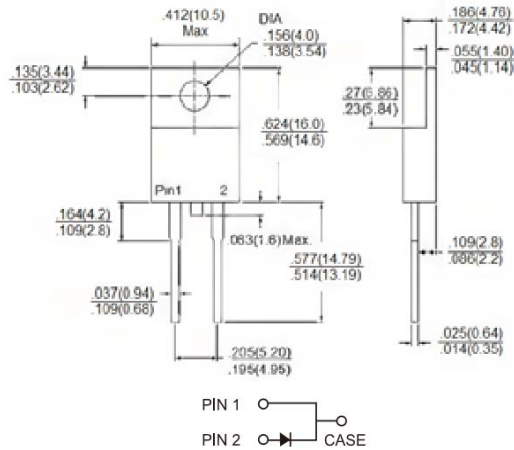



**TO-220AC**
**Features**

- ◇ High efficiency, low VF
- ◇ High current capability
- ◇ High reliability
- ◇ High surge current capability
- ◇ Low power loss
- ◇ For use in low voltage, high frequency inverter, Free wheeling, and polarity protection application
- ◇ Green compound with suffix "G" on packing code & prefix "G" on datecode


**Mechanical Data**

- ◇ Case: TO-220AC
- ◇ Epoxy: UL 94V-0 rate flame retardant
- ◇ Terminals: Pure tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
- ◇ Polarity: As marked
- ◇ High temperature soldering: 260°C/10 seconds/ 0.16", (4.06mm) from case
- ◇ Weight: 2.24 grams

**Dimensions in inches and (millimeters)**
**Marking Diagram**


- UGXJ = Specific Device Code
- G = Green Compound
- Y = Year
- WW = Work Week

**Maximum Ratings and Electrical Characteristics**

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

Type Number	Symbol	UG8J	Unit
Maximum Repetitive Peak Reverse Voltage	$V_{RRM}$	600	V
Maximum RMS Voltage	$V_{RMS}$	420	V
Maximum DC Blocking Voltage	$V_{DC}$	600	V
Maximum Average Forward Rectified Current	$I_{F(AV)}$	8	A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	$I_{FSM}$	65	A
Maximum Instantaneous Forward Voltage (Note 1) @ 8 A / $T_A=25^\circ\text{C}$ @ 8 A / $T_A=125^\circ\text{C}$	$V_F$	2.9 2.0	V
Maximum DC Reverse Current at Rated DC Blocking Voltage $T_A=25^\circ\text{C}$ $T_A=125^\circ\text{C}$	$I_R$	30 200	$\mu\text{A}$
Maximum Reverse Recovery Time (Note 2)	$T_{rr}$	25	nS
Maximum Reverse Recovery Time (Note 3)	$T_{rr}$	50	nS
Typical Thermal Resistance	$R_{\theta JC}$	3	$^\circ\text{C/W}$
Operating Temperature Range	$T_J$	- 55 to + 150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	- 55 to + 150	$^\circ\text{C}$

Note 1: Pulse Test with PW=300 usec, 1% Duty Cycle

Note 2: Reverse Recovery Test Conditions:  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$

Note 3: Reverse Recovery Test Conditions:  $I_F=1.0\text{A}$ ,  $di/dt=50\text{A/us}$ ,  $V_R=30\text{V}$ ,  $I_{RR}=0.1\text{RM}$

## RATINGS AND CHARACTERISTIC CURVES (UG8J)

FIG.1 FORWARD CURRENT DERATING CURVE

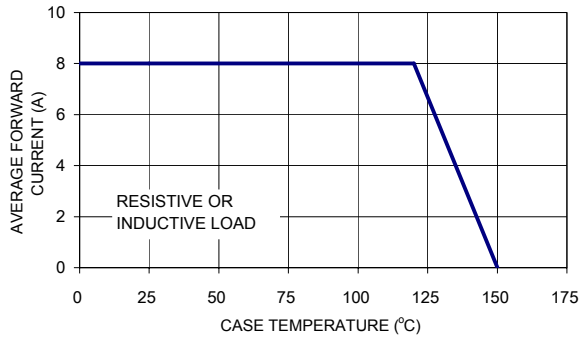


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

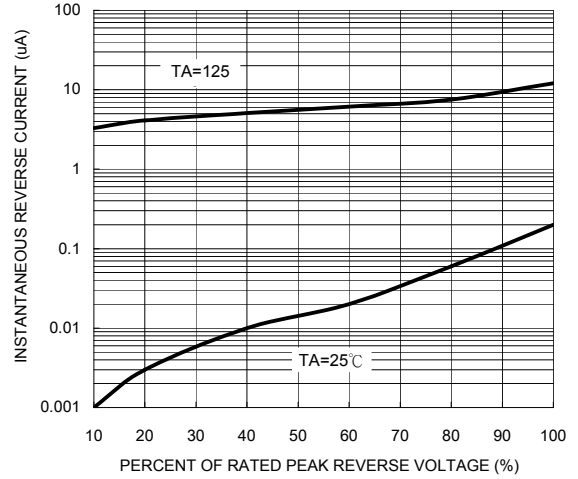


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

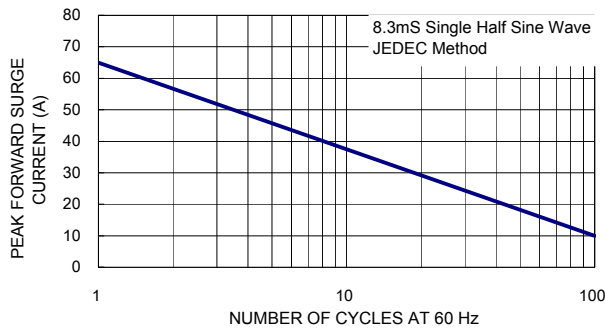


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

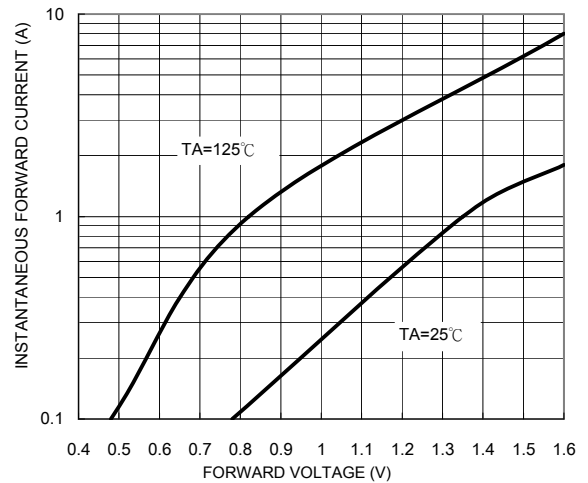


FIG. 5 TYPICAL JUNCTION CAPACITANCE

