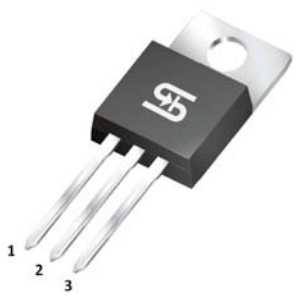
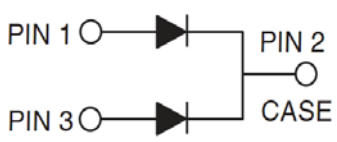
# 30A, 45V - 60V Trench Schottky Rectifiers

## 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**




Pb-Free

RoHS COMPLIANT

## 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 | | $I_{F(AV)}$ | 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 | $V_F$ | 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 | $I_R$ | 500 | | | | μA |
| | | $T_J$ = 125°C | | 60 | | | | mA |
| Typical thermal resistance per diode | | | $R_{\theta JC}$ | 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°C unless otherwise noted)

**FIG.1 FORWARD CURRENT DERATING CURVE**

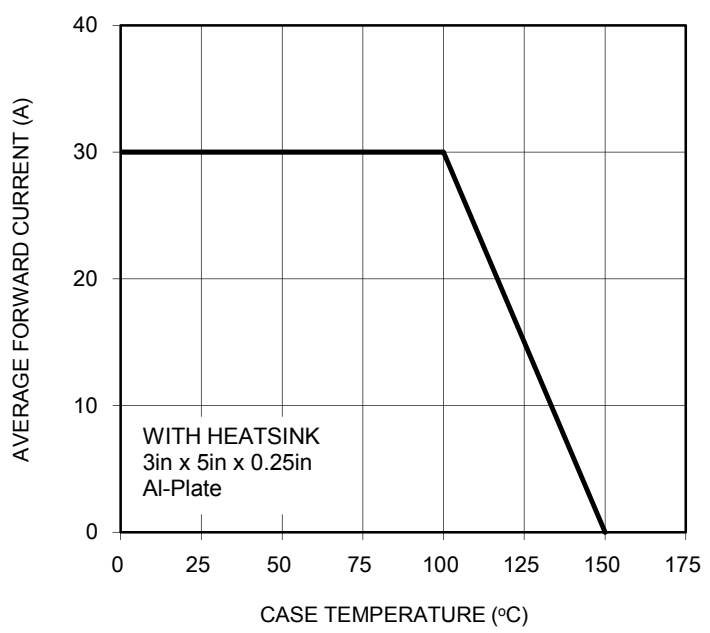



**FIG.2 TYPICAL FORWARD CHARACTERISTICS**

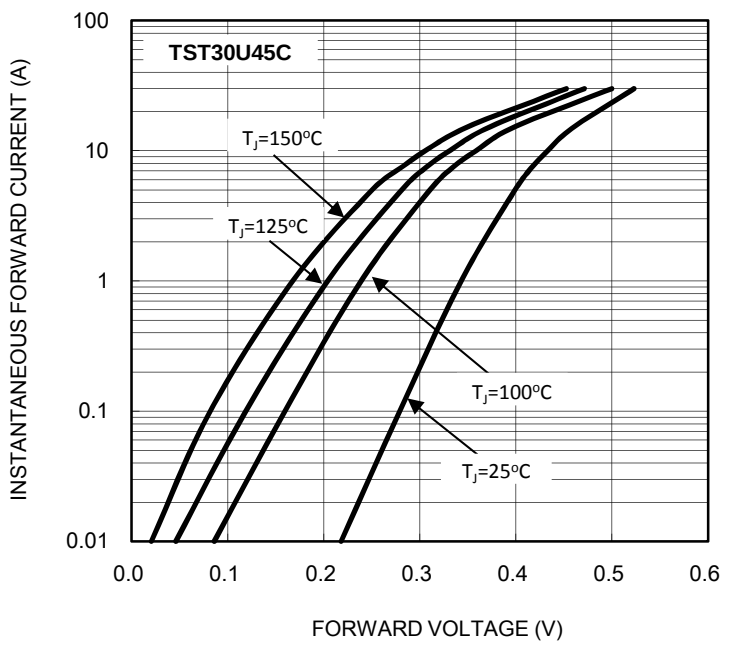



**FIG.3 TYPICAL FORWARD CHARACTERISTICS**

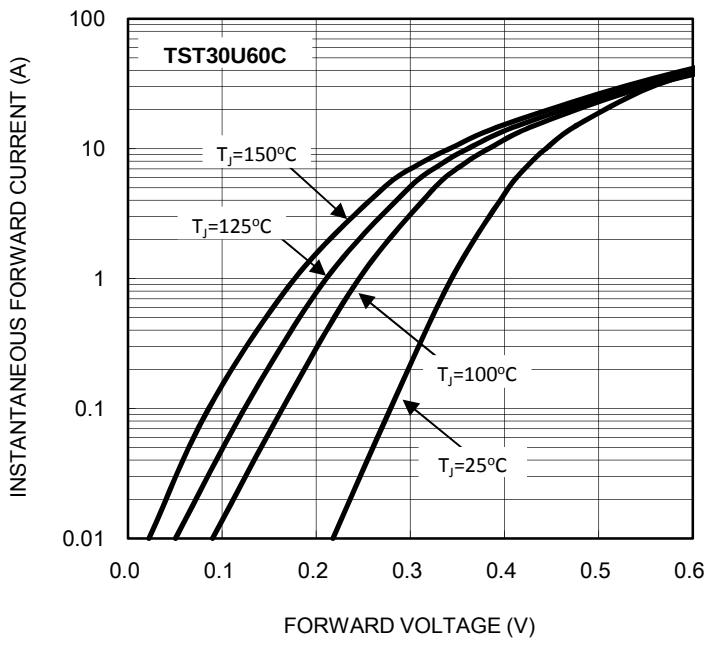



**FIG.4 TYPICAL REVERSE CHARACTERISTICS**

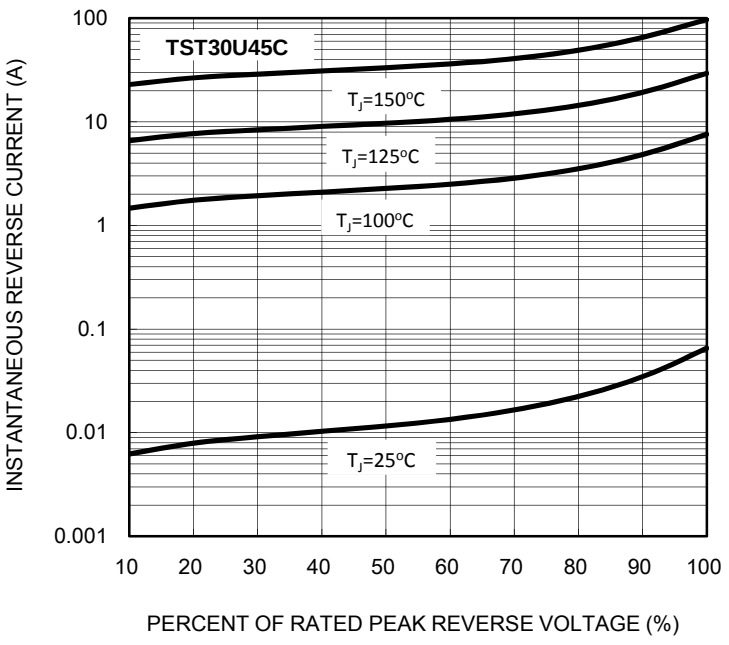


**FIG.5 TYPICAL REVERSE CHARACTERISTICS**

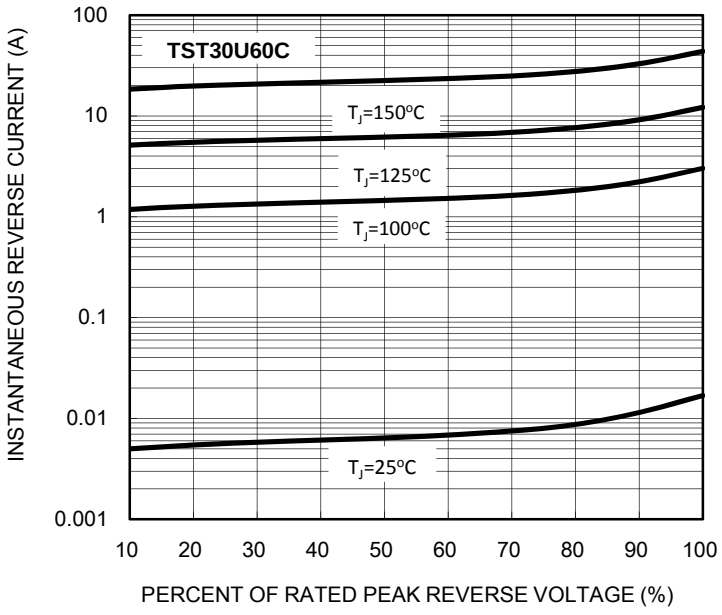



**FIG.6 TYPICAL JUNCTION CAPACITANCE**

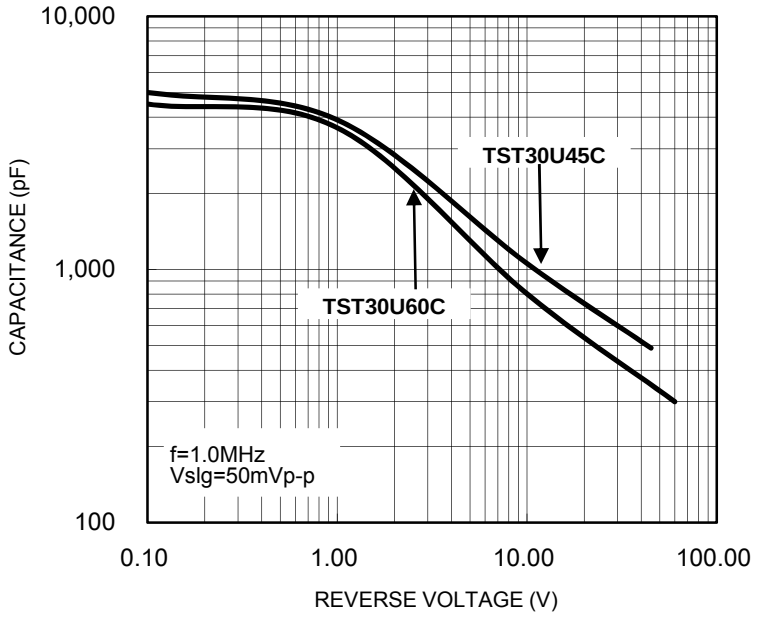
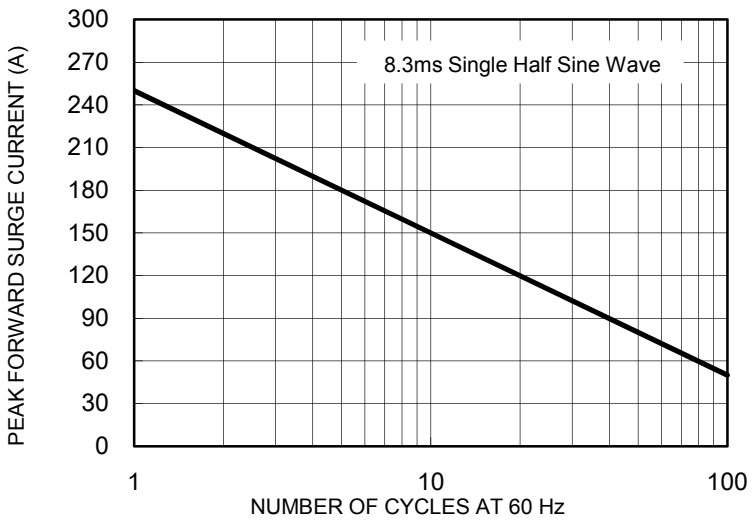
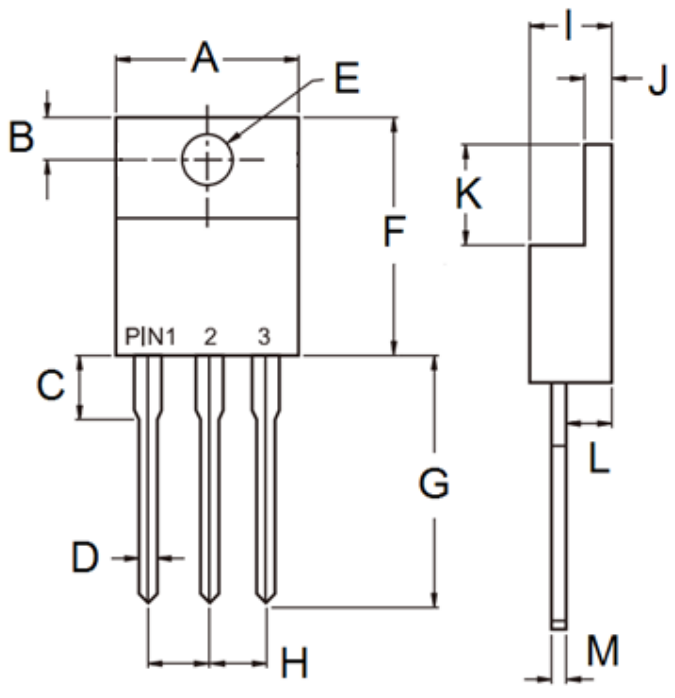



**FIG. 5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT**



## 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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- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
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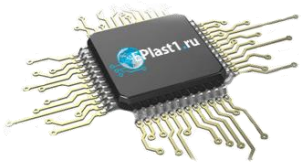


**Как с нами связаться**

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