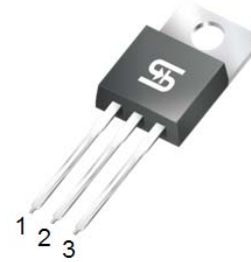


30A, 45V - 60V Trench Schottky Rectifiers

FEATURES

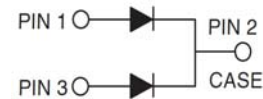
- Patented Trench Schottky technology
- Excellent high temperature stability
- Low forward voltage
- Low power loss/ High efficiency
- High forward surge capability
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



TO-220AB

TYPICAL APPLICATIONS

Trench Schottky barrier rectifier is designed for high frequency switched mode power supplies such as adapters, lighting and 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 ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | | | |
|---|---------------------------|-----------------|--------------|------|------------|------|--------------------|
| PARAMETER | | SYMBOL | TST30U45CW | | TST30U60CW | | 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) | $I_F = 15\text{A}$ | V_F | 0.45 | 0.55 | 0.48 | 0.58 | V |
| | $I_F = 15\text{A}$ | | 0.39 | 0.49 | 0.42 | 0.52 | |
| Maximum instantaneous reverse current per diode at rated reverse voltage | $T_J = 25^\circ\text{C}$ | I_R | 500 | | | | μA |
| | $T_J = 125^\circ\text{C}$ | | 100 | | | | mA |
| Typical thermal resistance per diode | | $R_{\theta JC}$ | 3 | | | | $^\circ\text{C/W}$ |
| | | $R_{\theta JL}$ | 3 | | | | |
| 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: Pulse test with pulse width = 300 μs , 1% duty cycle

| ORDERING INFORMATION | | | | |
|---------------------------|--------------|---------------------|----------|-----------|
| PART NO. | PACKING CODE | PACKING CODE SUFFIX | PACKAGE | PACKING |
| TST30UXXCW (Note 1, 2) | C0 | G | TO-220AB | 50 / Tube |

Note 1: "XX" defines voltage from 45V (TST30U45CW) to 60V (TST30U60CW)

Note 2: Whole series with green compound

| EXAMPLE | | | | |
|------------------|------------|--------------|---------------------|----------------|
| EXAMPLE PART NO. | PART NO. | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION |
| TST30U60CW C0G | TST30U60CW | C0 | G | Green compound |

RATINGS AND CHARACTERISTICS CURVES

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

FIG.1 FORWARD CURRENT DERATING CURVE

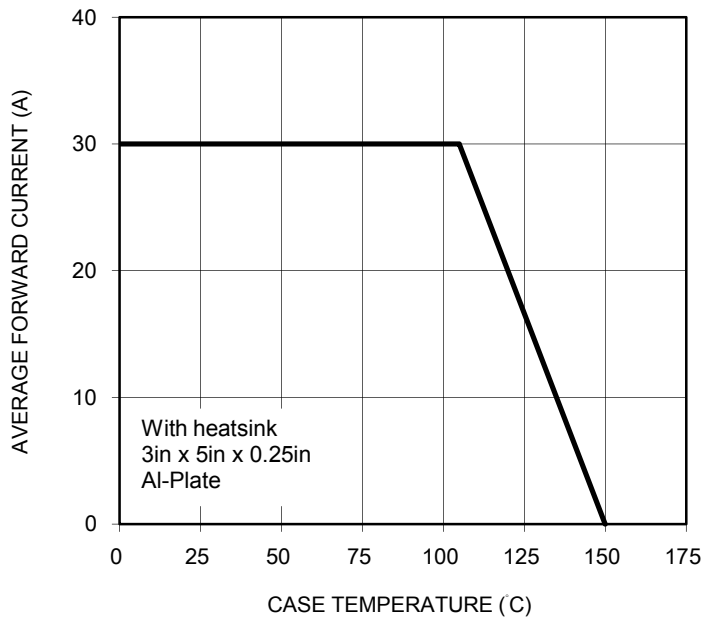


FIG.2 TYPICAL FORWARD CHARACTERISTICS

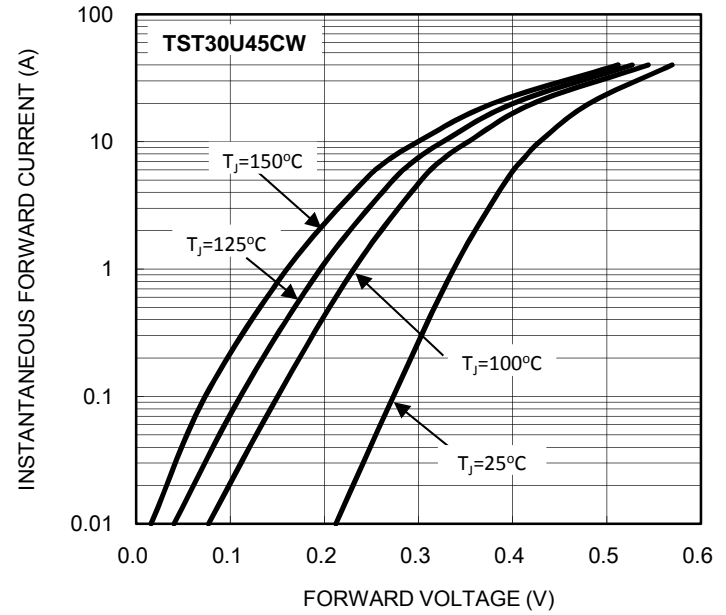


FIG.3 TYPICAL FORWARD CHARACTERISTICS

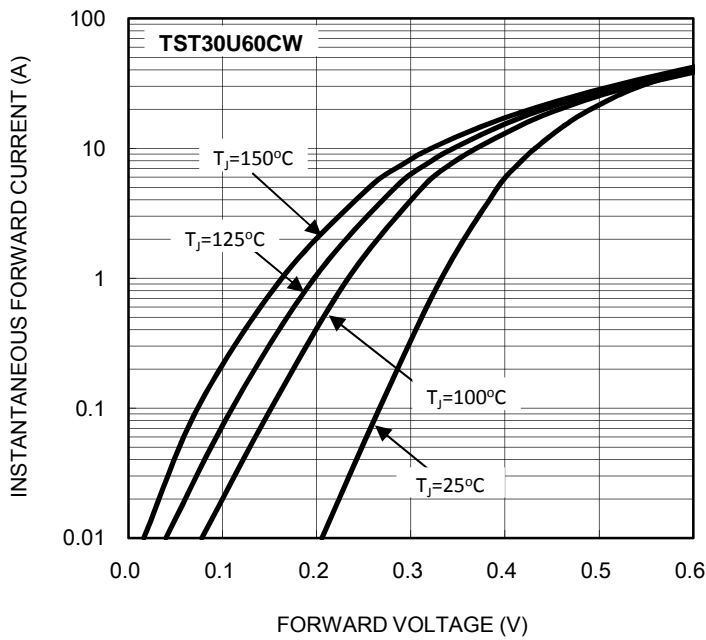


FIG.4 TYPICAL REVERSE CHARACTERISTICS

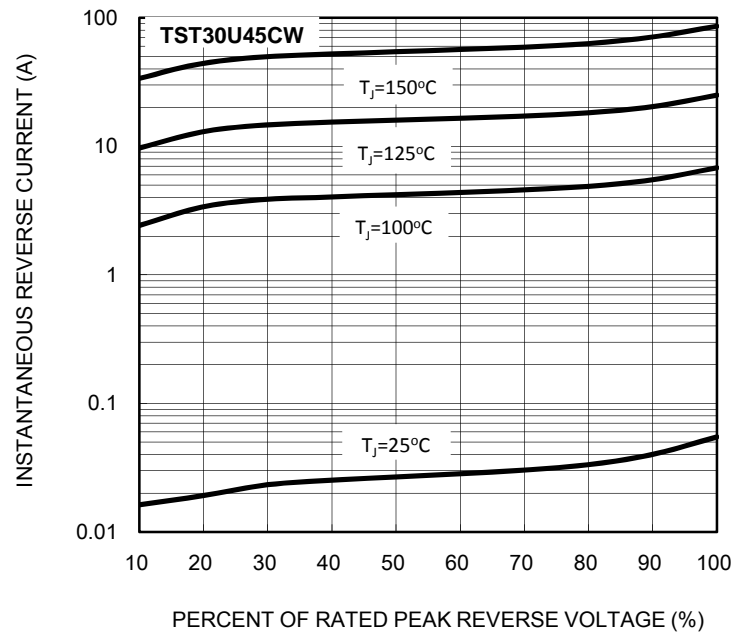


FIG.5 TYPICAL REVERSE CHARACTERISTICS

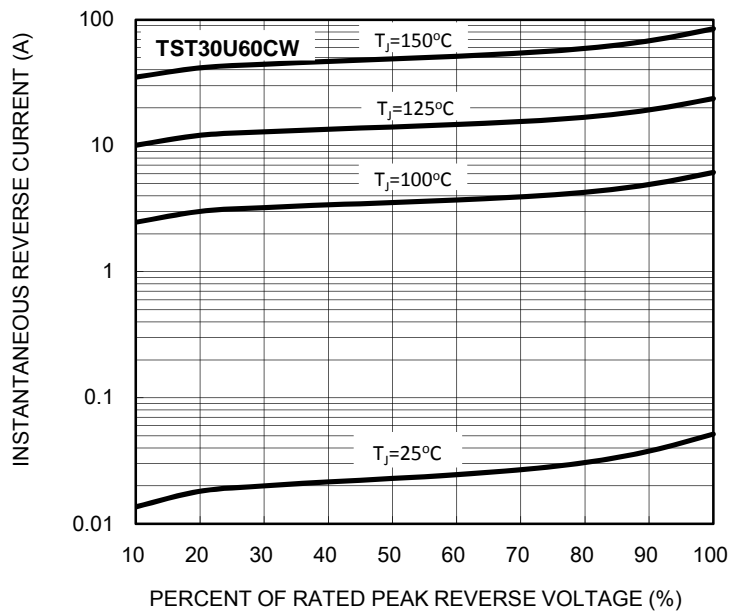


FIG.6 TYPICAL JUNCTION CAPACITANCE

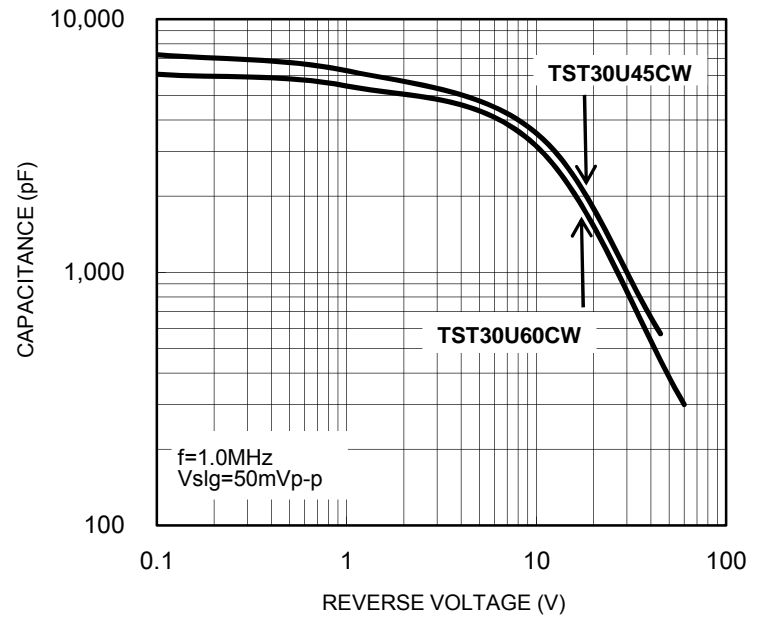
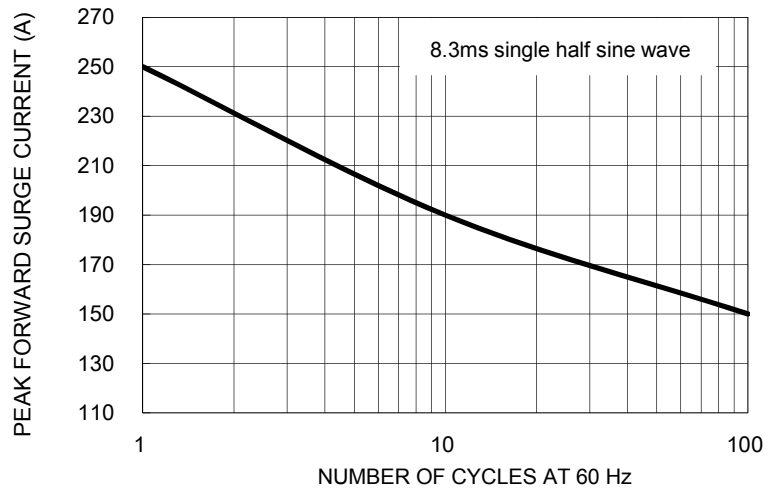
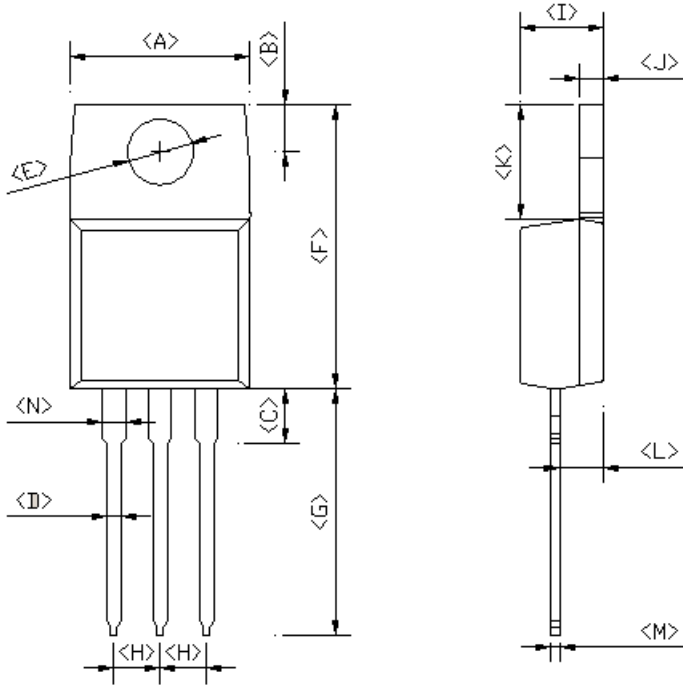


FIG. 7 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



PACKAGE OUTLINE DIMENSIONS
TO-220AB



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|-------|-------------|-------|
| | Min | Max | Min | Max |
| A | - | 10.50 | - | 0.413 |
| B | 2.54 | 3.44 | 0.100 | 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 |
| N | 0.95 | 1.45 | 0.037 | 0.057 |

MARKING DIAGRAM



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

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