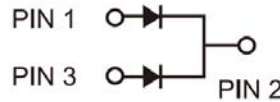


Trench MOS Barrier Schottky Rectifier

FEATURES

- Patented Trench MOS Barrier Schottky technology
- Excellent high temperature stability
- Low forward voltage
- Lower power loss/ High efficiency
- High forward surge capability
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition


MECHANICAL DATA
Case: ITO-220AB

 Molding compound meets UL 94 V-0 flammability rating
 Base P/N with suffix "G" on packing code - halogen-free, RoHS compliant

Terminal: Matte tin plated leads, solderable per JESD22-B102
 Meet JESD 201 class 1A whisker test

Polarity: As marked

Mounting torque: 5 in-lbs. max.

Weight: 1.7g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS(TA=25°C unless otherwise noted) | | | | | |
|---|---------------------------|--------------|-----------|---------------------------|---|
| PARAMETER | SYMBOL | TSF20U45C | TSF20U60C | UNIT | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 45 | 60 | V | |
| Maximum average forward rectified current | per device | 20 | | A | |
| | per diode | 10 | | | |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load per diode | I_{FSM} | 180 | 200 | A | |
| Peak repetitive reverse surge current (Note 1) | I_{RRM} | 0.5 | 3 | A | |
| Voltage rate of change (Rated VR) | dV/dt | 10000 | | V/ μ s | |
| Isolation voltage from terminal to heatsink t = 1 min | V_{AC} | 1500 | 2000 | V | |
| Breakdown voltage (IR =1.0mA, Ta =25°C) | V_{BR} | 45 | 60 | V | |
| Maximum instantaneous forward voltage per diode (Note2) | $T_J = 25^\circ\text{C}$ | IF = 10A | 0.50 | 0.51 | V |
| | | IF = 20A | 0.60 | 0.65 | |
| | $T_J = 125^\circ\text{C}$ | IF = 10A | 0.47 | 0.47 | |
| | | IF = 20A | 0.60 | - | |
| Maximum instantaneous reverse current per diode at rated reverse voltage | $T_J = 25^\circ\text{C}$ | 500 | | μ A | |
| | $T_J = 125^\circ\text{C}$ | 100 | | mA | |
| Typical thermal resistance per diode | $R_{\theta JC}$ | 3 | 4 | $^\circ\text{C}/\text{W}$ | |
| Operating junction temperature range | T_J | - 55 to +150 | | $^\circ\text{C}$ | |
| Storage temperature range | T_{STG} | - 55 to +150 | | $^\circ\text{C}$ | |

 Note 1: 2.0 μ s Pulse Width, f=1.0 kHz

 Note 2: Pulse Test with Pulse Width=300 μ s, 1% Duty Cycle

| ORDERING INFORMATION | | | | |
|----------------------|--------------|---------------------|-----------|-----------|
| PART NO. | PACKING CODE | GREEN COMPOUND CODE | PACKAGE | PACKING |
| TSF20UxxC (Note 1) | C0 | Suffix "G" | ITO-220AB | 50 / Tube |

Note 1: "xx" defines voltage from 45V (TSF20U45C) to 60V (TSF20U60C)

| EXAMPLE | | | | |
|---------------|-----------|--------------|---------------------|----------------|
| PREFERRED P/N | PART NO. | PACKING CODE | GREEN COMPOUND CODE | DESCRIPTION |
| TSF20U60C C0 | TSF20U60C | C0 | | |
| TSF20U60C C0G | TSF20U60C | C0 | G | Green compound |

RATINGS AND CHARACTERISTICS CURVES

(TA=25°C unless otherwise noted)

FIG.1 FORWARD CURRENT DERATING CURVE

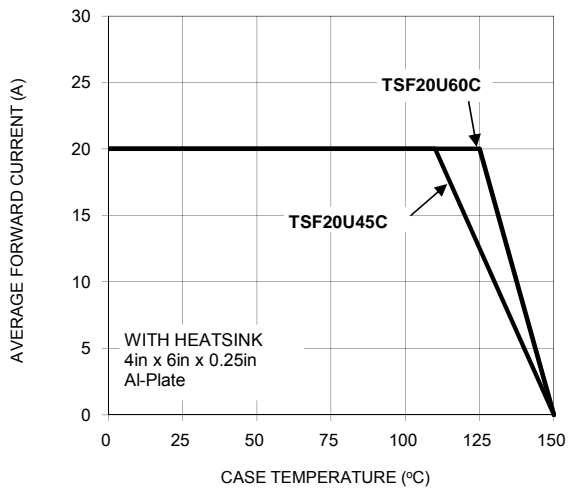


FIG. 2 TYPICAL FORWARD CHARACTERISTICS

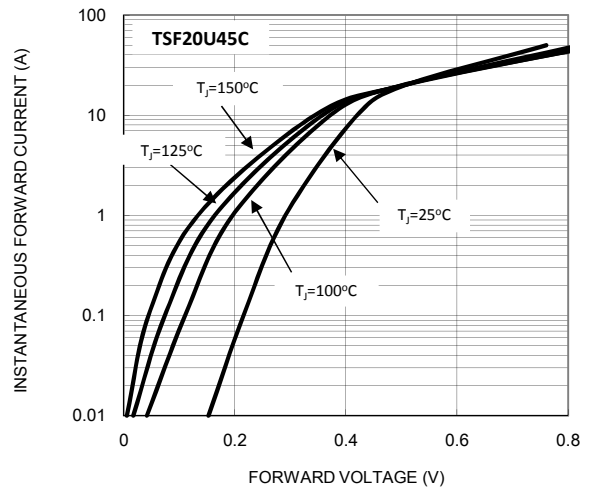


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

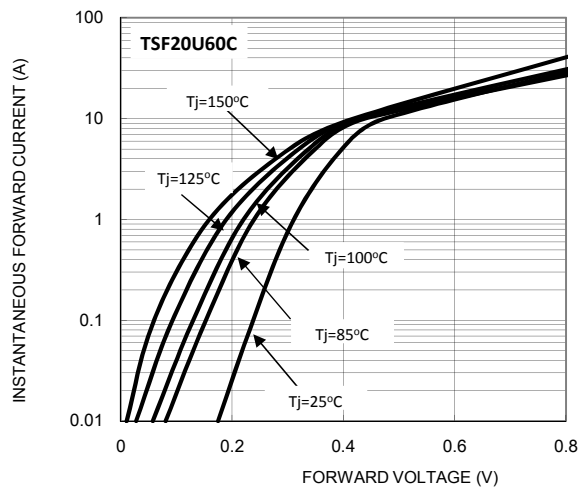


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

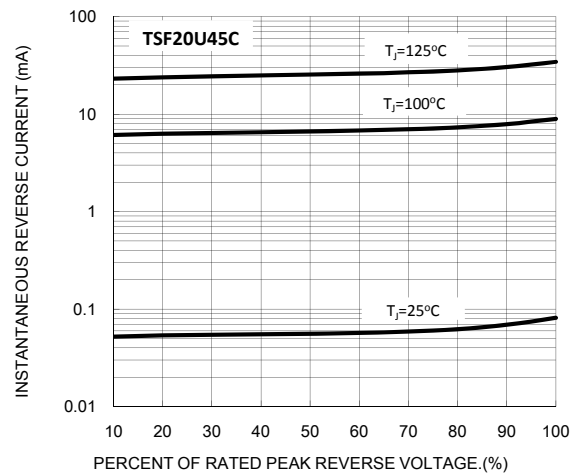


FIG. 5 TYPICAL REVERSE CHARACTERISTICS

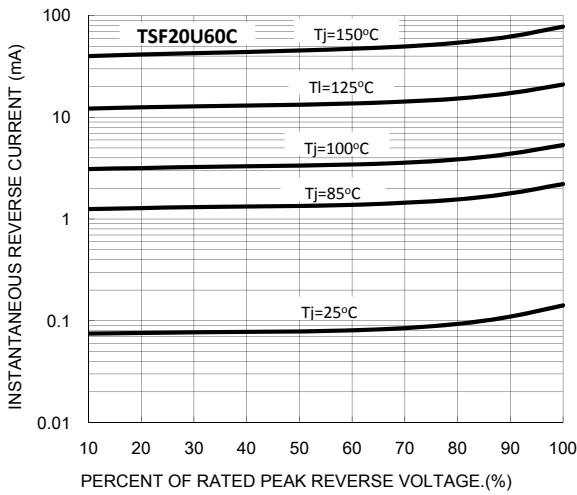
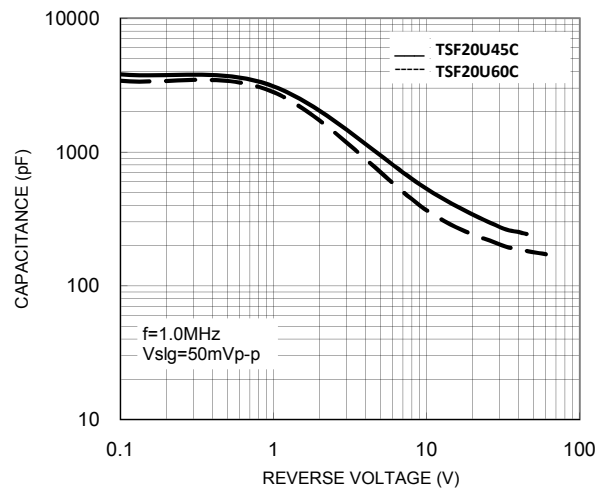
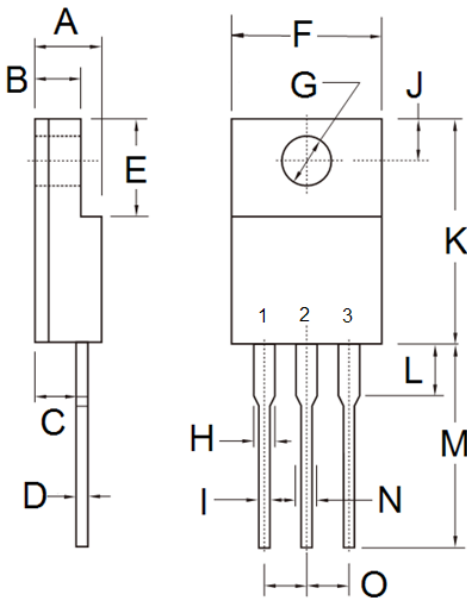


FIG. 6 TYPICAL JUNCTION CAPACITANCE



PACKAGE OUTLINE DIMENSIONS



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|-------|-------------|-------|
| | Min | Max | Min | Max |
| A | 4.30 | 4.70 | 0.169 | 0.185 |
| B | 2.50 | 3.16 | 0.098 | 0.124 |
| C | 2.30 | 2.96 | 0.091 | 0.117 |
| 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 | 0.95 | 1.45 | 0.037 | 0.057 |
| I | 0.50 | 0.90 | 0.020 | 0.035 |
| J | 2.40 | 3.20 | 0.094 | 0.126 |
| K | 14.80 | 15.50 | 0.583 | 0.610 |
| L | - | 4.10 | - | 0.161 |
| M | 12.60 | 13.80 | 0.496 | 0.543 |
| N | - | 1.80 | - | 0.071 |
| O | 2.41 | 2.67 | 0.095 | 0.105 |

MARKING DIAGRAM



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