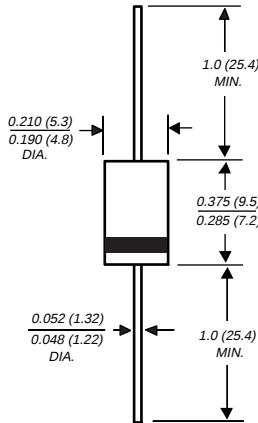


# UG4A THRU UG4D

## ULTRAFAST EFFICIENT PLASTIC RECTIFIER

**Reverse Voltage - 50 to 200 Volts    Forward Current - 4.0 Amperes**

### DO-201AD



Dimensions in inches and (millimeters)

### FEATURES

- ♦ Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- ♦ Ideally suited for use in very high frequency switching power supplies, inverters and as free wheeling diodes
- ♦ Ultrafast recovery time for high efficiency
- ♦ Soft recovery characteristics
- ♦ Excellent high temperature switching
- ♦ Glass passivated junction
- ♦ High temperature soldering guaranteed: 250°C/10 seconds, 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

### MECHANICAL DATA

**Case:** JEDEC DO-201AD molded plastic body over passivated chip

**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.045 ounce, 1.2 grams

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

|                                                                                                                                 | SYMBOLS                           | UG4A         | UG4B | UG4C | UG4D | UNITS |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------|------|------|------|-------|
| Maximum repetitive peak reverse voltage                                                                                         | V <sub>RRM</sub>                  | 50           | 100  | 150  | 200  | Volts |
| Maximum RMS voltage                                                                                                             | V <sub>RMS</sub>                  | 35           | 70   | 105  | 140  | Volts |
| Maximum DC blocking voltage                                                                                                     | V <sub>DC</sub>                   | 50           | 100  | 150  | 200  | Volts |
| Maximum average forward rectified current<br>0.375" (9.5mm) lead length at T <sub>L</sub> =75°C                                 | I <sub>(AV)</sub>                 | 4.0          |      |      |      | Amps  |
| Peak forward surge current<br>8.3 ms single half sine-wave superimposed<br>on rated load (JEDEC Method) at T <sub>L</sub> =75°C | I <sub>FSM</sub>                  | 150.0        |      |      |      | Amps  |
| Maximum instantaneous forward voltage at 4.0A                                                                                   | V <sub>F</sub>                    | 0.95         |      |      |      | Volts |
| Maximum DC reverse current<br>at rated DC blocking voltage<br>T <sub>A</sub> =25°C<br>T <sub>A</sub> =100°C                     | I <sub>R</sub>                    | 5.0<br>300.0 |      |      |      | µA    |
| Maximum reverse recovery time (NOTE 1)                                                                                          | t <sub>rr</sub>                   | 20.0         |      |      |      | ns    |
| Maximum reverse recovery time<br>(NOTE 2)<br>T <sub>J</sub> =25°C<br>T <sub>J</sub> =100°C                                      | t <sub>rr</sub>                   | 30.0<br>50.0 |      |      |      | ns    |
| Maximum recovered stored charge<br>(NOTE 2)<br>T <sub>J</sub> =25°C<br>T <sub>J</sub> =100°C                                    | Q <sub>rr</sub>                   | 15.0<br>30.0 |      |      |      | nC    |
| Typical junction capacitance (NOTE 3)                                                                                           | C <sub>J</sub>                    | 20.0         |      |      |      | pF    |
| Typical thermal resistance (NOTE 4)                                                                                             | R <sub>θJA</sub>                  | 25.0         |      |      |      | °C/W  |
| Operating junction and storage temperature range                                                                                | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150  |      |      |      | °C    |

#### NOTES:

- (1) Reverse recovery test conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>rr</sub>=0.25A
- (2) t<sub>rr</sub> and Q<sub>RR</sub> measured at tester: I<sub>F</sub>=4.0A, V<sub>R</sub>=30V, di/dt=50A/µs, I<sub>rr</sub>=10% I<sub>RM</sub> for measurement of t<sub>rr</sub>
- (3) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
- (4) Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length

# RATINGS AND CHARACTERISTIC CURVES UG4A THRU UG4D

FIG. 1 - FORWARD CURRENT DERATING CURVE

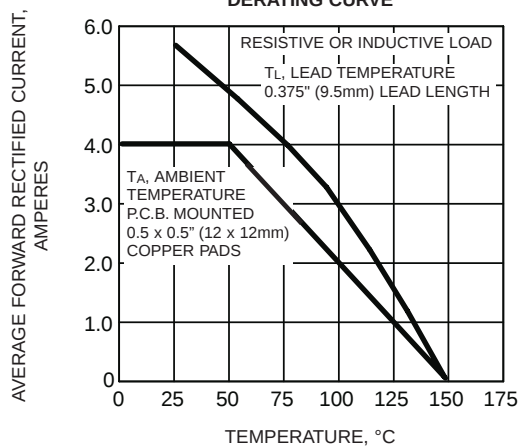


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

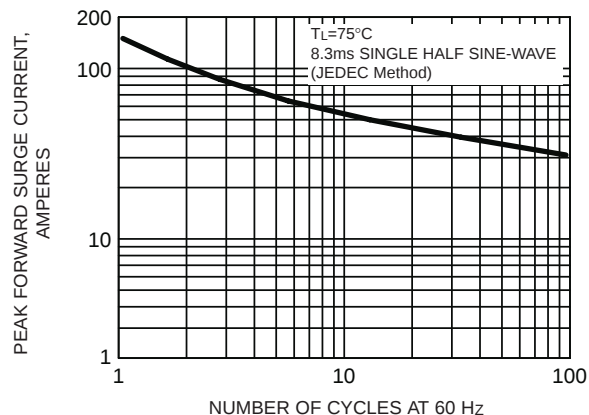


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

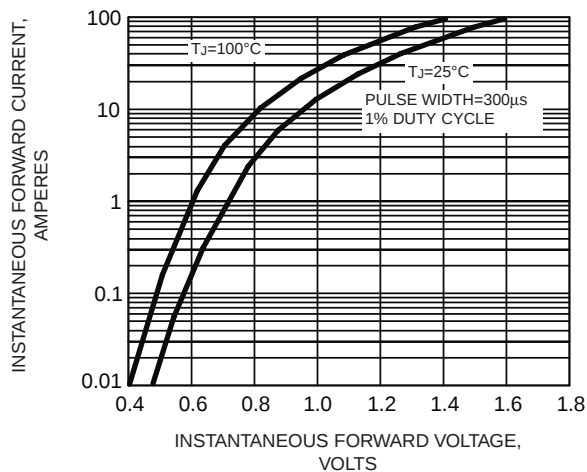


FIG. 4 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS

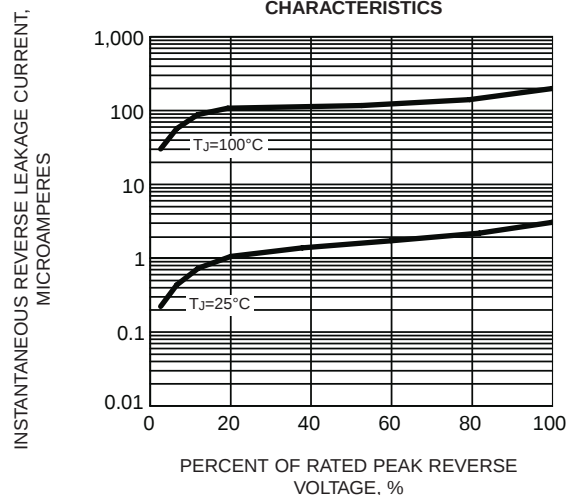


FIG. 5 - REVERSE SWITCHING CHARACTERISTICS

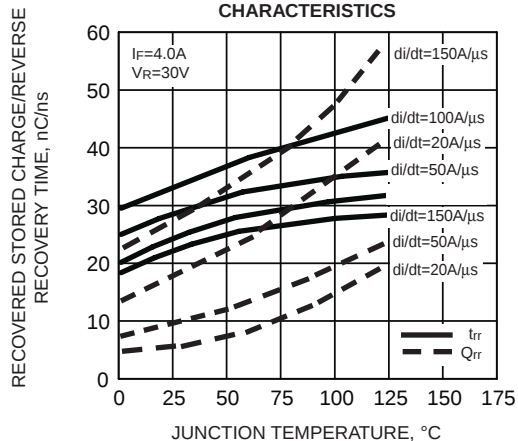


FIG. 6 - TYPICAL JUNCTION CAPACITANCE

