 A, 400 V**




**DPAK**
**CASE 369C**

**MARKING DIAGRAM**




U340 = Specific Device Code
A = Assembly Location
Y = Year
WW = Work Week

### ORDERING INFORMATION

| Device | Package | Shipping† |
|---|---|---|
| MURD340T4 | DPAK | 2500 / Tape & Reel |
| MURD340T4G | 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.

## THERMAL CHARACTERISTICS

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

1. Rating applies when surface mounted on a 700 $mm^2$, 1 oz Cu heat spreader.

## ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|---|---|---|---|
| Maximum Instantaneous Forward Voltage<br>($I_F$ = 3.0 A, $T_J$ = 25°C)<br>($I_F$ = 3.0 A, $T_J$ = 150°C) | $V_F$ | <br>1.15<br>0.92 | V |
| Maximum Instantaneous Reverse Current (Rated $V_R$)<br>($T_J$ = 25°C, 400 V)<br>($T_J$ = 150°C, 400 V) | $I_R$ | <br>5<br>500 | μA |
| Maximum Reverse Recovery Time<br>($I_F$ = 1.0 A, di/dt = 50 A/μs, $V_R$ = 30 V, $T_J$ = 25°C) | $t_{rr}$ | <br>50 | ns |
| ESD Ratings Machine Model = C<br>Human Body Model = 3B | | > 400<br>> 8000 | V |

## TYPICAL CHARACTERISTICS

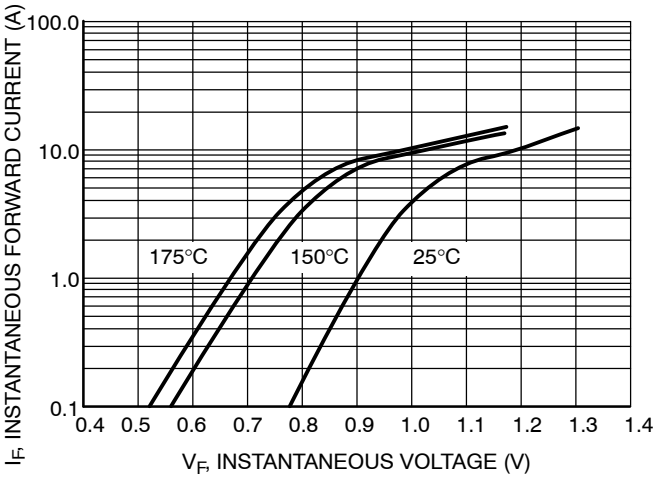



**Figure 1. Typical Forward Voltage**

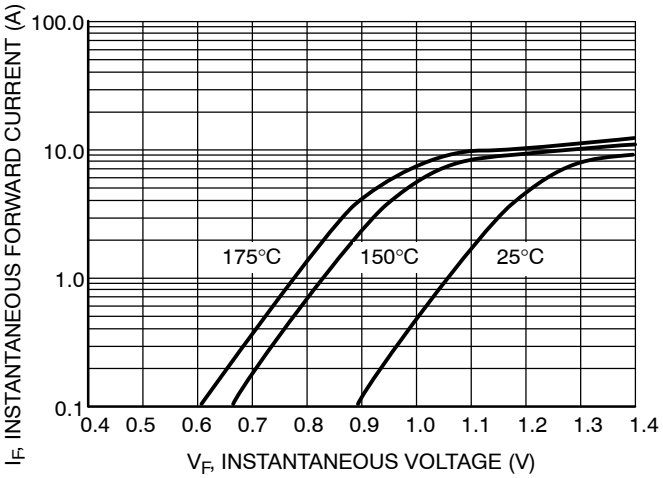



**Figure 2. Maximum Forward Voltage**

## TYPICAL CHARACTERISTICS

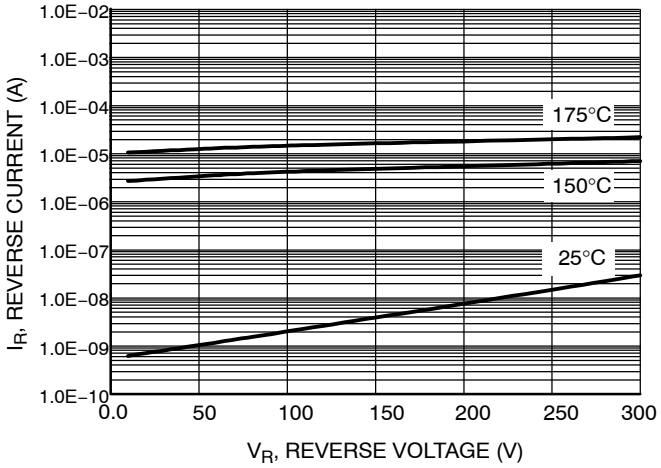



**Figure 3. Typical Reverse Voltage**

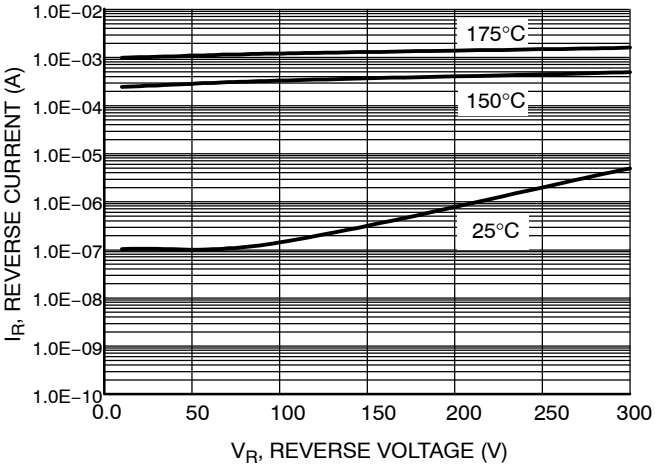



**Figure 4. Maximum Reverse Voltage**

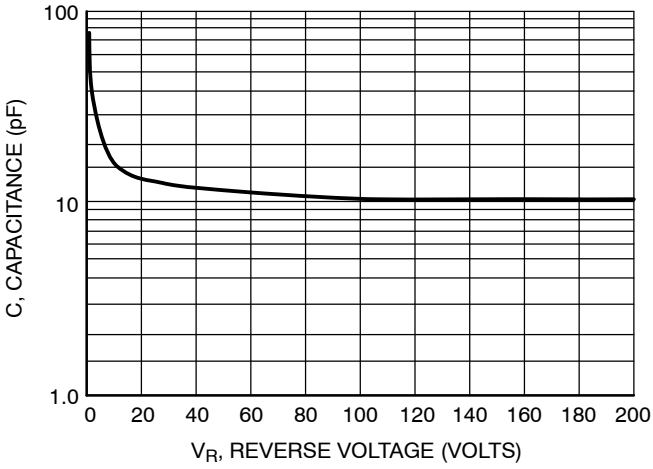



**Figure 5. Typical Capacitance**

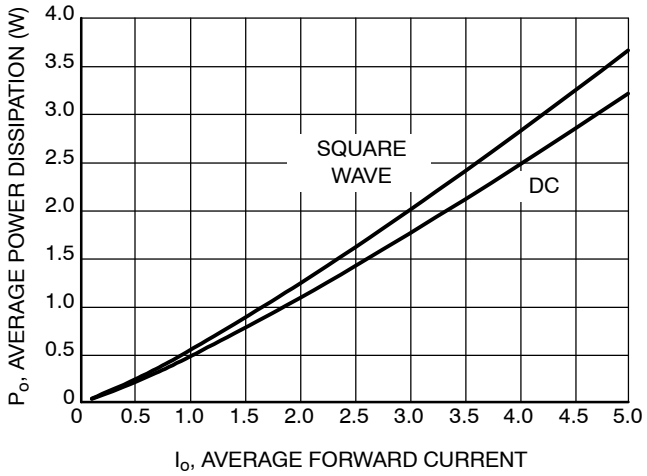



**Figure 6. Power Dissipation**

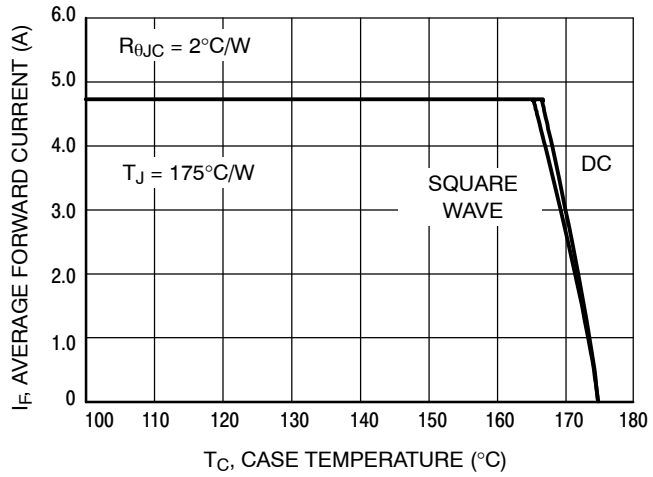



**Figure 7. Current Derating, Case**

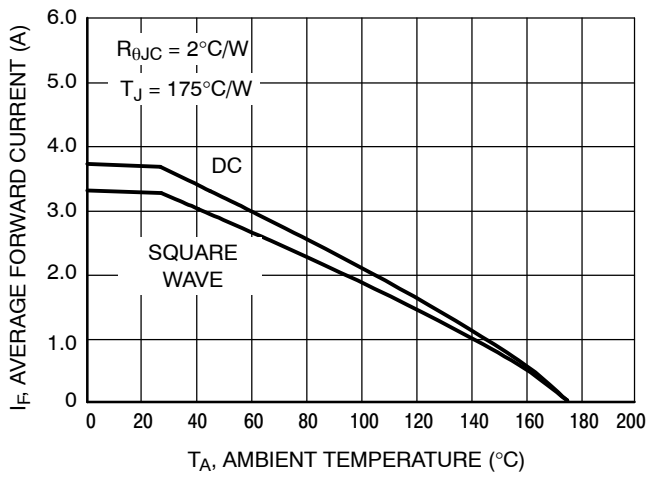
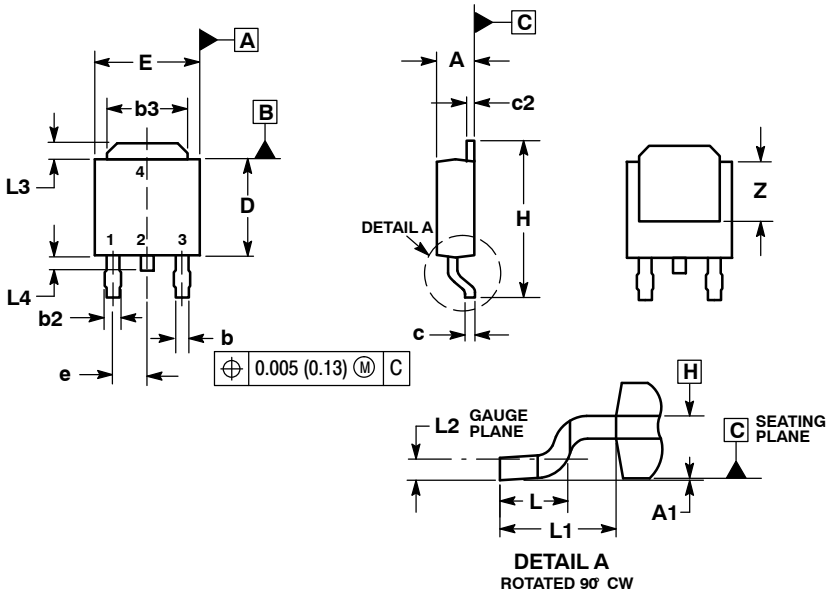



**Figure 8. Current Derating, Ambient**

## PACKAGE DIMENSIONS

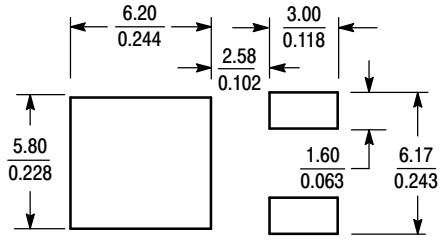
### DPAK (SINGLE GAUGE)
CASE 369C−01
ISSUE D




NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: INCHES.
3. THERMAL PAD CONTOUR OPTIONAL WITHIN DIMENSIONS b3, L3 and Z.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.006 INCHES PER SIDE.
5. DIMENSIONS D AND E ARE DETERMINED AT THE OUTERMOST EXTREMES OF THE PLASTIC BODY.
6. DATUMS A AND B ARE DETERMINED AT DATUM PLANE H.

| | INCHES | | MILLIMETERS | |
|---|---|---|---|---|
| DIM | MIN | MAX | MIN | MAX |
| A | 0.086 | 0.094 | 2.18 | 2.38 |
| A1 | 0.000 | 0.005 | 0.00 | 0.13 |
| b | 0.025 | 0.035 | 0.63 | 0.89 |
| b2 | 0.030 | 0.045 | 0.76 | 1.14 |
| b3 | 0.180 | 0.215 | 4.57 | 5.46 |
| c | 0.018 | 0.024 | 0.46 | 0.61 |
| c2 | 0.018 | 0.024 | 0.46 | 0.61 |
| D | 0.235 | 0.245 | 5.97 | 6.22 |
| E | 0.250 | 0.265 | 6.35 | 6.73 |
| e | 0.090 BSC | | 2.29 BSC | |
| H | 0.370 | 0.410 | 9.40 | 10.41 |
| L | 0.055 | 0.070 | 1.40 | 1.78 |
| L1 | 0.108 REF | | 2.74 REF | |
| L2 | 0.020 BSC | | 0.51 BSC | |
| L3 | 0.035 | 0.050 | 0.89 | 1.27 |
| L4 | −−− | 0.040 | −−− | 1.01 |
| 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.



**PUBLICATION ORDERING INFORMATION**

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