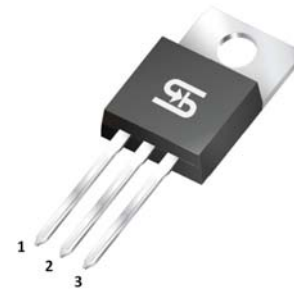


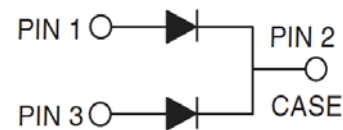
30A, 45V - 60V Trench Schottky Rectifiers

FEATURES

- Patented Trench Schottky technology
- Excellent high temperature stability
- Low forward voltage
- Low 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



TO-220AB



TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: TO-220AB

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 1A whisker test

Polarity: As marked

Mounting torque: 0.56 Nm max.

Weight: 1.88 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T _A = 25°C unless otherwise noted) | | | | | | | |
|---|------------------------|------------------------|-----------|------|------|------|---|
| PARAMETER | SYMBOL | TST30U45C | TST30U60C | UNIT | | | |
| Maximum repetitive peak reverse voltage | V _{RRM} | 45 | 60 | V | | | |
| Maximum average forward rectified current | per device | 30 | | A | | | |
| | per diode | 15 | | | | | |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load per diode | I _{FSM} | 250 | | A | | | |
| Voltage rate of change (Rated V _R) | dV/dt | 10000 | | V/μs | | | |
| | | TYP. | MAX. | TYP. | MAX. | | |
| Instantaneous forward voltage per diode (Note1) | I _F = 15A | T _J = 25°C | 0.45 | 0.54 | 0.48 | 0.57 | V |
| | I _F = 15A | T _J = 125°C | 0.40 | 0.49 | 0.43 | 0.52 | |
| Maximum instantaneous reverse current per diode at rated reverse voltage | T _J = 25°C | | 500 | | μA | | |
| | T _J = 125°C | | 60 | | mA | | |
| Typical thermal resistance per diode | R _{θJC} | 4 | | °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

| ORDERING INFORMATION | | | | |
|----------------------|--------------|---------------------|----------|-----------|
| PART NO. | PACKING CODE | PACKING CODE SUFFIX | PACKAGE | PACKING |
| TST30UXXC | C0 | G | TO-220AB | 50 / Tube |

Note 1: "XX" defines voltage from 45V (TST30U45C) to 60V (TST30U60C)

| EXAMPLE | | | | |
|--------------------|-----------|--------------|---------------------|----------------|
| PREFERRED PART NO. | PART NO. | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
| TST30U45C C0G | TST30U45C | C0 | G | Green compound |

RATINGS AND CHARACTERISTICS CURVES

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

FIG.1 FORWARD CURRENT DERATING CURVE

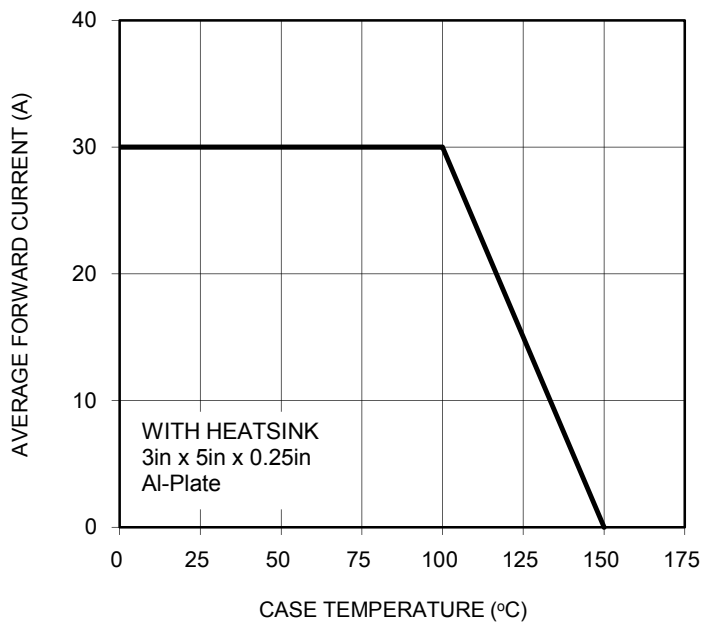


FIG.2 TYPICAL FORWARD CHARACTERISTICS

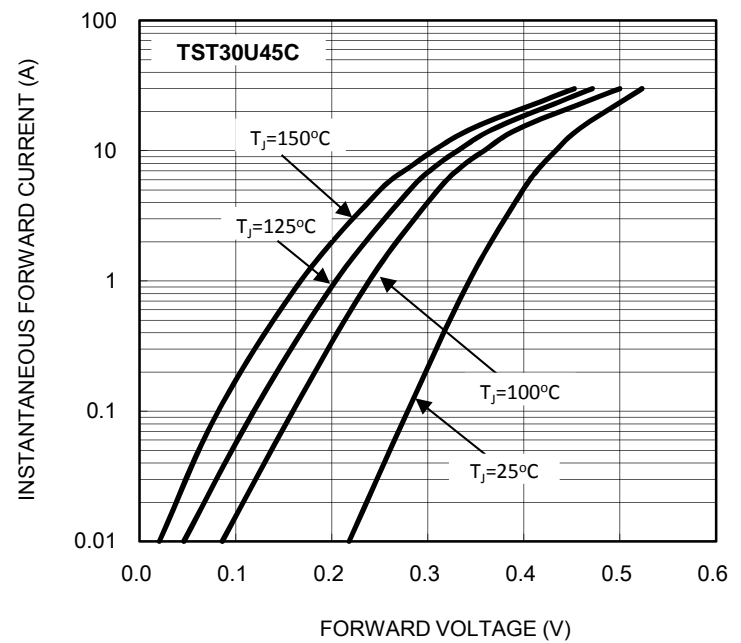


FIG.3 TYPICAL FORWARD CHARACTERISTICS

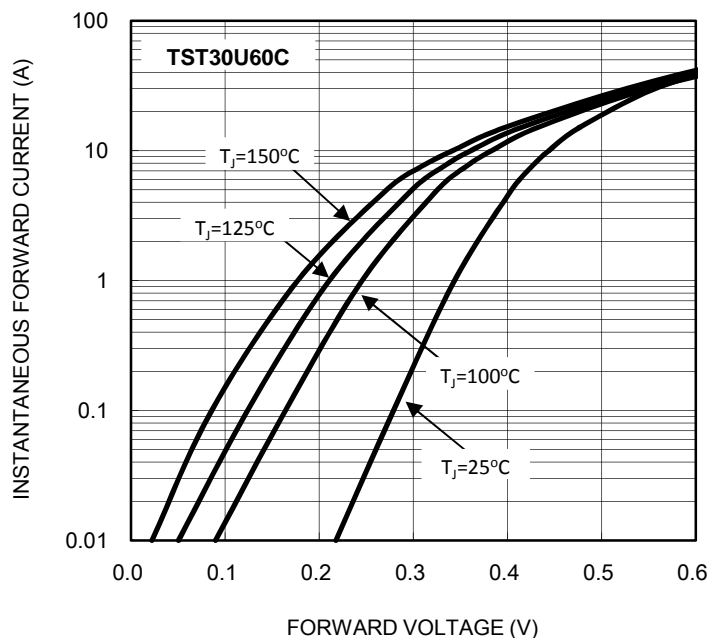


FIG.4 TYPICAL REVERSE CHARACTERISTICS

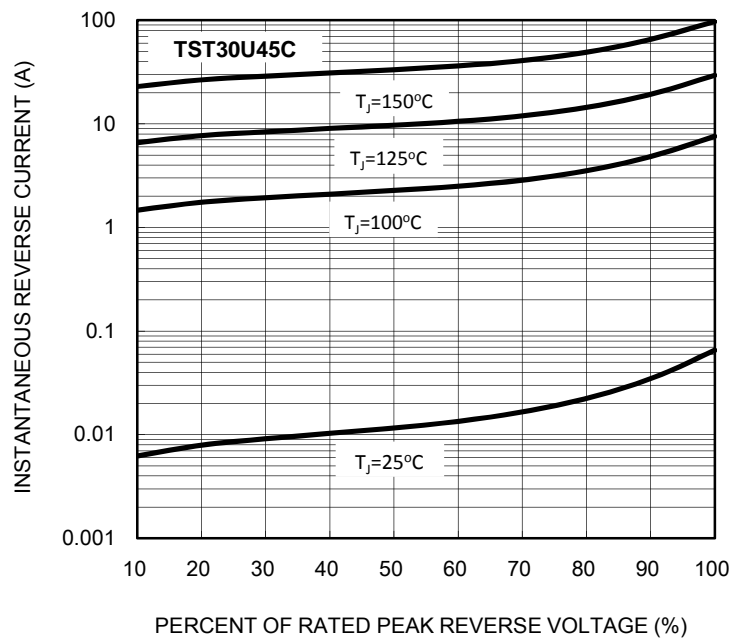


FIG.5 TYPICAL REVERSE CHARACTERISTICS

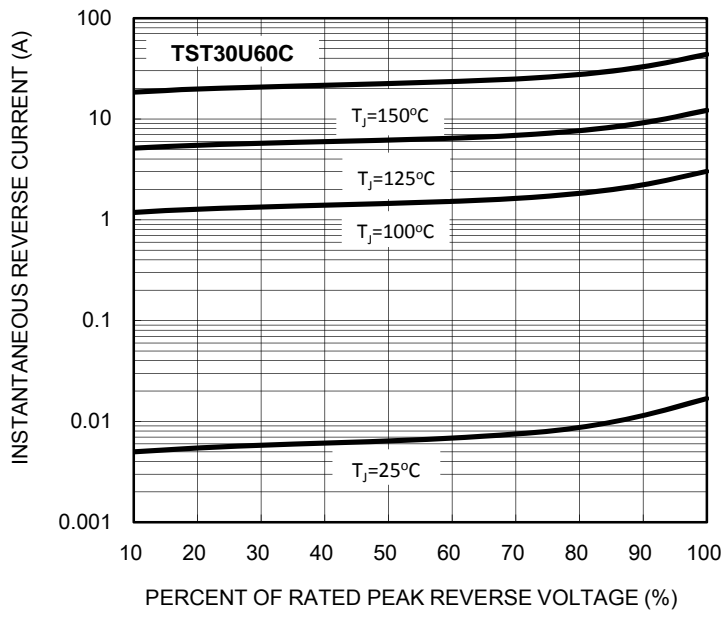


FIG.6 TYPICAL JUNCTION CAPACITANCE

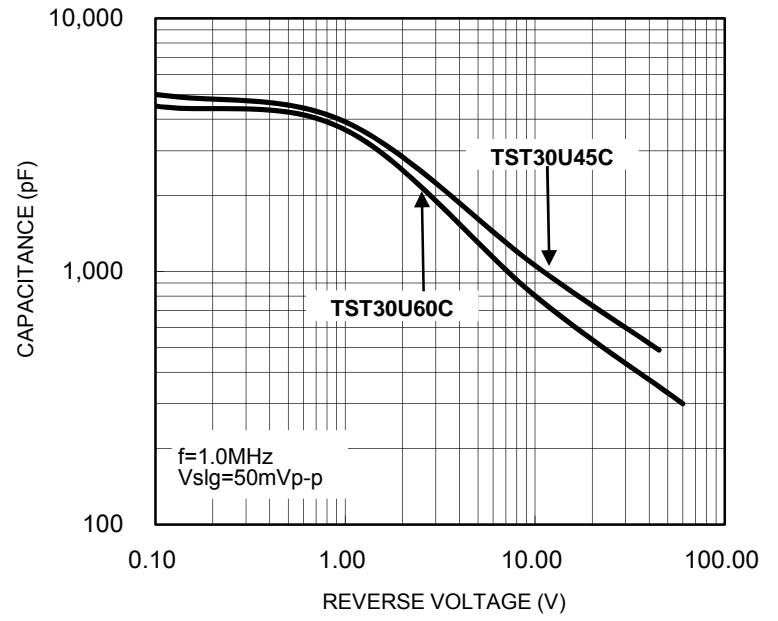
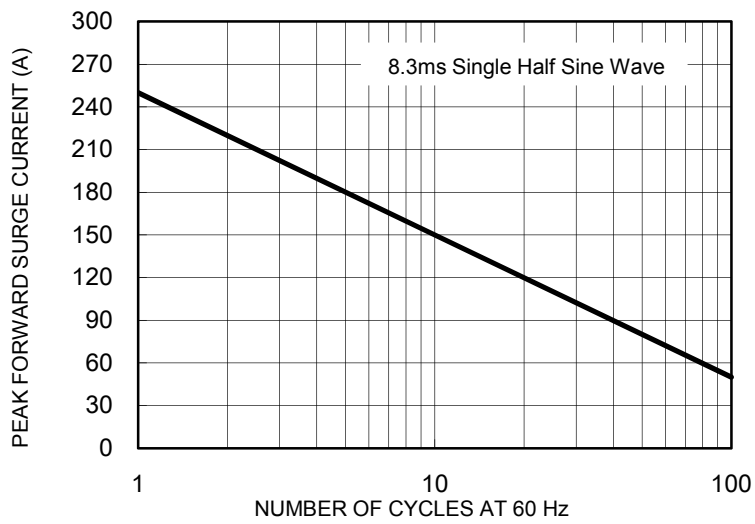
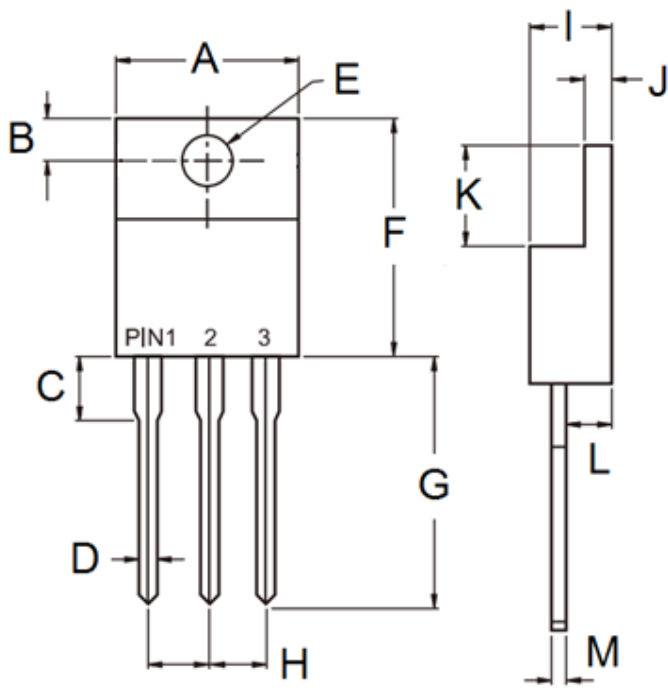


FIG. 5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

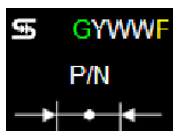


PACKAGE OUTLINE DIMENSIONS
TO-220AB



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|-------|-------------|-------|
| | Min | Max | Min | Max |
| A | 9.60 | 10.50 | 0.378 | 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 | 13.19 | 14.79 | 0.519 | 0.582 |
| H | 2.41 | 2.67 | 0.095 | 0.105 |
| I | 4.42 | 4.76 | 0.174 | 0.187 |
| J | 1.14 | 1.40 | 0.045 | 0.055 |
| K | 5.84 | 6.86 | 0.230 | 0.270 |
| L | 2.20 | 2.80 | 0.087 | 0.110 |
| M | 0.35 | 0.64 | 0.014 | 0.025 |

MARKING DIAGRAM



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

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