

Trench Schottky Rectifier

FEATURES

- Patented Trench Schottky technology
- Excellent high temperature stability
- Low forward voltage
- Lower power loss/ high efficiency
- High forward surge capability
- Ideal for automated placement
- Moisture sensitivity level: level 1, per J-STD-020
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



TO-277A (SMPC)



TYPICAL APPLICATIONS

Trench Schottky barrier rectifier are designed for high frequency miniature switched mode power supplies such as adapters, lighting and on-board DC/DC converters.

MECHANICAL DATA

Case: TO-277A (SMPC)

Molding compound meets UL 94 V-0 flammability rating

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

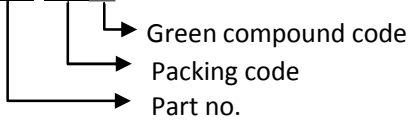
Polarity: As marked

Weight: 0.095g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A = 25°C unless otherwise noted) | | | | | | |
|---|--------------------|------------------------|-----|------|------|----|
| PARAMETER | SYMBOL | TSP20U60S | | | UNIT | |
| Marking code | | 20U60 | | | | |
| Maximum repetitive peak reverse voltage | V _{RRM} | 60 | | | V | |
| Maximum average forward rectified current | I _{F(AV)} | 20 | | | A | |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load | I _{FSM} | 280 | | | A | |
| Instantaneous forward voltage (Note 1) | V _F | T _J = 25°C | MIN | TYP | MAX | V |
| | | | - | 0.43 | - | |
| | | T _J = 125°C | - | 0.48 | 0.58 | |
| | | | - | 0.33 | - | |
| Instantaneous reverse current at rated reverse voltage | I _R | T _J = 25°C | - | - | 500 | μA |
| | | T _J = 125°C | - | - | 100 | mA |
| Typical thermal resistance | R _{θJL} | 10 | | | °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 pulse width = 300μs, 1% duty cycle

TSP20U60S COG



RATINGS AND CHARACTERISTICS CURVES

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

FIG.1 FORWARD CURRENT DERATING CURVE

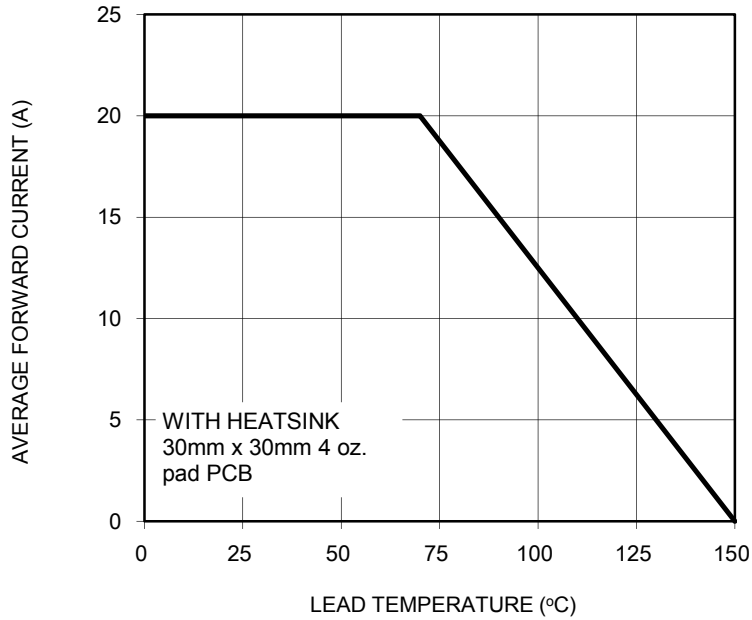


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

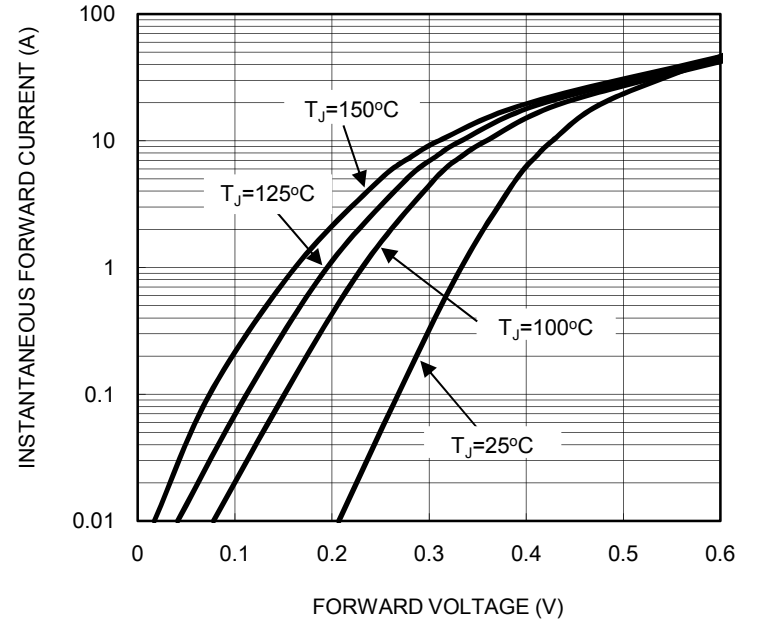


FIG. 3 TYPICAL REVERSE CHARACTERISTICS

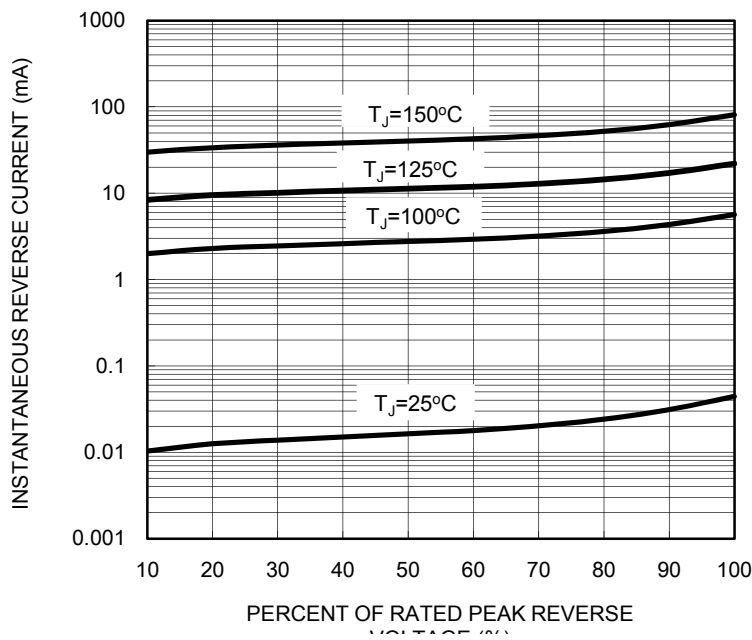
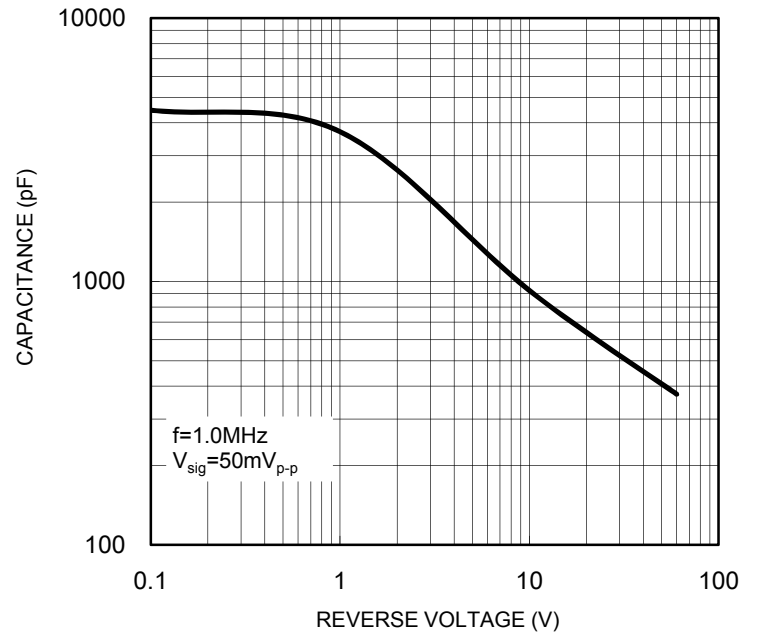
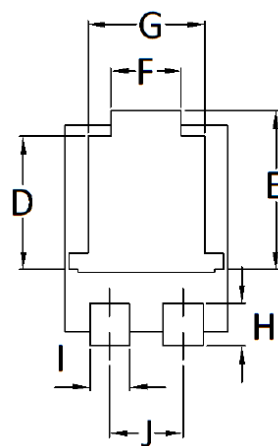
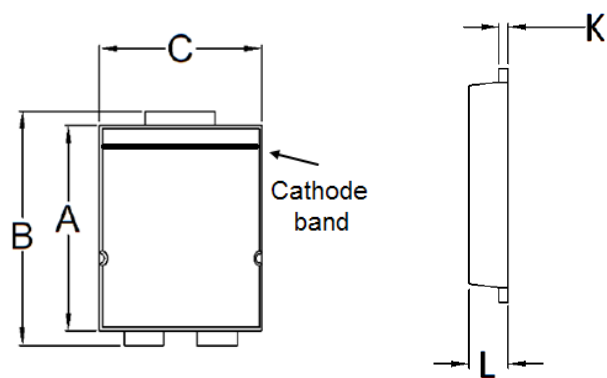


FIG. 4 TYPICAL JUNCTION CAPACITANCE

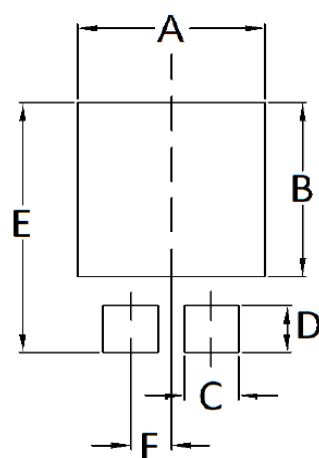


PACKAGE OUTLINE DIMENSIONS
TO-277A (SMPC)



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|-------|-------------|-------|
| | Min | Max | Min | Max |
| A | 5.650 | 5.750 | 0.222 | 0.226 |
| B | 6.350 | 6.650 | 0.250 | 0.262 |
| C | 4.550 | 4.650 | 0.179 | 0.183 |
| D | 3.540 | 3.840 | 0.139 | 0.151 |
| E | 4.235 | 4.535 | 0.167 | 0.179 |
| F | 1.850 | 2.150 | 0.073 | 0.085 |
| G | 3.170 | 3.470 | 0.125 | 0.137 |
| H | 1.043 | 1.343 | 0.041 | 0.053 |
| I | 1.000 | 1.300 | 0.039 | 0.051 |
| J | 1.930 | 2.230 | 0.076 | 0.088 |
| K | 0.175 | 0.325 | 0.007 | 0.013 |
| L | 1.000 | 1.200 | 0.039 | 0.047 |

SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A | 4.80 | 0.189 |
| B | 4.72 | 0.186 |
| C | 1.40 | 0.055 |
| D | 1.27 | 0.050 |
| E | 6.80 | 0.268 |
| F | 1.04 | 0.041 |

MARKING DIAGRAM



P/N = Marking Code
YWF = Date Code
F = Factory Code

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