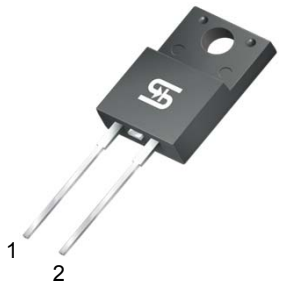
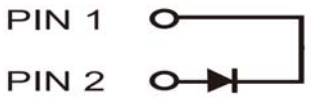
# 12A, 600V Isolated Ultra Fast Rectifier

## FEATURES

- High efficiency, Low VF
- High surge current capability
- High current capability
- High reliability
- Low power loss
- UL Recognized File # E-326243
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21




**ITO-220AC**




Pb-Free

RoHS COMPLIANT

## MECHANICAL DATA

**Case:** ITO-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:** 1.7 g (approximately)

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ($T_A$=25°C unless otherwise noted)

| PARAMETER | SYMBOL | UGF12J | 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 | $I_{F(AV)}$ | 12 | A |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | $I_{FSM}$ | 135 | A |
| Maximum instantaneous forward voltage (Note 1) $I_F$= 12 A | $V_F$ | 2.0 | V |
| Maximum reverse current @ rated $V_R$ $T_J$=25°C | $I_R$ | 5 | μA |
| Maximum reverse current @ rated $V_R$ $T_J$=125°C | $I_R$ | 600 | μA |
| Maximum reverse recovery time (Note 2) | $t_{rr}$ | 20 | ns |
| Typical thermal resistance | $R_{\theta JC}$ | 4.5 | °C/W |
| Operating junction temperature range | $T_J$ | - 55 to +150 | °C |
| Storage temperature range | $T_{STG}$ | - 55 to +150 | °C |

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

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

| ORDERING INFORMATION | | | | | |
|---|---|---|---|---|---|
| PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX (*) | PACKAGE | PACKING |
| UGF12J | H | C0 | G | ITO-220AC | 50 / Tube |

*: Optional available

| EXAMPLE | | | | | |
|---|---|---|---|---|---|
| EXAMPLE P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
| UGF12JHC0G | UGF12J | 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

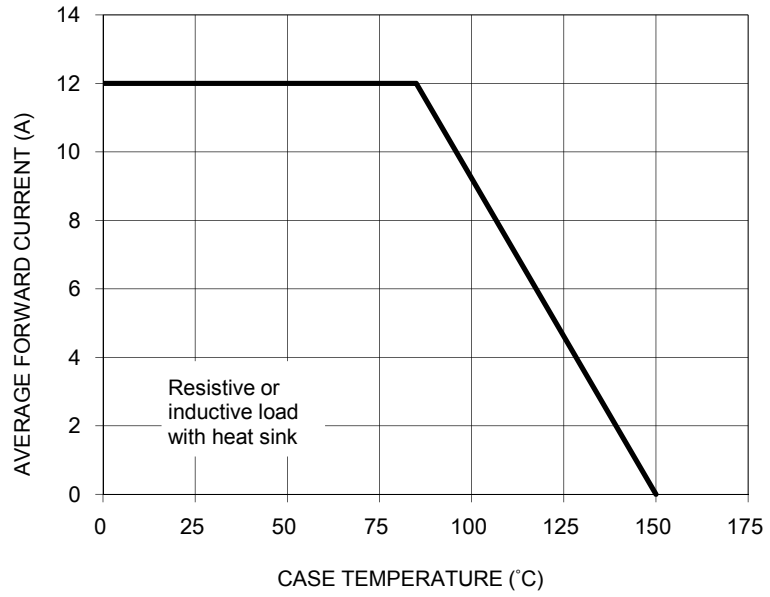



FIG. 2 TYPICAL REVERSE CHARACTERISTICS

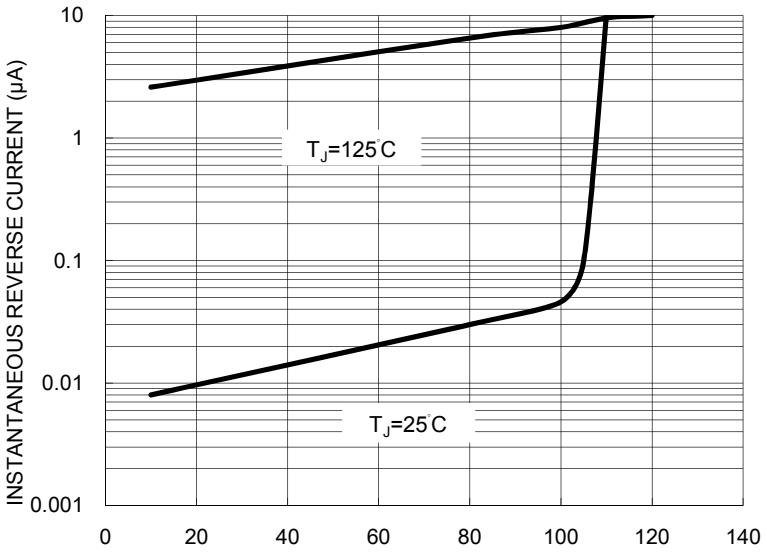



FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

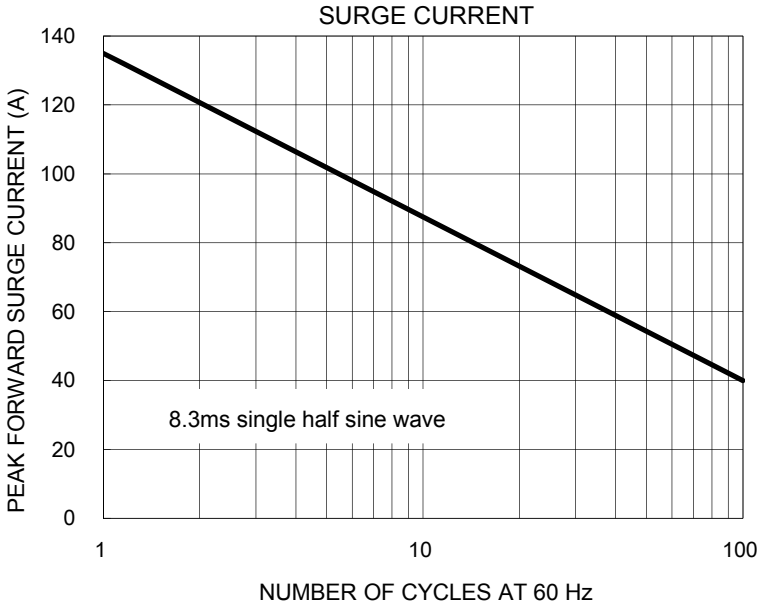



FIG. 4 TYPICAL FORWARD CHARACTERISTICS

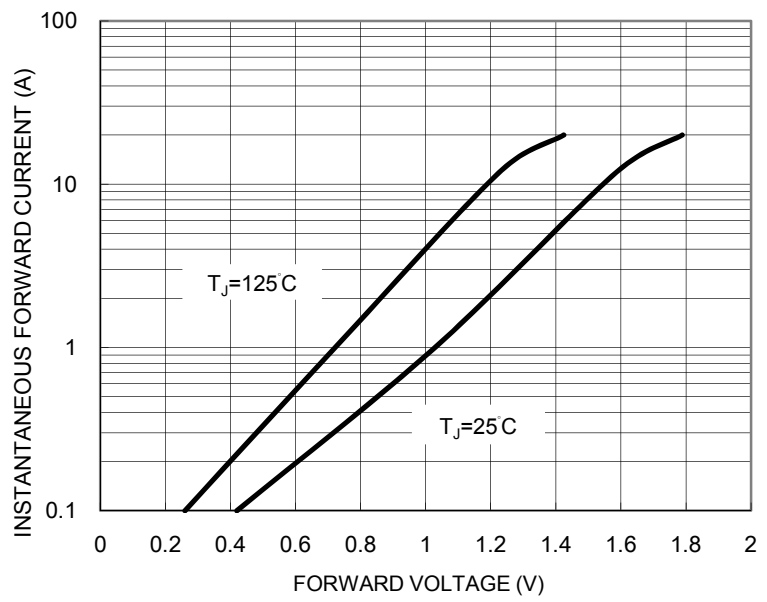
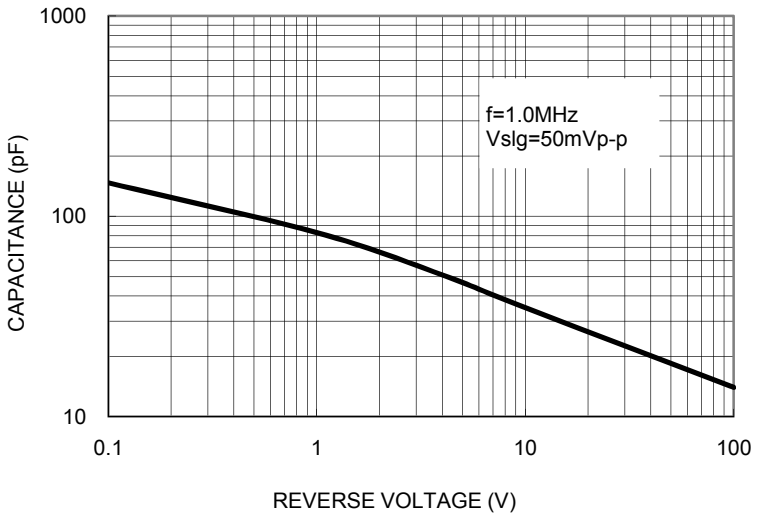
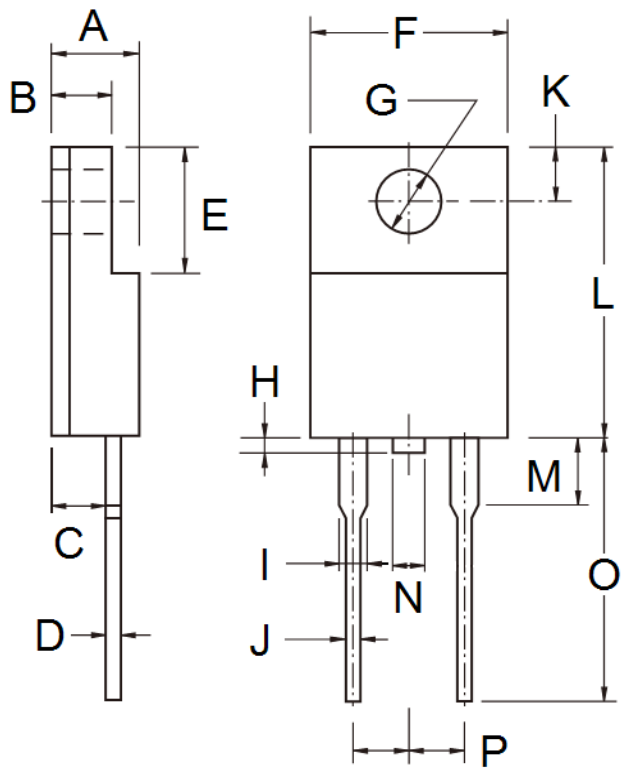


FIG. 5 TYPICAL JUNCTION CAPACITANCE



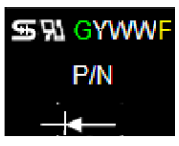

## PACKAGE OUTLINE DIMENSIONS

**ITO-220AC**




| DIM. | Unit (mm) | | Unit (inch) | |
|---|---|---|---|---|
| | Min | Max | Min | Max |
| A | 4.30 | 4.70 | 0.169 | 0.185 |
| B | 2.50 | 3.10 | 0.098 | 0.122 |
| C | 2.30 | 2.90 | 0.091 | 0.114 |
| D | 0.46 | 0.76 | 0.018 | 0.030 |
| E | 6.30 | 6.90 | 0.248 | 0.272 |
| F | 9.60 | 10.30 | 0.378 | 0.406 |
| G | 3.00 | 3.40 | 0.118 | 0.134 |
| H | 0.00 | 1.60 | 0.000 | 0.063 |
| I | 0.95 | 1.45 | 0.037 | 0.057 |
| J | 0.50 | 0.90 | 0.020 | 0.035 |
| K | 2.40 | 3.20 | 0.094 | 0.126 |
| L | 14.80 | 15.50 | 0.583 | 0.610 |
| M | - | 4.10 | - | 0.161 |
| N | - | 1.80 | - | 0.071 |
| O | 12.60 | 13.80 | 0.496 | 0.543 |
| P | 4.95 | 5.20 | 0.195 | 0.205 |

## MARKING DIAGRAM




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

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Version: C1511