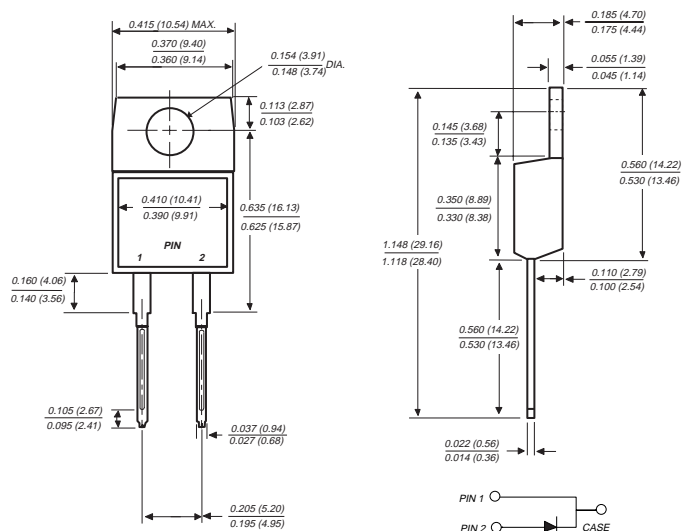


# UG8AT THRU UG8DT

## ULTRAFAST EFFICIENT PLASTIC RECTIFIER

Reverse Voltage - 50 to 200 Volts      Forward Current - 8.0 Amperes

### TO-220AC



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 a free wheeling diode
- ◆ Ultrafast reverse recovery time for high efficiency
- ◆ Soft recovery characteristics
- ◆ Excellent high temperature switching
- ◆ Glass passivated chip junction
- ◆ High temperature soldering guaranteed: 250°C, 0.16" (4.06) from case for 10 seconds



### MECHANICAL DATA

**Case:** JEDEC TO-220AC molded plastic body over passivated chip

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

**Polarity:** As marked

**Mounting Position:** Any

**Mounting Torque:** 5in. - lbs. max.

**Weight:** 0.064 ounce, 1.81 grams

### MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

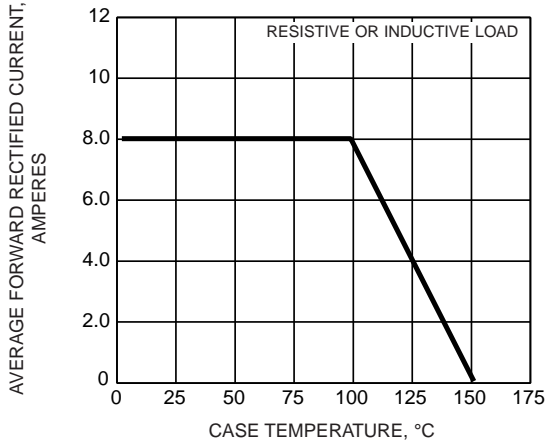
|  | SYMBOLS                           | UG8AT                | UG8BT | UG8CT | UG8DT | UNITS |
|--|-----------------------------------|----------------------|-------|-------|-------|-------|
| Maximum repetitive peak reverse voltage  | V <sub>RRM</sub>                  | 50                   | 100   | 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 at T <sub>C</sub> =100°C   | I <sub>(AV)</sub>                 | 8.0                  |       |       |       | Amps  |
| Peak forward surge current<br>8.3 ms single half sine-wave superimposed<br>on rated load (JEDEC Method) at T <sub>C</sub> =100°C | I <sub>FSM</sub>                  | 150.0                |       |       |       | Amps  |
| Maximum instantaneous forward voltage at 8.0<br>20A<br>5.0A, T <sub>J</sub> =150°C   | V <sub>F</sub>                    | 1.00<br>1.20<br>0.95 |       |       |       | Volts |
| Maximum DC reverse current<br>at rated DC blocking voltage   | I <sub>R</sub>                    | 10.0<br>300.0        |       |       |       | μA    |
| Maximum reverse recovery time (NOTE 1)   | t <sub>rr</sub>                   | 20.0                 |       |       |       | ns    |
| Maximum reverse recovery time<br>(NOTE 2)  | t <sub>rr</sub>                   | 30.0<br>50.0         |       |       |       | ns    |
| Maximum recovered stored charge<br>(NOTE 2)  | Q <sub>rr</sub>                   | 20.0<br>45.0         |       |       |       | nC    |
| Typical junction capacitance (NOTE 3)  | C <sub>J</sub>                    | 45.0                 |       |       |       | pF    |
| Typical thermal resistance (NOTE 4)  | R <sub>θJC</sub>                  | 4.0                  |       |       |       | °C/W  |
| Operating junction and storage temperature range   | T <sub>J</sub> , T <sub>STG</sub> | -55 to+150           |       |       |       | °C    |

#### NOTES:

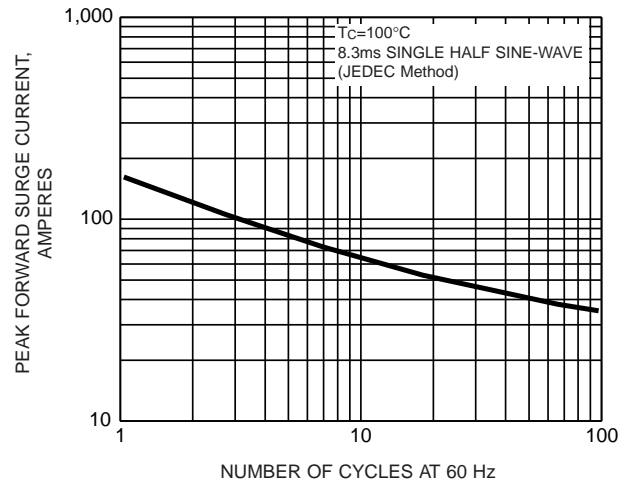
- (1) Reverse recovery test conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>rr</sub>=0.25A
- (2) t<sub>rr</sub> and Q<sub>rr</sub> measured at I<sub>F</sub>=8.0A, V<sub>R</sub>=30V, di/dt=50A/μs, I<sub>rr</sub>=10% I<sub>RM</sub> for measurement of t<sub>rr</sub>
- (3) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts
- (4) Thermal resistance from junction to case

# RATINGS AND CHARACTERISTIC CURVES UG8AT THRU UG8DT

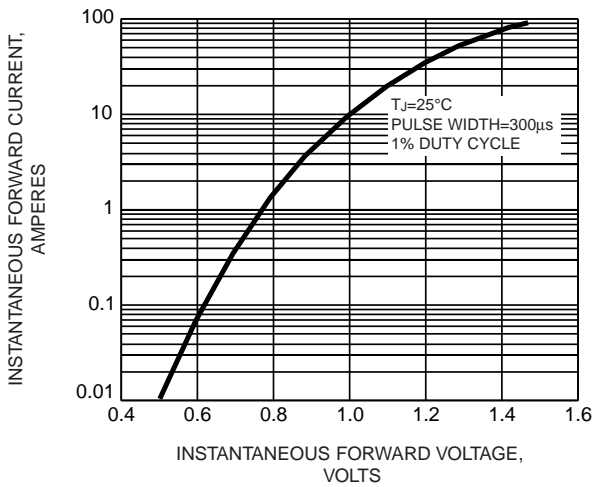
**FIG. 1 - FORWARD CURRENT DERATING CURVE**



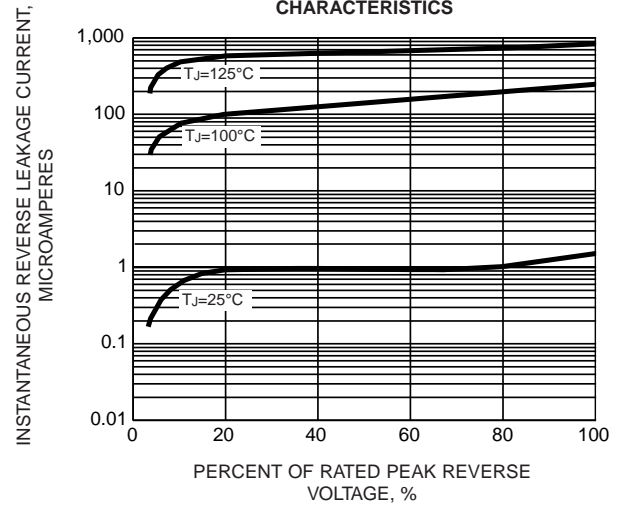
**FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



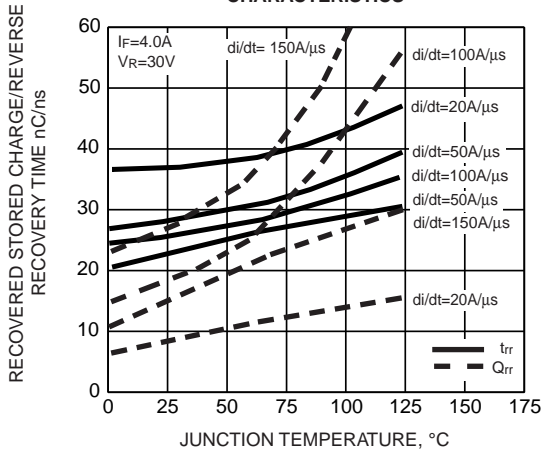
**FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS**



**FIG. 4 - TYPICAL REVERSE CHARACTERISTICS**



**FIG. 5 - REVERSE SWITCHING CHARACTERISTICS**



**FIG. 6 - TYPICAL JUNCTION CAPACITANCE**

