

TOSHIBA Schottky Barrier Rectifier Stack Schottky Barrier Type

# U5GWJ2C42C

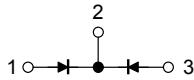
## Switching Mode Power Supply Application

- Peak forward voltage:  $V_{FM} = 0.55 \text{ V (max)}$
- Repetitive peak reverse voltage:  $V_{RRM} = 40 \text{ V}$
- Average output rectified current:  $I_O = 5 \text{ A}$

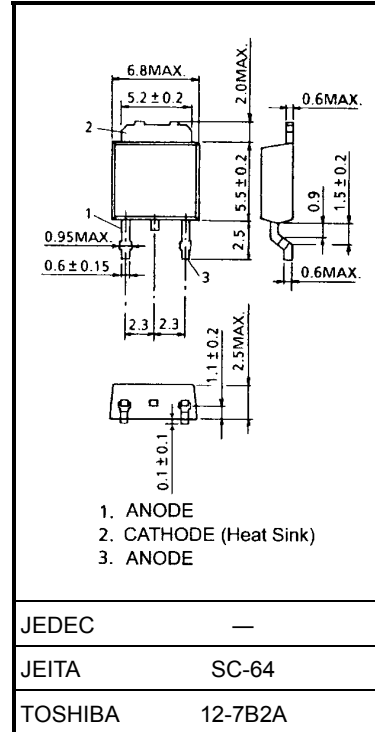
### Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| Characteristics                      | Symbol    | Rating     | Unit             |
|--------------------------------------|-----------|------------|------------------|
| Repetitive peak reverse voltage      | $V_{RRM}$ | 40         | V                |
| Average output rectified current     | $I_O$     | 5.0        | A                |
| Peak one cycle surge forward current | $I_{FSM}$ | 50 (50 Hz) | A                |
| Junction temperature                 | $T_j$     | -40~150    | $^\circ\text{C}$ |
| Storage temperature range            | $T_{stg}$ | -40~150    | $^\circ\text{C}$ |

### Polarity



Unit: mm



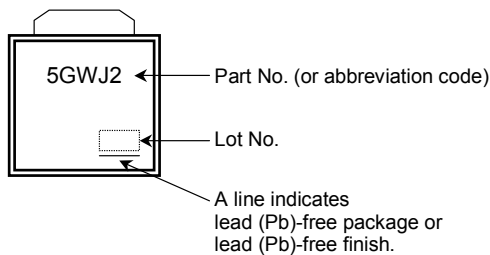
### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

Weight: 0.3 g (typ.)

| Characteristics                 | Symbol        | Test Condition                            | Min | Typ. | Max  | Unit               |
|---------------------------------|---------------|---|-----|------|------|--------------------|
| Peak forward voltage            | $V_{FM}$      | $I_{FM} = 2.5 \text{ A}$                  | —   | —    | 0.55 | V                  |
| Repetitive peak reverse current | $I_{RRM}$     | $V_{RRM} = \text{Rated (40 V)}$           | —   | —    | 3.5  | mA                 |
| Junction capacitance            | $C_j$         | $V_R = 10 \text{ V}, f = 1.0 \text{ MHz}$ | —   | 100  | —    | pF                 |
| Thermal resistance              | $R_{th(j-c)}$ | Total DC                                  | —   | —    | 3.5  | $^\circ\text{C/W}$ |

Note:  $V_{FM}$ ,  $I_{RRM}$ ,  $C_j$ : A value applied to one cell.

### Marking



| Abbreviation Code | Part No.   |
|-------------------|------------|
| 5GWJ2             | U5GWJ2C42C |

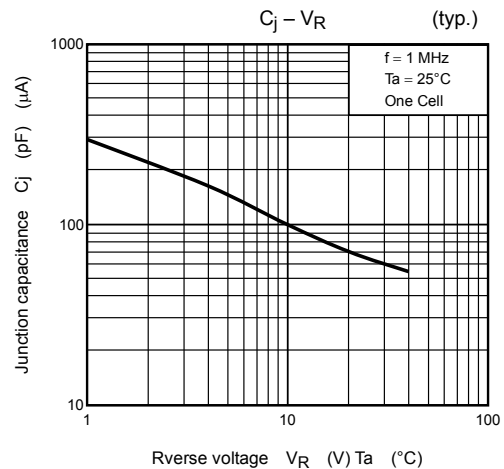
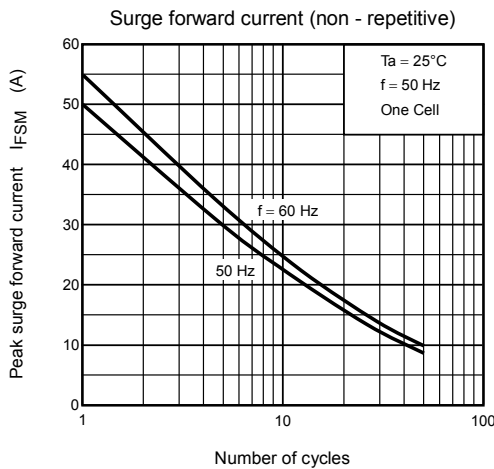
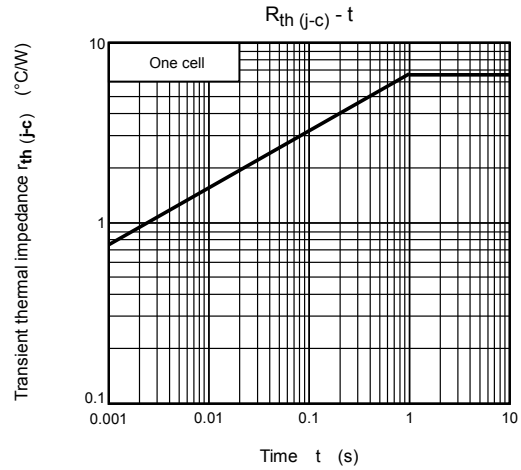
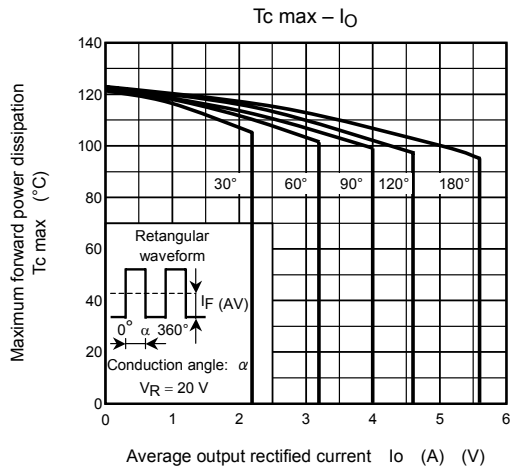
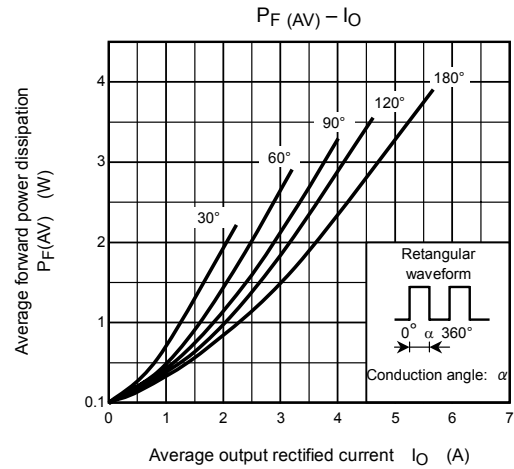
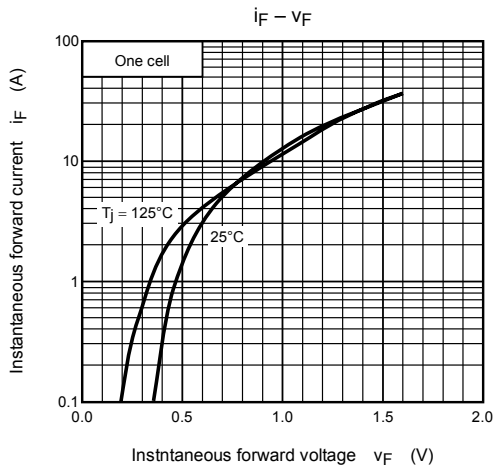
**Handling Precaution**

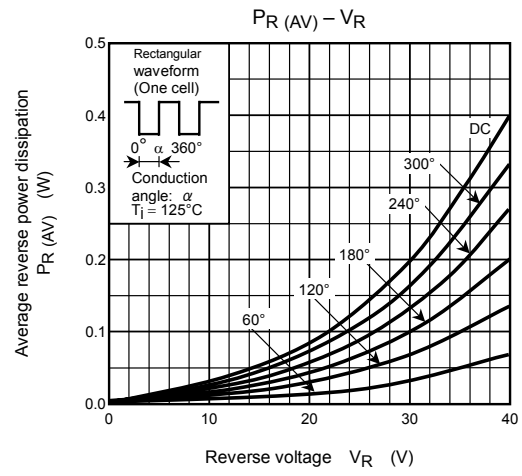
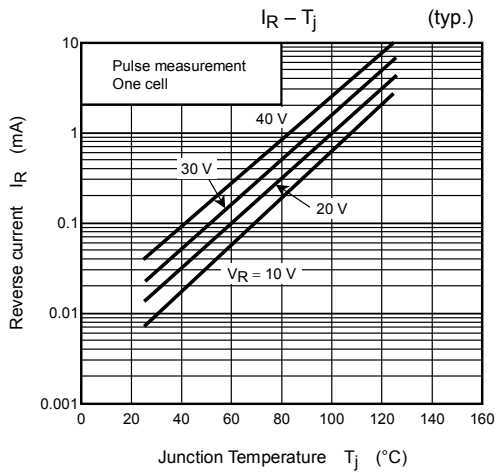
Schottky barrier diodes have reverse current characteristics compared to other diodes. There is a possibility SBD may cause thermal runaway when it is used under high temperature or high voltage. Please take forward and reverse loss into consideration during design.

The maximum ratings denote the absolute maximum ratings, which are rated values and must not be exceeded during operation, even for an instant. The following are the general derating methods that we recommend when you design a circuit with a device.

- V<sub>RRM</sub>: Use this rating with reference to the above. V<sub>RRM</sub> has a temperature coefficient of 0.1%/°C. Take this temperature coefficient into account designing a device at low temperature.
- I<sub>O</sub>: We recommend that the worst case current be no greater than 80% of the maximum rating of I<sub>O</sub> and T<sub>j</sub> be below 100°C. When using this device, take the margin into consideration by using an allowable Tamax-I<sub>O</sub> curve.
- I<sub>FSM</sub>: This rating specifies the non-repetitive peak current. This is only applied for an abnormal operation, which seldom occurs during the lifespan of the device.
- T<sub>j</sub>: Derate this rating when using a device in order to ensure high reliability. We recommend that the device be used at a T<sub>j</sub> of below 100°C.

Please refer to the Rectifiers databook for further information.





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