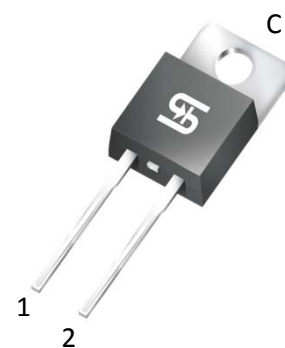


## 8A, 600V Ultra Fast Rectifier

### FEATURES

- High efficiency, low VF
- High current capability
- High reliability
- High surge current capability
- Low power loss
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



TO-220AC



### MECHANICAL DATA

**Case:** TO-220AC

Molding compound, UL flammability classification rating 94V-0

Part no. with suffix "H" means AEC-Q101 qualified

Packing code with suffix "G" means green compound (halogen-free)

**Terminal:** Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 2 whisker test

**Polarity:** As marked

**Mounting torque:** 0.56 Nm max.

**Weight:** 1.8 g (approximately)



| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> =25°C unless otherwise noted)                                              |                    |              |      |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------|------|
| PARAMETER                                                                                                                                 | SYMBOL             | UG8J         | UNIT |
| Maximum repetitive peak reverse voltage                                                                                                   | V <sub>RRM</sub>   | 600          | V    |
| Maximum RMS voltage                                                                                                                       | V <sub>RMS</sub>   | 420          | V    |
| Maximum DC blocking voltage                                                                                                               | V <sub>DC</sub>    | 600          | V    |
| Maximum average forward rectified current                                                                                                 | I <sub>F(AV)</sub> | 8            | A    |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load                                                       | I <sub>FSM</sub>   | 65           | A    |
| Maximum instantaneous forward voltage (Note 1)<br>I <sub>F</sub> =8 A, T <sub>J</sub> =25°C<br>I <sub>F</sub> =8 A, T <sub>J</sub> =125°C | V <sub>F</sub>     | 2.9<br>2.0   | V    |
| Maximum reverse current @ rated V <sub>R</sub><br>T <sub>J</sub> =25°C<br>T <sub>J</sub> =125°C                                           | I <sub>R</sub>     | 30<br>200    | μA   |
| Maximum reverse recovery time (Note 2)                                                                                                    | t <sub>rr</sub>    | 25           | ns   |
| Typical thermal resistance                                                                                                                | R <sub>θJC</sub>   | 3            | °C/W |
| Operating junction temperature range                                                                                                      | T <sub>J</sub>     | - 55 to +150 | °C   |
| Storage temperature range                                                                                                                 | T <sub>STG</sub>   | - 55 to +150 | °C   |

Note 1: Pulse test with PW=300μs, 1% duty cycle

Note 2: Reverse recovery test conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

## ORDERING INFORMATION

| PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX (*) | PACKAGE  | PACKING   |
|----------|-----------------|--------------|-------------------------|----------|-----------|
| UG8J     | H               | C0           | G                       | TO-220AC | 50 / Tube |

\*: Optional available

## EXAMPLE

| EXAMPLE P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION                       |
|-------------|----------|-----------------|--------------|---------------------|-----------------------------------|
| UG8JHC0G    | UG8J     | H               | C0           | G                   | AEC-Q101 qualified Green compound |

## RATINGS AND CHARACTERISTICS CURVES

( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

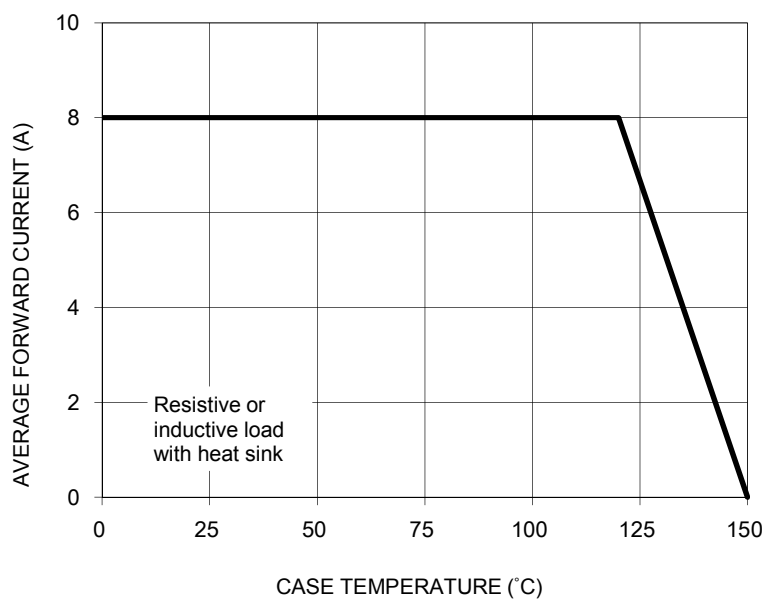


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

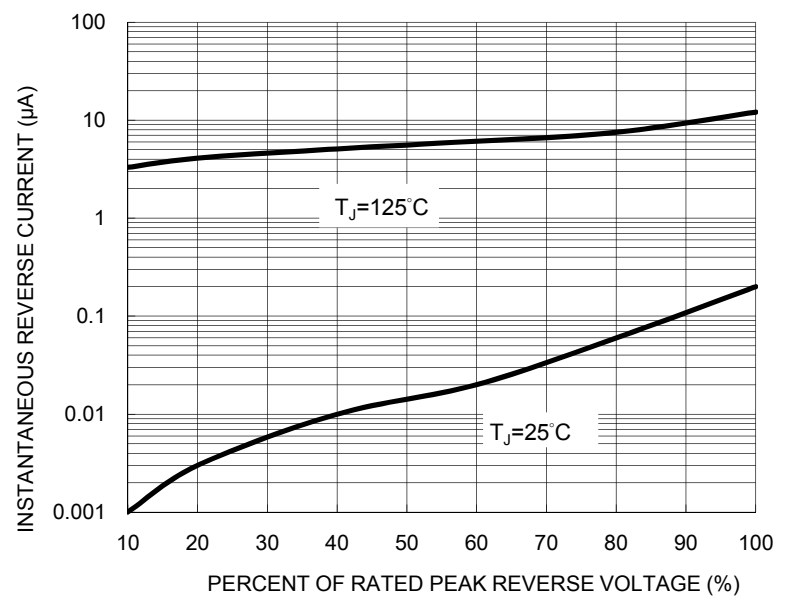


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

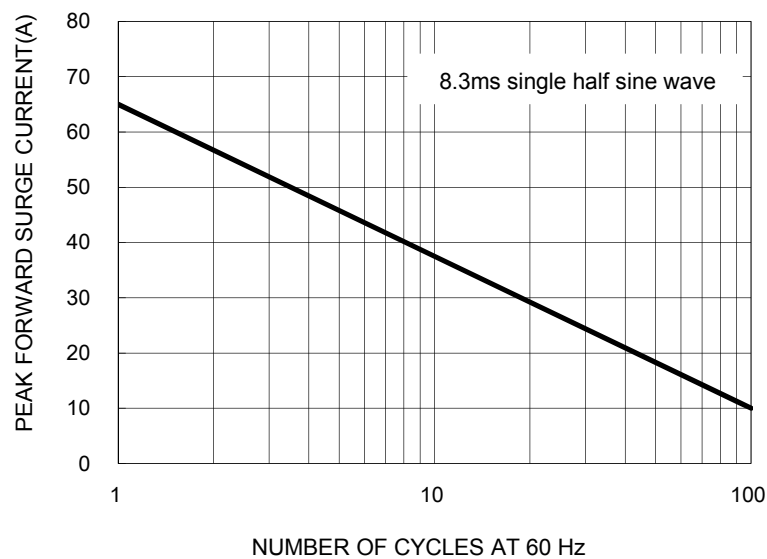


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

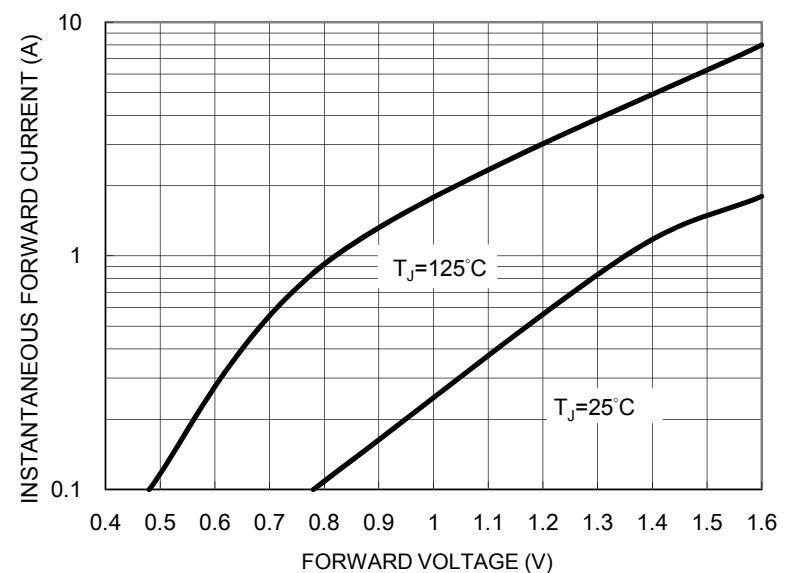


FIG. 5 TYPICAL JUNCTION CAPACITANCE

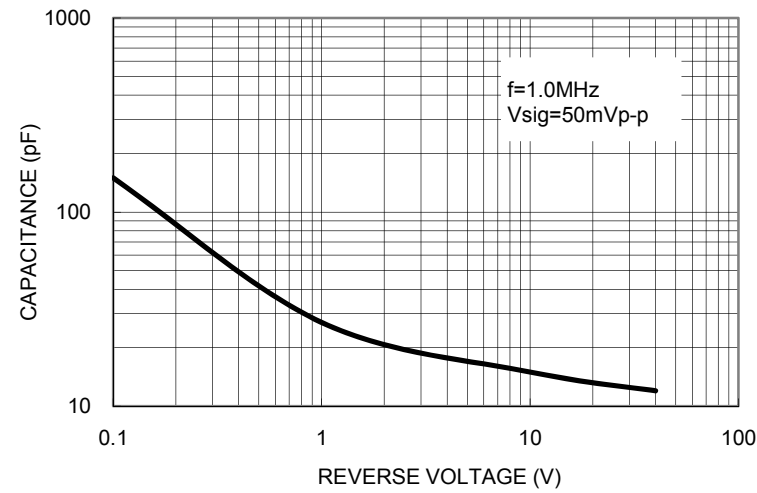
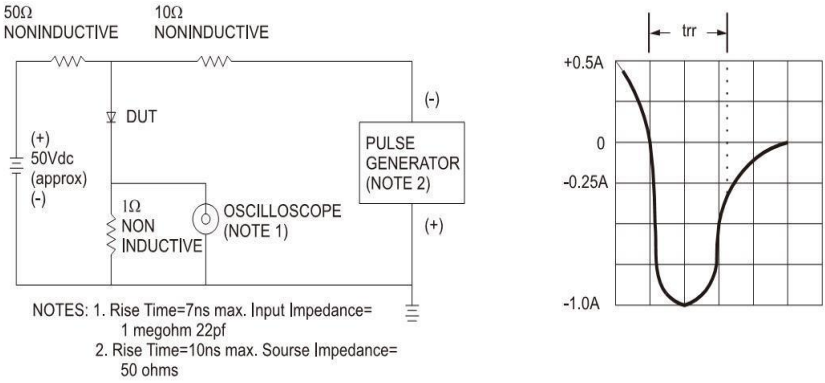
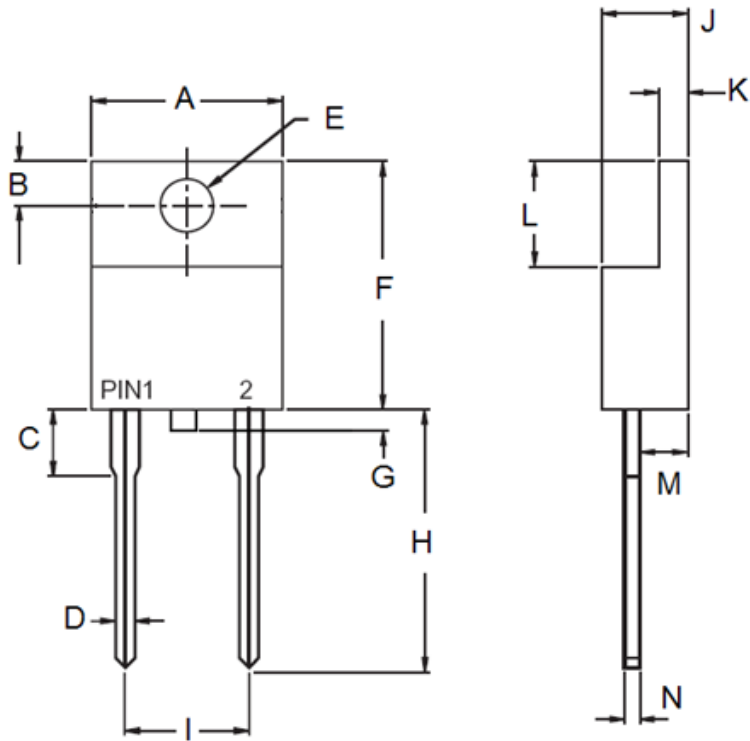


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



**PACKAGE OUTLINE DIMENSIONS**  
**TO-220AC**



| DIM. | Unit (mm) |       | Unit (inch) |       |
|------|-----------|-------|-------------|-------|
|      | Min       | Max   | Min         | Max   |
| A    | -         | 10.50 | -           | 0.413 |
| B    | 2.62      | 3.44  | 0.103       | 0.135 |
| C    | 2.80      | 4.20  | 0.110       | 0.165 |
| D    | 0.68      | 0.94  | 0.027       | 0.037 |
| E    | 3.54      | 4.00  | 0.139       | 0.157 |
| F    | 14.60     | 16.00 | 0.575       | 0.630 |
| G    | 0.00      | 1.60  | 0.000       | 0.063 |
| H    | 13.19     | 14.79 | 0.519       | 0.582 |
| I    | 4.95      | 5.20  | 0.195       | 0.205 |
| J    | 4.42      | 4.76  | 0.174       | 0.187 |
| K    | 1.14      | 1.40  | 0.045       | 0.055 |
| L    | 5.84      | 6.86  | 0.230       | 0.270 |
| M    | 2.20      | 2.80  | 0.087       | 0.110 |
| N    | 0.35      | 0.64  | 0.014       | 0.025 |

**MARKING DIAGRAM**



P/N = Marking Code  
G = Green Compound  
YWW = Date Code  
F = Factory Code

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