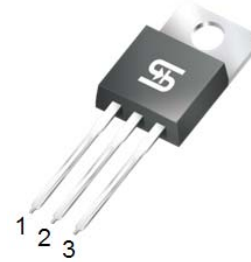


## 40A, 45V - 60V Trench Schottky Rectifiers

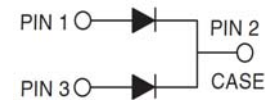
### FEATURES

- 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 <sub>A</sub> = 25°C unless otherwise noted) |                      |                        |                    |              |      |            |      |      |
|-----------------------------------------------------------------------------------------------|----------------------|------------------------|--------------------|--------------|------|------------|------|------|
| PARAMETER                                                                                     |                      |                        | SYMBOL             | TST40L45CW   |      | TST40L60CW |      | 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> | 40           |      |            |      | A    |
|                                                                                               | per diode            |                        |                    | 20           |      |            |      |      |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load per diode |                      |                        | I <sub>FSM</sub>   | 250          |      |            |      | 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> = 20A | T <sub>J</sub> = 25°C  | V <sub>F</sub>     | 0.49         | 0.59 | 0.53       | 0.63 | V    |
|                                                                                               | I <sub>F</sub> = 20A | T <sub>J</sub> = 125°C |                    | 0.43         | 0.53 | 0.47       | 0.57 |      |
| Maximum 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 |                    | 100          |      |            |      | mA   |
| Typical thermal resistance per diode                                                          |                      |                        | R <sub>θJC</sub>   | 3            |      |            |      | °C/W |
|                                                                                               |                      |                        | R <sub>θJL</sub>   | 3            |      |            |      |      |
| 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   |
|---------------------------|--------------|---------------------|----------|-----------|
| TST40LXXCW<br>(Note 1, 2) | C0           | G                   | TO-220AB | 50 / Tube |

Note 1: "XX" defines voltage from 45V (TST40L45CW) to 60V (TST40L60CW)

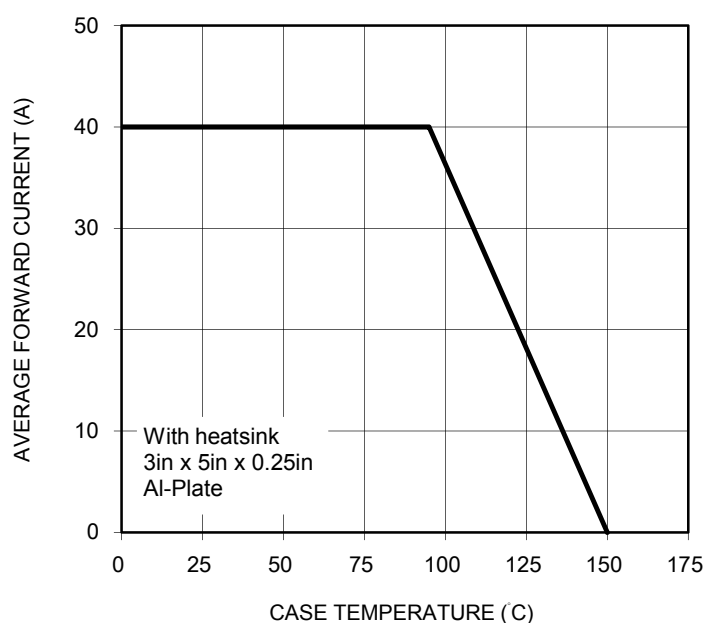
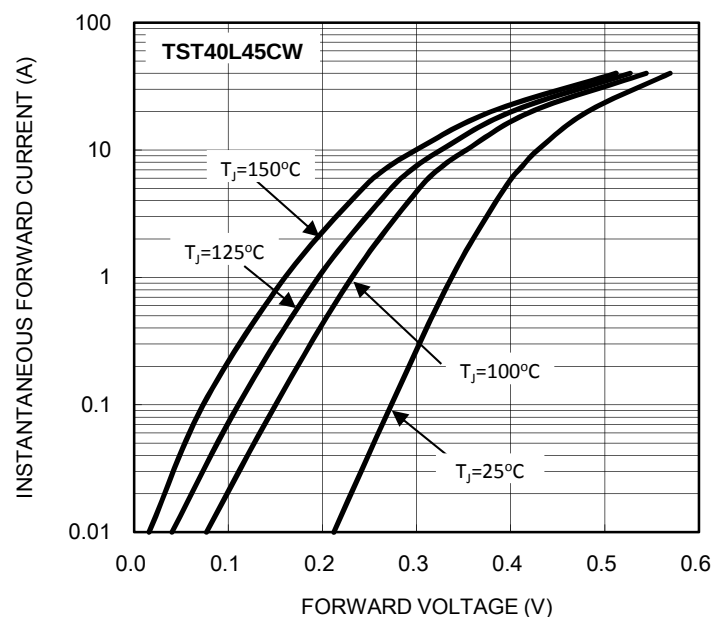
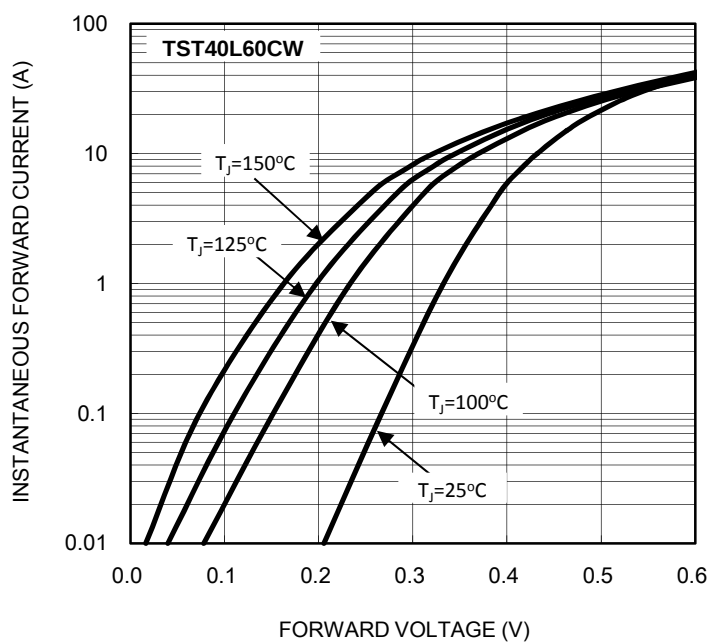
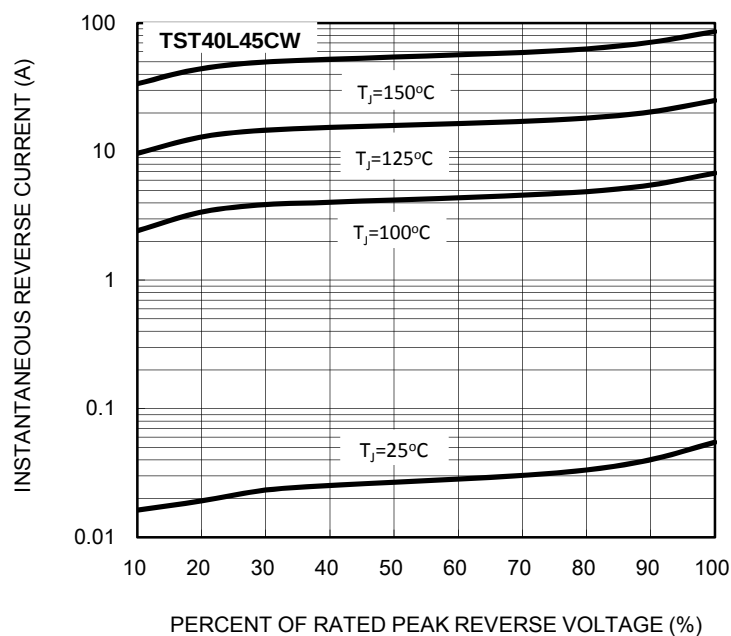
Note 2: Whole series with green compound

**EXAMPLE**

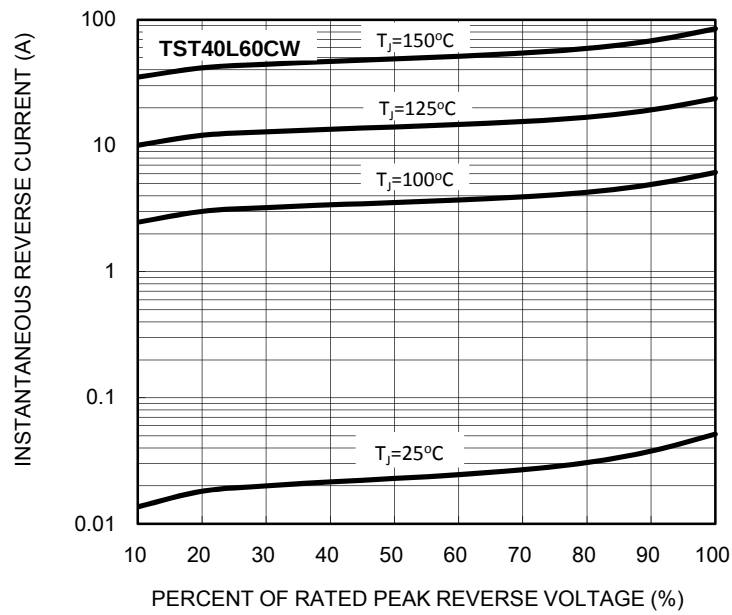
| EXAMPLE PART NO. | PART NO.   | PACKING CODE | PACKING CODE SUFFIX | DESCRIPTION    |
|------------------|------------|--------------|---------------------|----------------|
| TST40L60CW C0G   | TST40L60CW | C0           | G                   | Green compound |

**RATINGS AND CHARACTERISTICS CURVES**

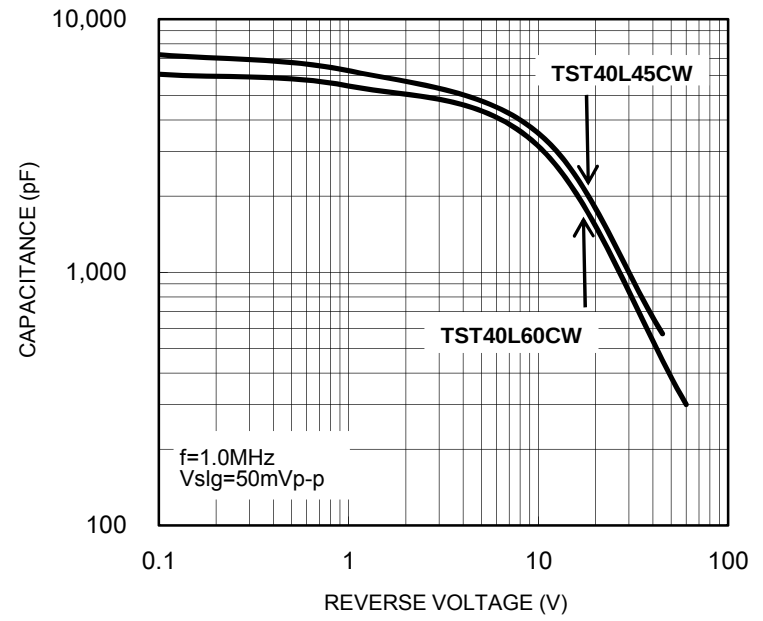
( $T_A = 25^\circ\text{C}$  unless otherwise noted)

**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**



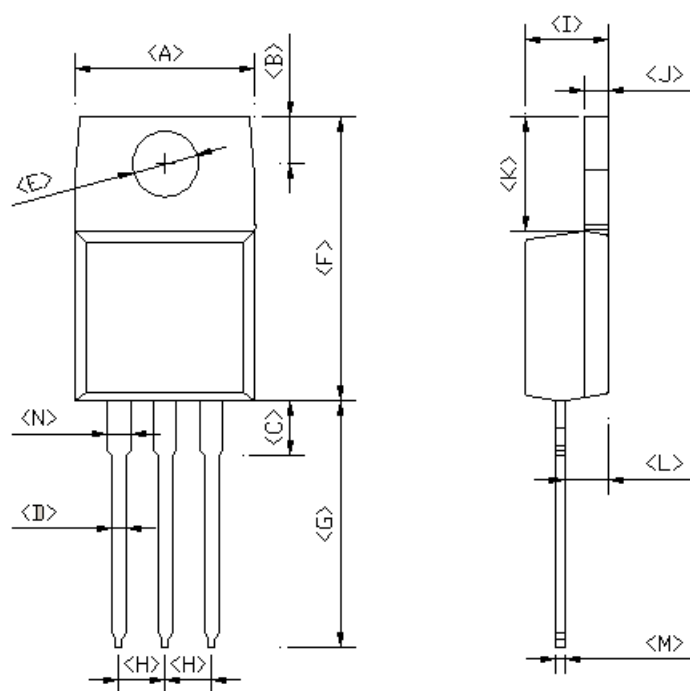
**FIG.6 TYPICAL JUNCTION CAPACITANCE**



**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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