

## Trench Schottky Rectifier

### 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

### 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:** ITO-220AB

Molding compound meets UL 94 V-0 flammability rating

Packing code with suffix "G" means green compound (halogen-free)

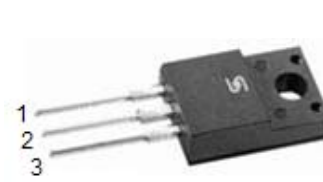
**Terminal:** Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 2 whisker test

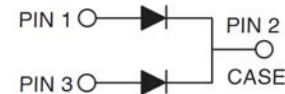
**Polarity:** As marked

Mounting torque: 0.56 Nm max.

**Weight:** 1.7 g (approximately)



ITO-220AB



| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25°C unless otherwise noted) |                      |                        |                    |              |      |           |      |      |
|-----------------------------------------------------------------------------------------------|----------------------|------------------------|--------------------|--------------|------|-----------|------|------|
| PARAMETER                                                                                     |                      |                        | SYMBOL             | TSF30L45C    |      | TSF30L60C |      | UNIT |
| Maximum repetitive peak reverse voltage                                                       |                      |                        | V <sub>RRM</sub>   | 45           |      | 60        |      | V    |
| Maximum average forward rectified current                                                     | per device           |                        | I <sub>F(AV)</sub> | 30           |      |           |      | A    |
|                                                                                               | per diode            |                        |                    | 15           |      |           |      |      |
| Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load per diode  |                      |                        | I <sub>FSM</sub>   | 180          |      |           |      | A    |
| Voltage rate of change (Rated V <sub>R</sub> )                                                |                      |                        | dV/dt              | 10000        |      |           |      | V/μs |
|                                                                                               |                      |                        |                    | TYP          | MAX  | TYP       | MAX  |      |
| Instantaneous forward voltage per diode (Note1)                                               | I <sub>F</sub> = 15A | T <sub>J</sub> = 25°C  | V <sub>F</sub>     | 0.48         | 0.55 | 0.55      | 0.62 | V    |
|                                                                                               |                      | T <sub>J</sub> = 125°C |                    | 0.46         | 0.53 | 0.51      | 0.58 |      |
| Instantaneous reverse current per diode at rated reverse voltage                              |                      | T <sub>J</sub> = 25°C  | I <sub>R</sub>     | 500          |      |           |      | μA   |
|                                                                                               |                      | T <sub>J</sub> = 125°C |                    | 60           |      |           |      | mA   |
| Typical thermal resistance per diode                                                          |                      |                        | R <sub>θJC</sub>   | 4            |      |           |      | °C/W |
| Operating junction temperature range                                                          |                      |                        | T <sub>J</sub>     | - 55 to +150 |      |           |      | °C   |
| Storage temperature range                                                                     |                      |                        | T <sub>STG</sub>   | - 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   |
|-----------------------|--------------|---------------------|-----------|-----------|
| TSF30LXXC<br>(Note 1) | C0           | G                   | ITO-220AB | 50 / Tube |

Note 1: "XX" defines voltage from 45V (TSF30L45C) to 60V (TSF30L60C)

**EXAMPLE**

| PREFERRED PART NO. | PART NO.  | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION    |
|--------------------|-----------|--------------|---------------------|----------------|
| TSF30L60C C0G      | TSF30L60C | C0           | G                   | Green compound |

**RATINGS AND CHARACTERISTICS CURVES**

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

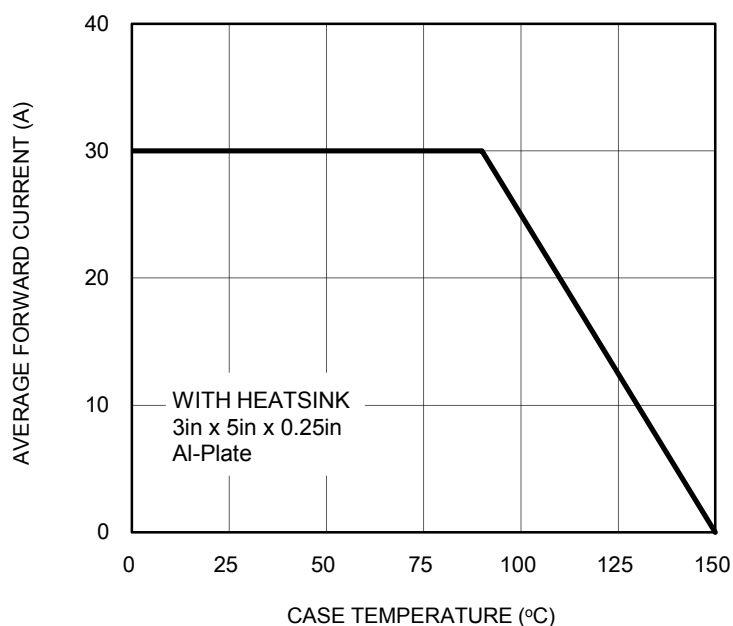
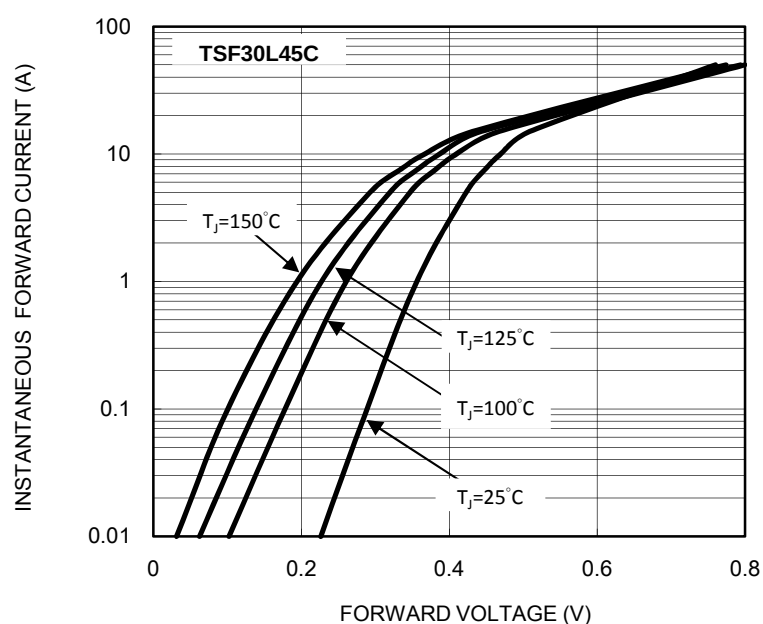
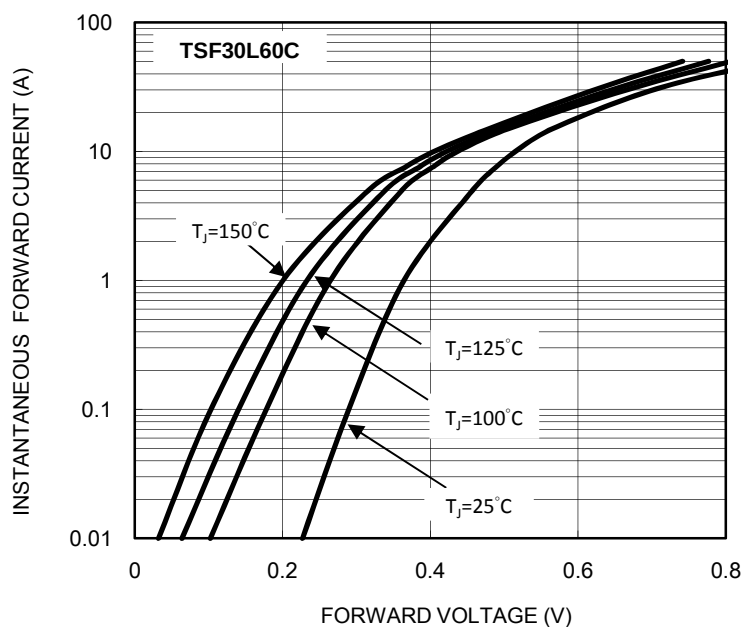
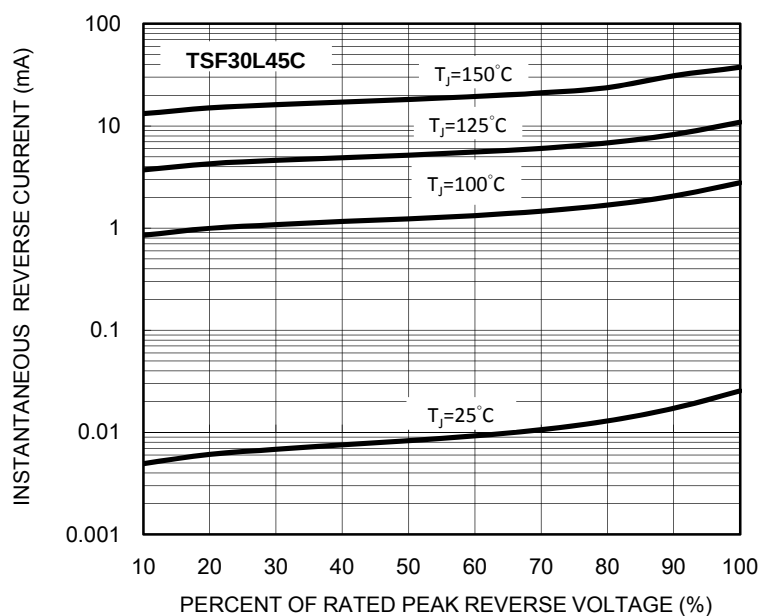
**FIG. 1 FORWARD CURRENT DERATING CURVE**

**FIG. 2 TYPICAL FORWARD CHARACTERISTICS**

**FIG. 3 TYPICAL FORWARD CHARACTERISTICS**

**FIG. 4 TYPICAL REVERSE CHARACTERISTICS**


FIG. 5 TYPICAL REVERSE CHARACTERISTICS

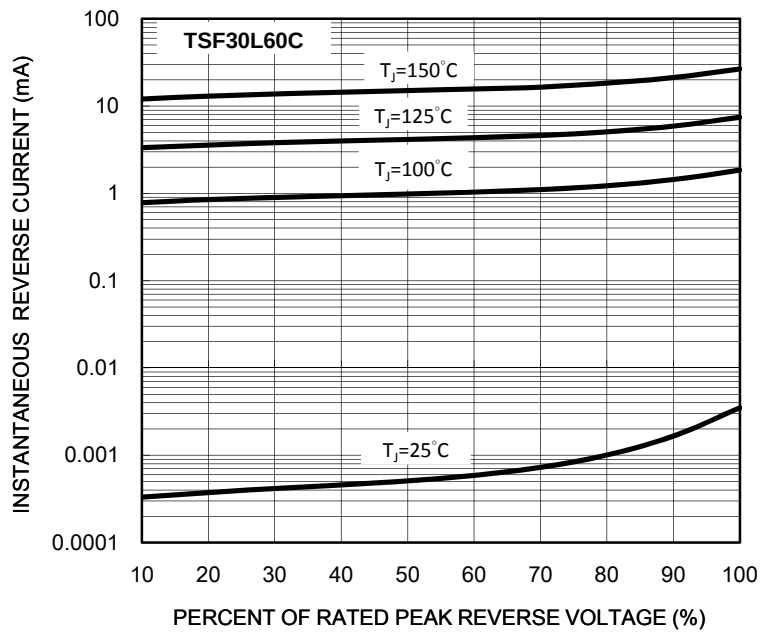
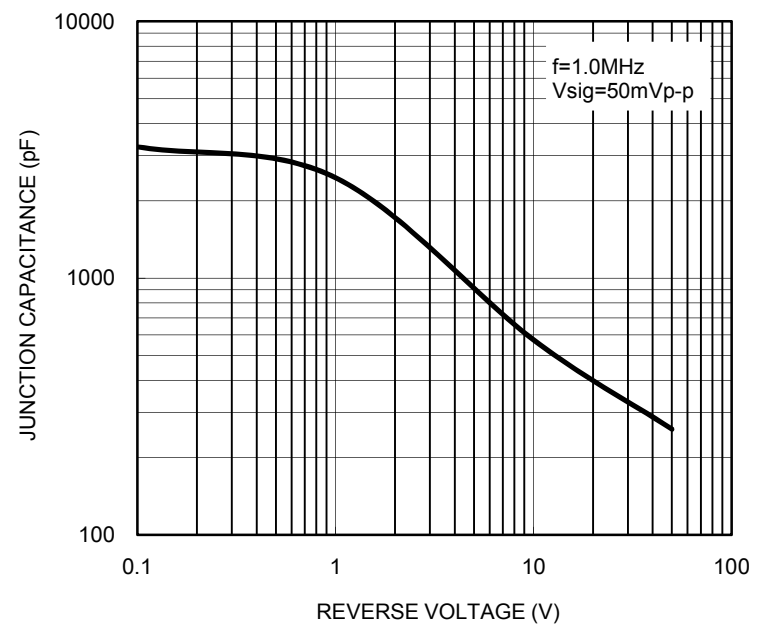
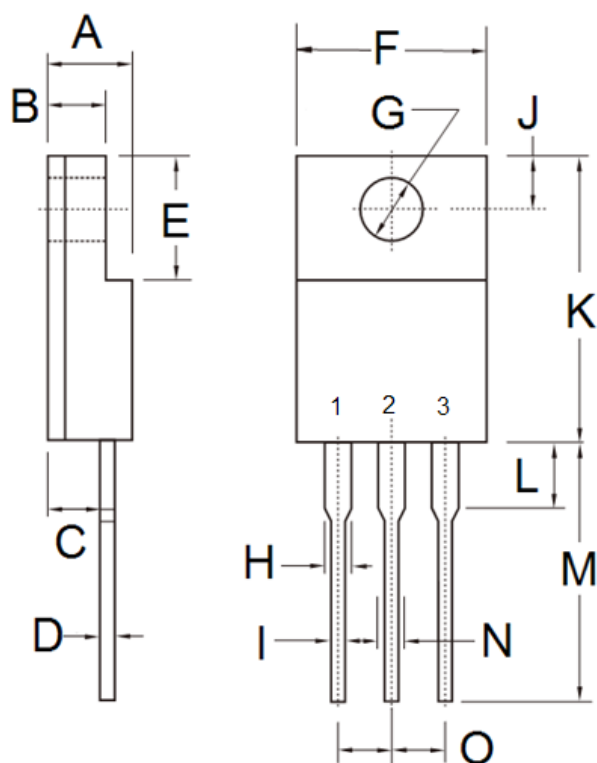


FIG. 6 TYPICAL JUNCTION CAPACITANCE

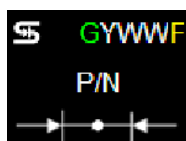


PACKAGE OUTLINE DIMENSIONS  
ITO-220AB



| DIM. | Unit (mm) |       | Unit (inch) |      |
|------|-----------|-------|-------------|------|
|      | Min       | Max   | Min         | Max  |
| A    | 4.30      | 4.70  | 0.17        | 0.19 |
| B    | 2.50      | 3.16  | 0.10        | 0.12 |
| C    | 2.30      | 2.96  | 0.09        | 0.12 |
| D    | 0.46      | 0.76  | 0.02        | 0.03 |
| E    | 6.30      | 6.90  | 0.25        | 0.27 |
| F    | 9.60      | 10.30 | 0.38        | 0.41 |
| G    | 3.00      | 3.40  | 0.12        | 0.13 |
| H    | 0.95      | 1.45  | 0.04        | 0.06 |
| I    | 0.50      | 0.90  | 0.02        | 0.04 |
| J    | 2.40      | 3.20  | 0.09        | 0.13 |
| K    | 14.80     | 15.50 | 0.58        | 0.61 |
| L    | -         | 4.10  | -           | 0.16 |
| M    | 12.60     | 13.80 | 0.50        | 0.54 |
| N    | -         | 1.80  | -           | 0.07 |
| O    | 2.41      | 2.67  | 0.09        | 0.11 |

MARKING DIAGRAM



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

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