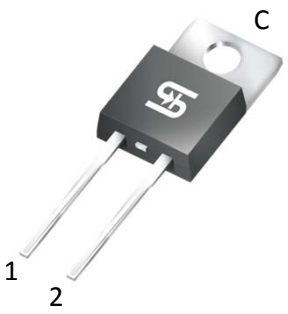
# 10A, 400V - 600V High Voltage UltraFast Rectifiers

## FEATURES

- High forward surge capability
- High reliability
- Ultra fast recovery time
- 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:** 5 in-lbs maximum

**Weight:** 1.8 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ($T_A$=25°C unless otherwise noted) | | | | |
|---|---|---|---|---|
| PARAMETER | SYMBOL | UG10G | UG10J | UNIT |
| Maximum repetitive peak reverse voltage | $V_{RRM}$ | 400 | 600 | V |
| Maximum RMS voltage | $V_{RMS}$ | 280 | 420 | V |
| Maximum DC blocking voltage | $V_{DC}$ | 400 | 600 | V |
| Maximum average forward rectified current | $I_{F(AV)}$ | 10 | | A |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$ | 90 | | A |
| Maximum instantaneous forward voltage (Note 1) $I_F$=10 A | $V_F$ | 1.25 | 2.00 | V |
| Maximum reverse current @ rated $V_R$ $T_J$=25°C | $I_R$ | 10 | 30 | μA |
| Maximum reverse current @ rated $V_R$ $T_J$=125°C | $I_R$ | 100 | 200 | μA |
| Maximum reverse recovery time (Note 2) | $t_{rr}$ | 25 | | ns |
| Typical thermal resistance (Note 3) | $R_{\theta JC}$ | 3 | | °C/W |
| Operating junction temperature range | $T_J$ | - 55 to +175 | - 55 to +150 | °C |
| Storage temperature range | $T_{STG}$ | - 55 to +175 | - 55 to +150 | °C |

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

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

Note 3: Mount on Heatsink size of 4" x 6" x 0.25" Al-plate

| ORDERING INFORMATION | | | | | |
|---|---|---|---|---|---|
| PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX (*) | PACKAGE | PACKING |
| UG10x (Note 1) | H | C0 | G | TO-220AC | 50 / Tube |

Note 1: "x" defines voltage from 400V (UG10G) to 600V (UG10J)

*: Optional available

| EXAMPLE | | | | | |
|---|---|---|---|---|---|
| PREFERRED P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
| UG10GHC0G | UG10G | H | C0 | G | AEC-Q101 qualified Green compound |

## RATINGS AND CHARACTERISTICS CURVES

($T_A$=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

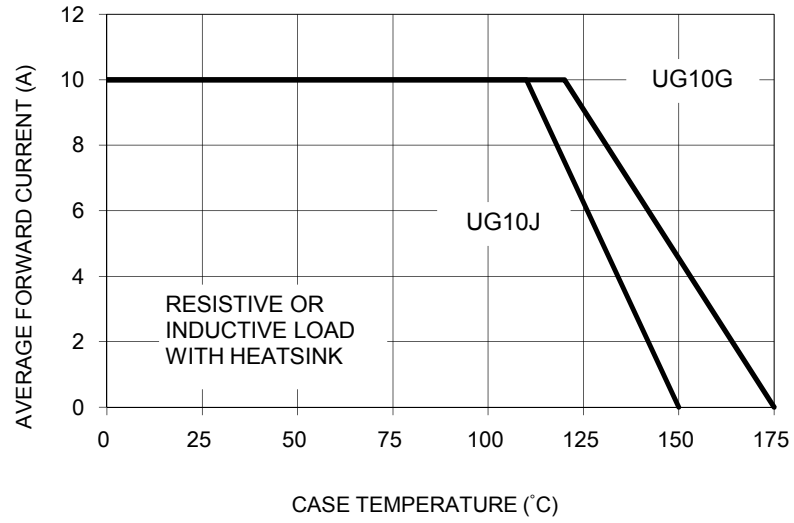



FIG. 2 TYPICAL REVERSE CHARACTERISTICS

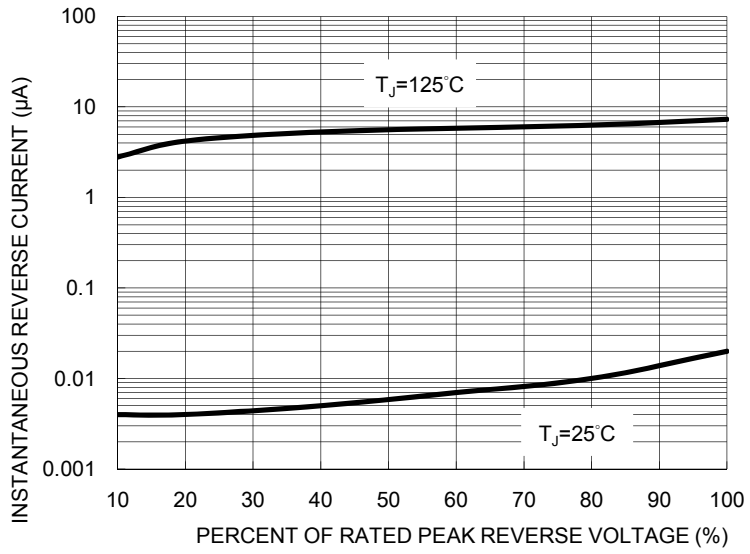



FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

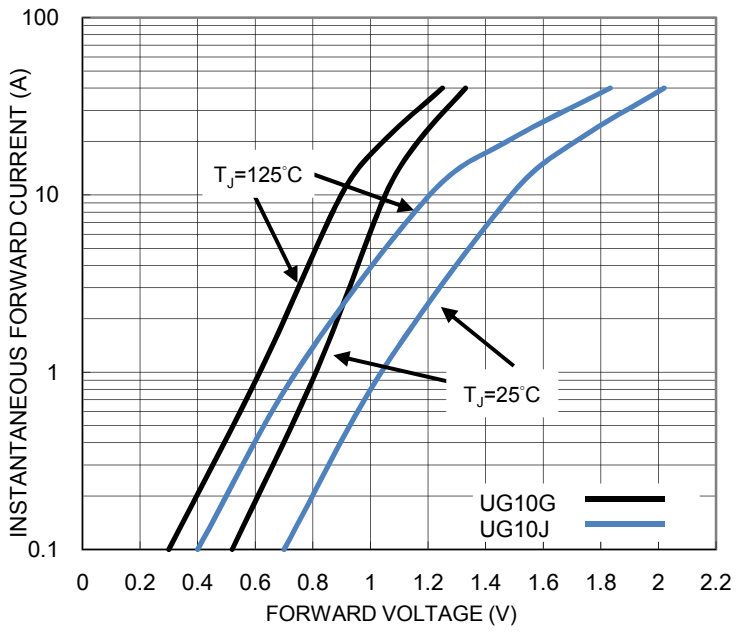
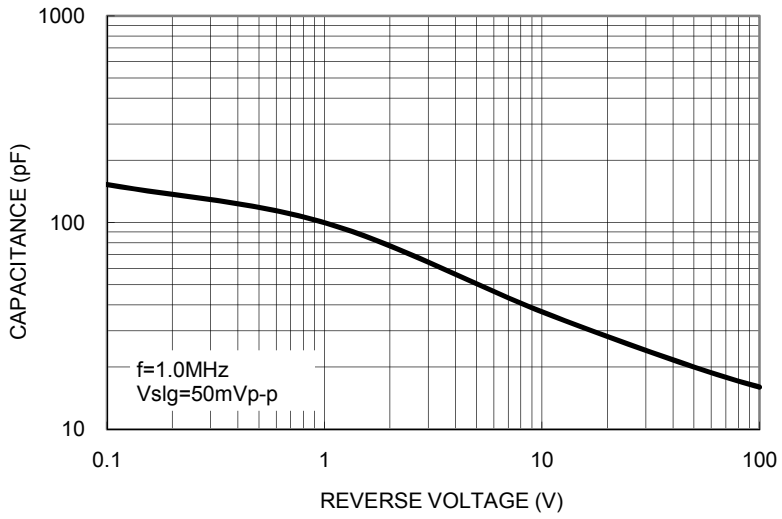
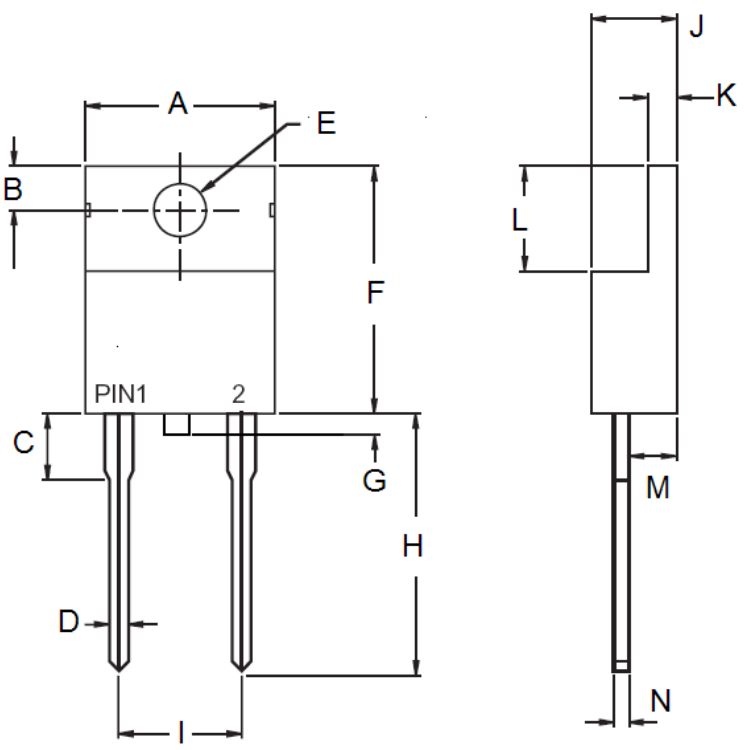


FIG. 5 TYPICAL JUNCTION CAPACITANCE




## 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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