

MURD320

Preferred Device

SWITCHMODE™ Power Rectifier

DPAK Surface Mount Package

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

- Ultrafast 35 Nanosecond Recovery Time
- Low Forward Voltage Drop
- Low Leakage

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
- Shipped 75 units per plastic tube
- Available in 16 mm Tape and Reel, 2500 units per reel, by adding a "T4" suffix to the part number
- Marking: U320

MAXIMUM RATINGS

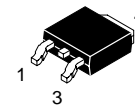
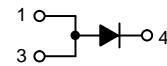
| Rating | Symbol | Value | Unit |
|---|---------------------------------|-------------|------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 200 | V |
| Average Rectified Forward Current (Rated V_R , $T_C = 158^\circ\text{C}$) | $I_{F(AV)}$ | 3.0 | A |
| Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 kHz, $T_C = 158^\circ\text{C}$) | I_{FRM} | 6.0 | A |
| Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, 60 Hz) | I_{FSM} | 75 | A |
| Operating Junction and Storage Temperature Range | T_J, T_{stg} | -65 to +175 | °C |



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<http://onsemi.com>

**ULTRAFAST
RECTIFIER
3.0 AMPERES
200 VOLTS**



DPAK
CASE 369A
PLASTIC

MARKING DIAGRAM



U320 = Device Code

ORDERING INFORMATION

| Device | Package | Shipping |
|-----------|---------|------------------|
| MURD320 | DPAK | 75 Units/Rail |
| MURD320T4 | DPAK | 2500/Tape & Reel |

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

MURD320

THERMAL CHARACTERISTICS

| Rating | Symbol | Value | Unit |
|--------------------------------------|-----------------|-------|---------------|
| Thermal Resistance, Junction to Case | $R_{\theta JC}$ | 6 | $^{\circ}C/W$ |
| Junction to Ambient (Note 1.) | $R_{\theta JA}$ | 80 | $^{\circ}C/W$ |

ELECTRICAL CHARACTERISTICS

| | | | |
|---|----------|--------------|---------|
| Maximum Instantaneous Forward Voltage Drop (Note 2.) ($i_F = 3$ Amps, $T_J = 25^{\circ}C$) ($i_F = 3$ Amps, $T_J = 125^{\circ}C$) | v_F | 0.95 0.75 | Volts |
| Maximum Instantaneous Reverse Current (Note 2.) ($T_J = 25^{\circ}C$, Rated dc Voltage) ($T_J = 125^{\circ}C$, Rated dc Voltage) | i_R | 5 500 | μA |
| Maximum Reverse Recovery Time ($I_F = 1$ Amp, $di/dt = 50$ Amps/ μs , $V_R = 30$ V, $T_J = 25^{\circ}C$) ($I_F = 0.5$ Amp, $i_R = 1$ Amp, $I_{REC} = 0.25$ A, $V_R = 30$ V, $T_J = 25^{\circ}C$) | t_{rr} | 35 25 | ns |

- Rating applies when surface mounted on the minimum pad sizes recommended.
- Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

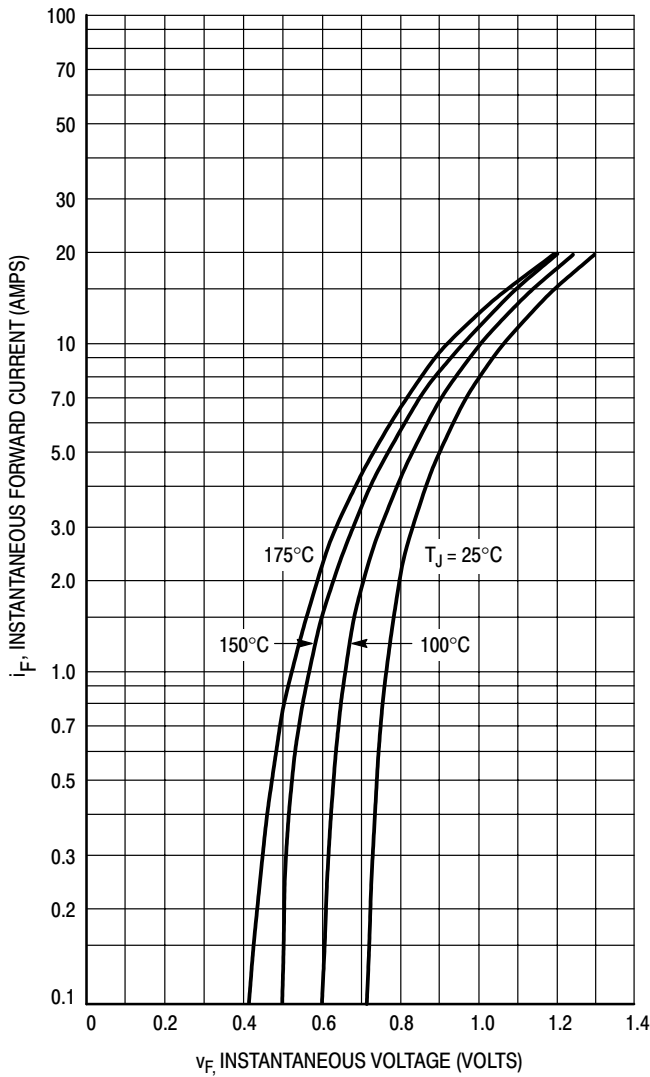


Figure 1. Typical Forward Voltage

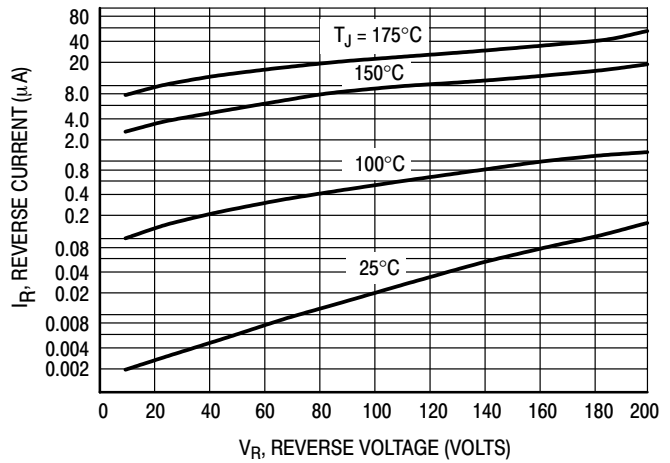


Figure 2. Typical Reverse Current*

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

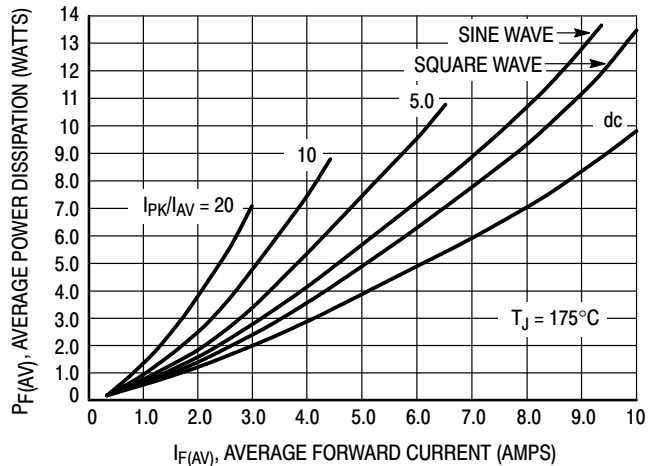


Figure 3. Average Power Dissipation

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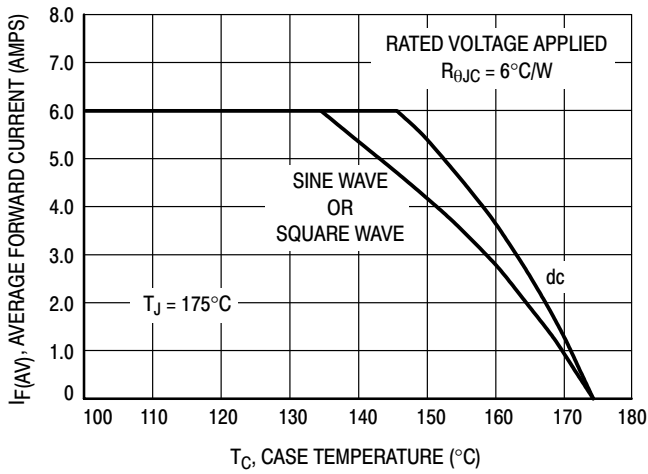


Figure 4. Current Derating, Case

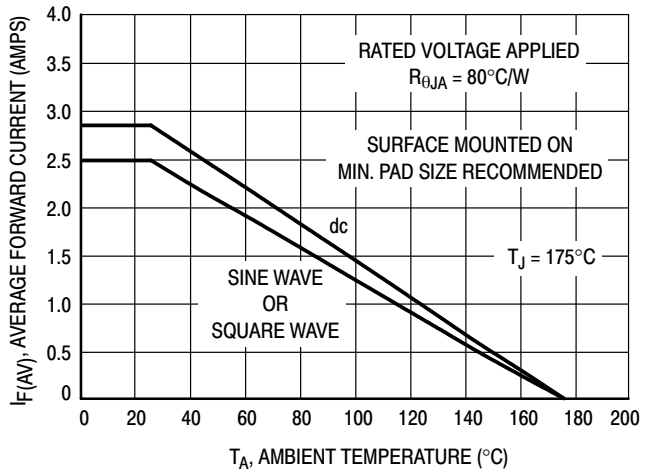


Figure 5. Current Derating, Ambient

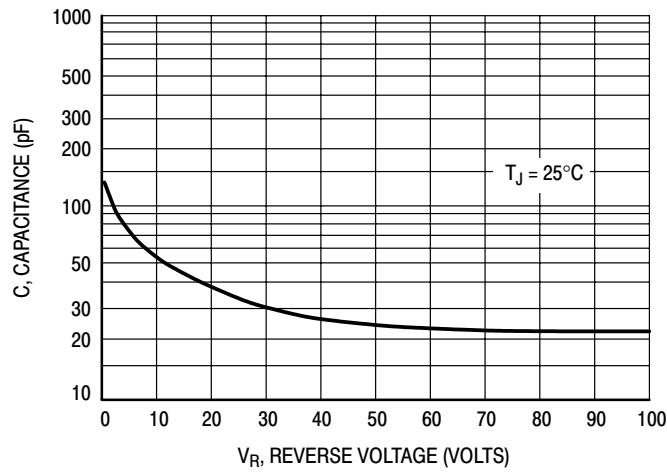
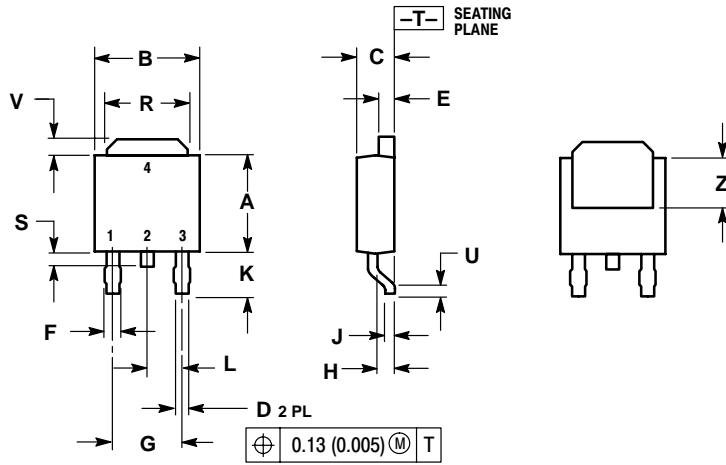


Figure 6. Typical Capacitance

MURD320

PACKAGE DIMENSIONS

DPAK
CASE 369A-13
ISSUE AA




NOTES:

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

| DIM | INCHES | | MILLIMETERS | |
|-----|-----------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.235 | 0.250 | 5.97 | 6.35 |
| 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 | 0.033 | 0.040 | 0.84 | 1.01 |
| F | 0.037 | 0.047 | 0.94 | 1.19 |
| 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 | 0.175 | 0.215 | 4.45 | 5.46 |
| S | 0.020 | 0.050 | 0.51 | 1.27 |
| U | 0.020 | --- | 0.51 | --- |
| V | 0.030 | 0.050 | 0.77 | 1.27 |
| Z | 0.138 | --- | 3.51 | --- |

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