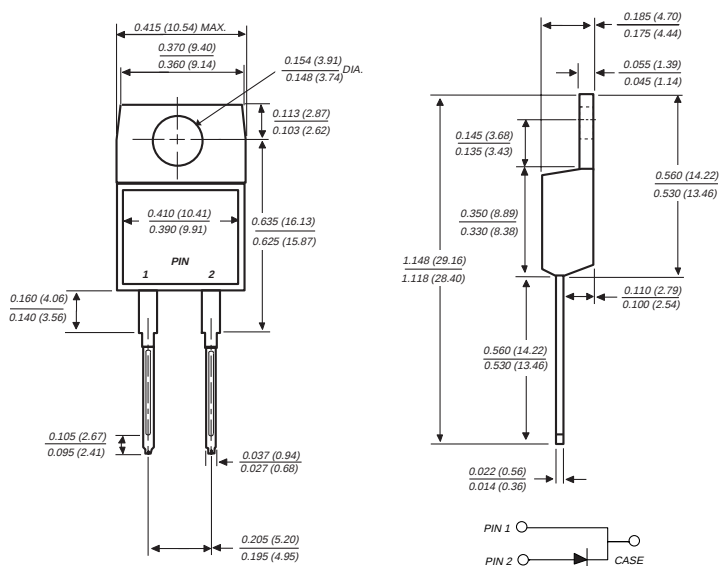


# UG8FT AND UG8GT

## ULTRAFAST SOFT RECOVERY RECTIFIER

**Reverse Voltage - 300 to 400 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 freewheeling diode power factor correction applications
- ◆ Soft recovery characteristics
- ◆ Excellent high temperature switching
- ◆ Optimized to reduce switching losses
- ◆ High temperature soldering in accordance with CECC 802 / Reflow guaranteed
- ◆ Glass passivated chip junction



### MECHANICAL DATA

**Case:** JEDEC TO-220AC molded plastic body

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

**Polarity:** As marked

**Mounting Position:** Any

**Weight:** 0.08 ounce, 2.24 grams

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

|                                                                                                                                        | SYMBOLS         | UG8FT        | UG8GT | UNITS                     |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------|-------|---------------------------|
| Maximum repetitive peak reverse voltage                                                                                                | $V_{RRM}$       | 300          | 400   | Volts                     |
| Working peak reverse voltage                                                                                                           | $V_{RWM}$       | 225          | 300   | Volts                     |
| Maximum RMS voltage                                                                                                                    | $V_{RMS}$       | 210          | 280   | Volts                     |
| Maximum DC blocking voltage                                                                                                            | $V_{DC}$        | 300          | 400   | Volts                     |
| Maximum average forward rectified current at $T_C=100^\circ\text{C}$                                                                   | $I_{(AV)}$      | 8.0          |       | Amps                      |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed<br>on rated load (JEDEC Method)                                 | $I_{FSM}$       | 100.0        |       | Amps                      |
| Maximum instantaneous forward voltage at $I_F=8\text{A}$ (NOTE 1)<br>$T_J=25^\circ\text{C}$<br>$T_J=150^\circ\text{C}$                 | $V_F$           | 1.30<br>1.00 |       | Volts                     |
| Maximum reverse leakage current<br>at working peak reverse voltage<br>$T_C=25^\circ\text{C}$<br>$T_C=100^\circ\text{C}$                | $I_R$           | 10<br>350    |       | $\mu\text{A}$             |
| Maximum reverse recovery time at $I_F=0.5\text{A}$ , $I_R=1.0\text{A}$ , $I_{rr}=0.25\text{A}$                                         | $t_{rr}$        | 35           |       | ns                        |
| Maximum Reverse recovery time at<br>$I_F=1.0\text{A}$ , $di/dt=100\text{A}/\mu\text{s}$ , $V_R=30\text{V}$ , $I_{rr}=0.1 I_{RM}$       | $t_{rr}$        | 50           |       | ns                        |
| Maximum reverse recovery current at<br>$I_F=10\text{A}$ , $di/dt=50\text{A}/\mu\text{s}$ , $V_R=30\text{V}$<br>$T_C=100^\circ\text{C}$ | $I_{RM}$        | 5.5          |       | Amps                      |
| Maximum stored charge<br>$I_F=2\text{A}$ , $di/dt=20\text{A}/\mu\text{s}$ , $V_R=30\text{V}$ , $I_{rr}=0.1 I_{RM}$                     | $Q_{rr}$        | 55           |       | nC                        |
| Typical thermal resistance from junction to case                                                                                       | $R_{\theta JC}$ | 2.2          |       | $^\circ\text{C}/\text{W}$ |
| Operating junction and storage temperature range                                                                                       | $T_J, T_{STG}$  | -40 to +150  |       | $^\circ\text{C}$          |

**NOTE:** (1) Pulse test: 300 $\mu\text{s}$  pulse width, 1% duty cycle

**NOTICE:** Advanced product information is subject to change without notice

# RATINGS AND CHARACTERISTIC CURVES UG8FT AND UG8GT

FIG. 1 - FORWARD CURRENT DERATING CURVE

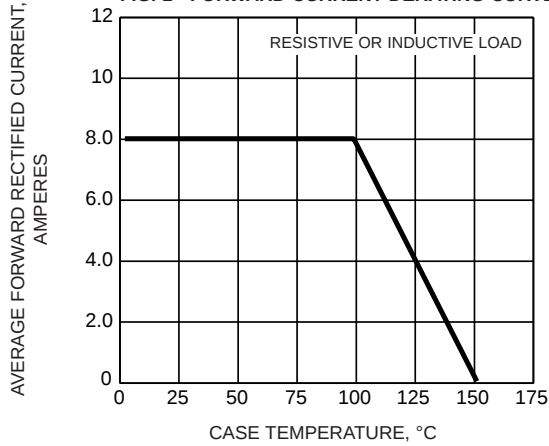


FIG. 2 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

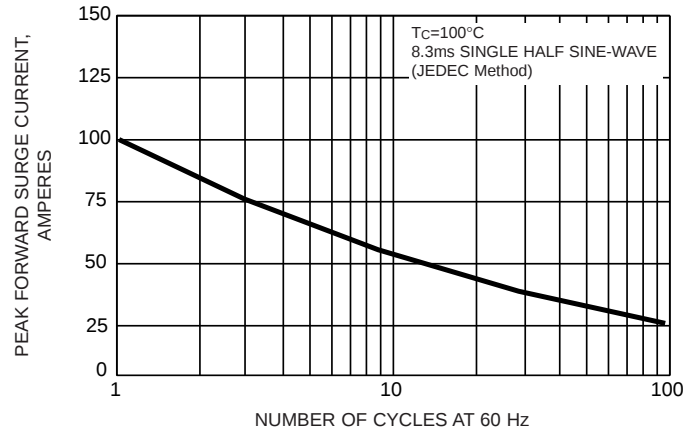


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

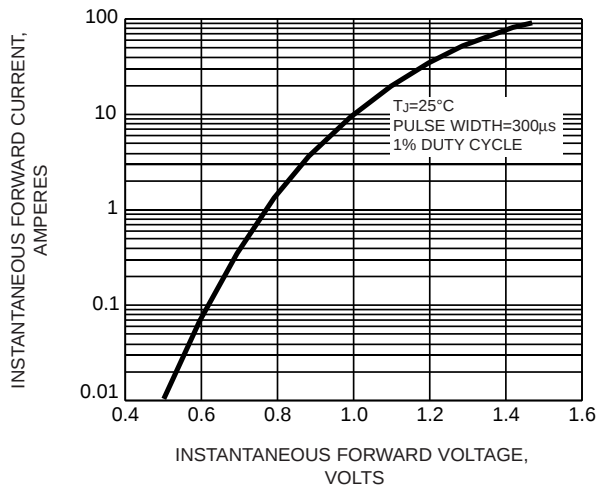


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

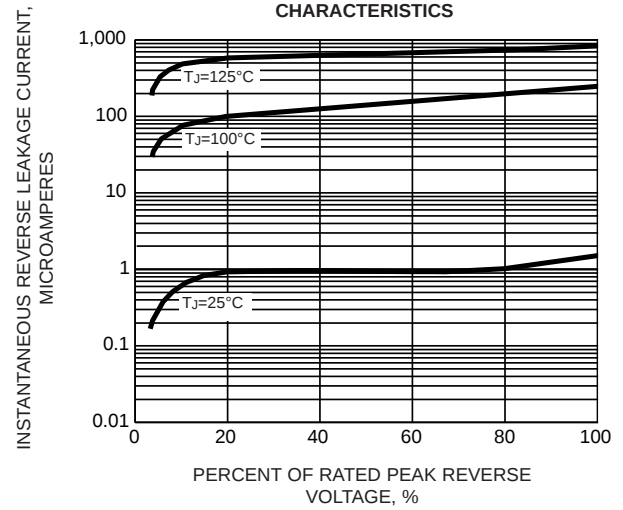


FIG. 5 - REVERSE SWITCHING CHARACTERISTICS

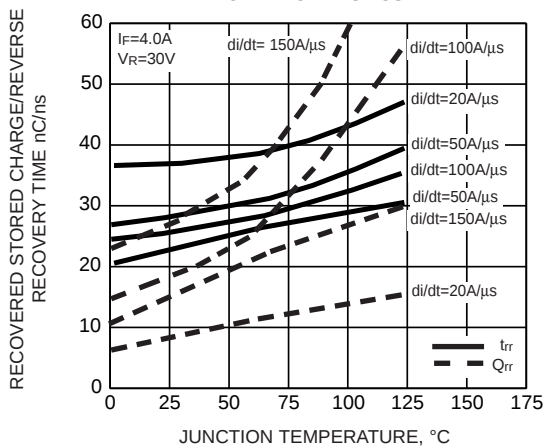


FIG. 6 - TYPICAL JUNCTION CAPACITANCE

