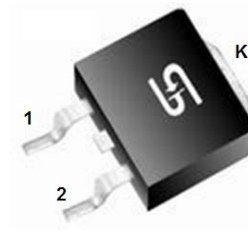


5A, 600V Surface Mount Ultra Fast Rectifier

FEATURES

- Ideal for automated placement
- High efficiency, low VF
- High surge current capability
- High reliability
- 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-263AB (D²PAK)



MECHANICAL DATA

Case: TO-263AB (D²PAK)

Molding compound: UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

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

Weight: 1.33 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A =25°C unless otherwise noted) | | | |
|--|--------------------|--------------|------|
| PARAMETER | SYMBOL | UGS5J | 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)} | 5 | A |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | I _{FSM} | 65 | A |
| Maximum instantaneous forward voltage T _J =25°C I _F =5A T _J =125°C | V _F | 2.0 1.8 | V |
| Maximum reverse current @ rated V _R T _J =25°C T _J =125°C | I _R | 20 250 | μA |
| Maximum reverse recovery time (Note 1) | t _{rr} | 20 | ns |
| Typical thermal resistance | R _{θJC} | 3 | °C/W |
| Operating junction temperature range | T _J | - 55 to +150 | °C |
| Storage temperature range | T _{STG} | - 55 to +150 | °C |

Note 1: 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 |
| UGS5J | H | RN | G | D ² PAK | 800 / 13" Paper reel |
| | | MN | | | 800 / 13" Plastic reel |

*: Optional available

| EXAMPLE | | | | | |
|-------------|----------|-----------------|--------------|---------------------|-----------------------------------|
| EXAMPLE P/N | PART NO. | PART NO. SUFFIX | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
| UGS5JHRNG | UGS5J | H | RN | G | AEC-Q101 qualified Green compound |

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

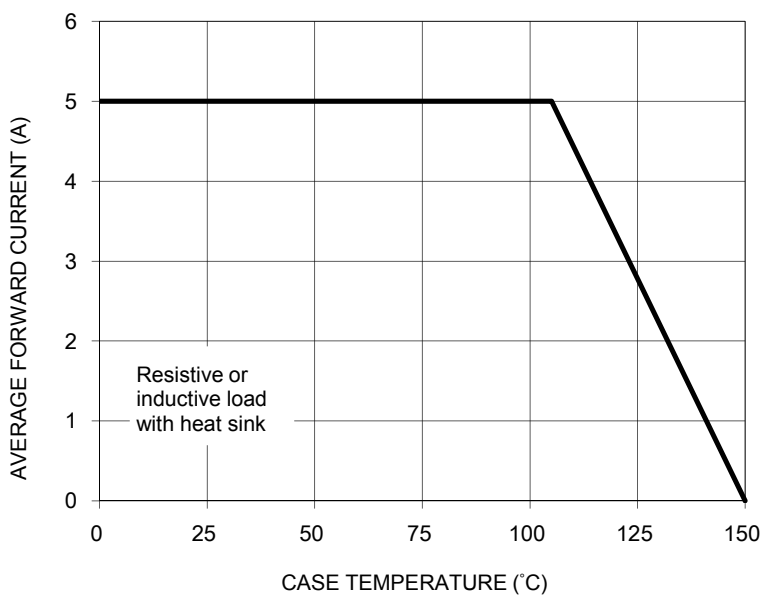


FIG. 2 TYPICAL REVERSE CHARACTERISTICS

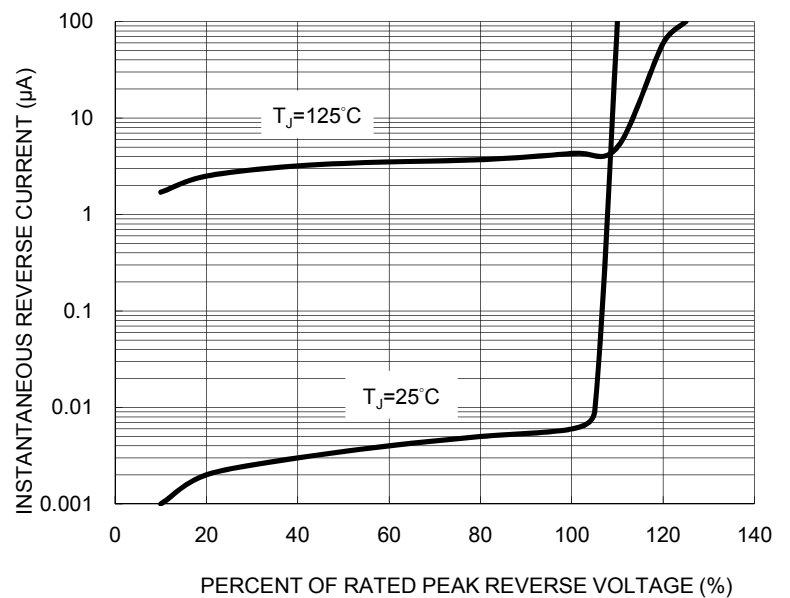


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

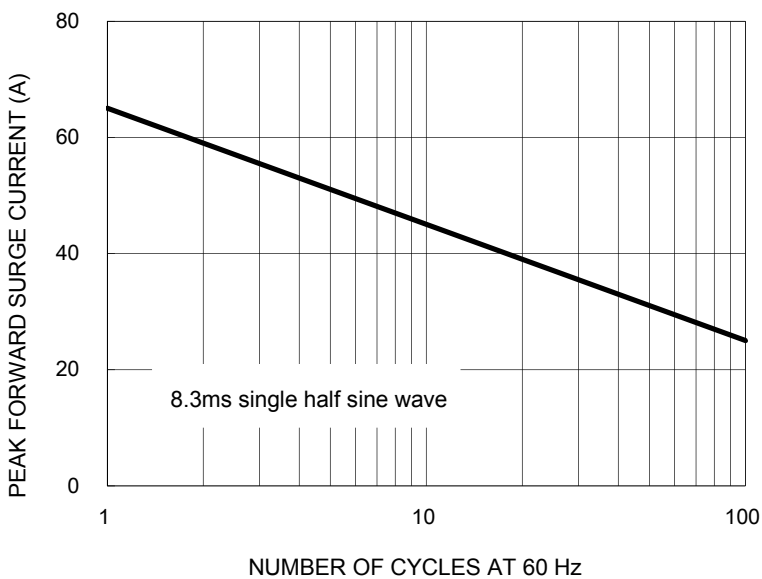


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

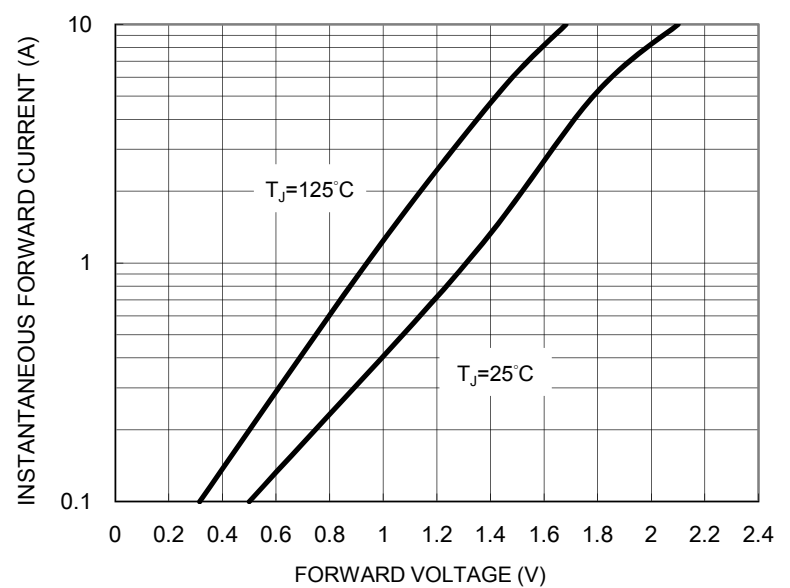
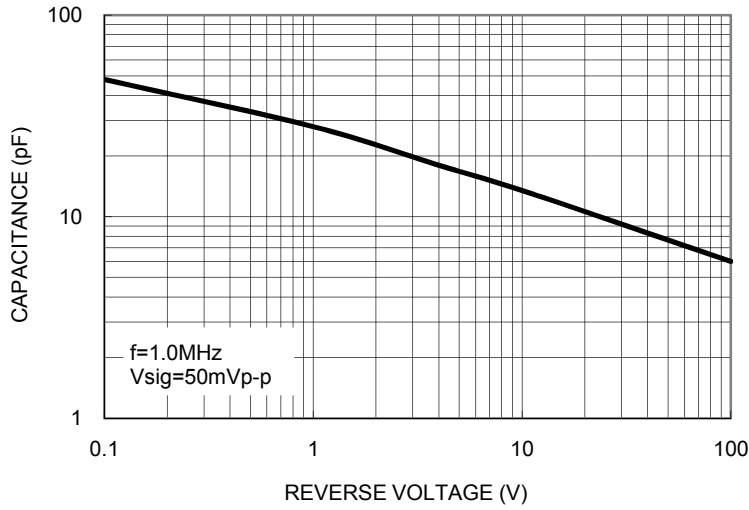
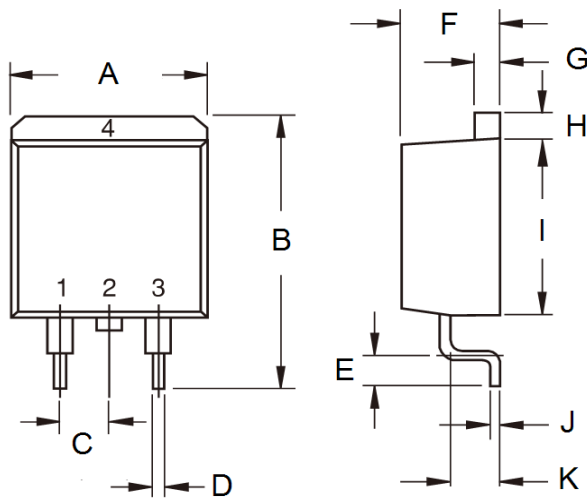


FIG. 5 TYPICAL JUNCTION CAPACITANCE



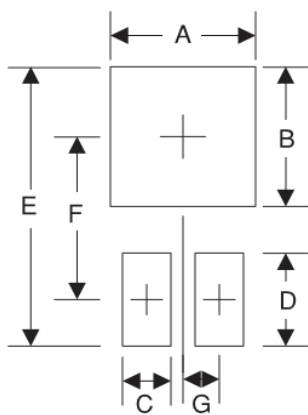
PACKAGE OUTLINE DIMENSIONS

TO-263AB (D²PAK)



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|-------|-------------|-------|
| | Min | Max | Min | Max |
| A | - | 10.5 | - | 0.413 |
| B | 14.60 | 15.88 | 0.575 | 0.625 |
| C | 2.41 | 2.67 | 0.095 | 0.105 |
| D | 0.68 | 0.94 | 0.027 | 0.037 |
| E | 2.29 | 2.79 | 0.090 | 0.110 |
| F | 4.44 | 4.70 | 0.175 | 0.185 |
| G | 1.14 | 1.40 | 0.045 | 0.055 |
| H | 1.14 | 1.40 | 0.045 | 0.055 |
| I | 8.25 | 9.25 | 0.325 | 0.364 |
| J | 0.36 | 0.53 | 0.014 | 0.021 |
| K | 2.03 | 2.79 | 0.080 | 0.110 |

SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A | 10.8 | 0.425 |
| B | 8.3 | 0.327 |
| C | 1.1 | 0.043 |
| D | 3.5 | 0.138 |
| E | 16.9 | 0.665 |
| F | 9.5 | 0.374 |
| G | 2.5 | 0.098 |

MARKING DIAGRAM



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

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