

TOSHIBA SCHOTTKY BARRIER RECTIFIER SCHOTTKY BARRIER TYPE

# 1FWJ43M

## HIGH SPEED RECTIFIER APPLICATIONS

- Low Forward Voltage:  $V_{FM} = 0.45V$  (Max)
- Low Reverse Current:  $I_{RRM} = 0.5mA$  (Max)
- Average Forward Current:  $I_F (AV) = 1.0A$
- Repetitive Peak Reverse Voltage:  $V_{RRM} = 30V$

## MAXIMUM RATINGS ( $T_a = 25^\circ C$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Reverse Voltage	$V_{RRM}$	30	V
Average Forward Current	$I_F (AV)$	1.0	A
Peak One Cycle Surge Forward Current (Non-Repetitive)	$I_{FSM}$	20 (50Hz)	A
Junction Temperature	$T_j$	-40~125	$^\circ C$
Storage Temperature Range	$T_{stg}$	-40~125	$^\circ C$

Unit: mm

1. ANODE  
2. CATHODE

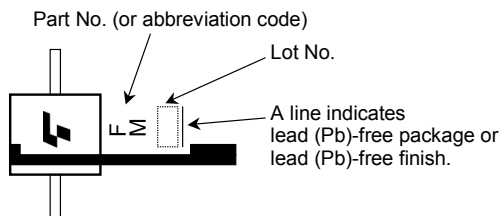
JEDEC	—
JEITA	—
TOSHIBA	3-3F2A

## ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

Weight: 0.18 g (typ.)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Peak Forward Voltage	$V_{FM}$	$I_{FM} = 1.0A$	—	—	0.45	V
Repetitive Peak Reverse Current	$I_{RRM}$	$V_{RRM} = 30V$	—	—	0.5	mA
Junction Capacitance	$C_j$	$V_R = 10V, f = 1MHz$	—	60	—	pF

## MARKING



Abbreviation Code	Part No.
FM	1FWJ43M

## Handling Precaution

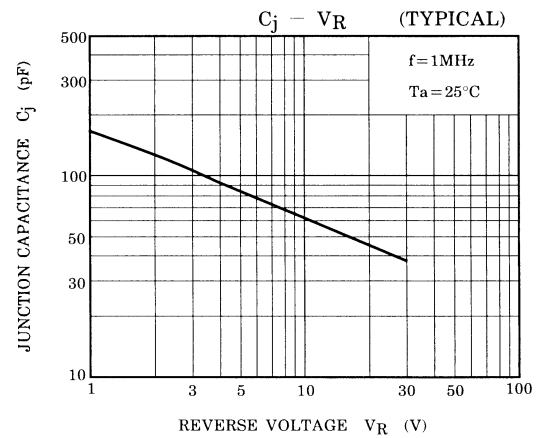
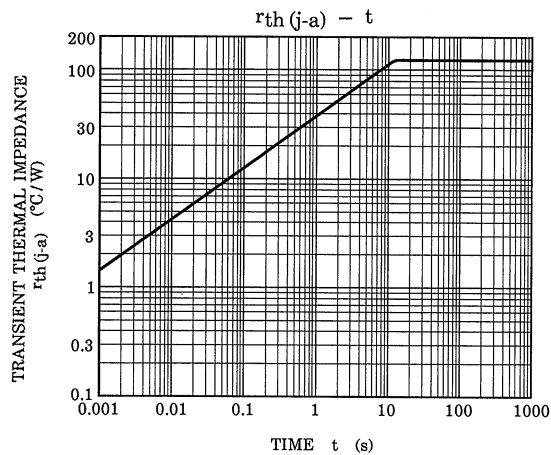
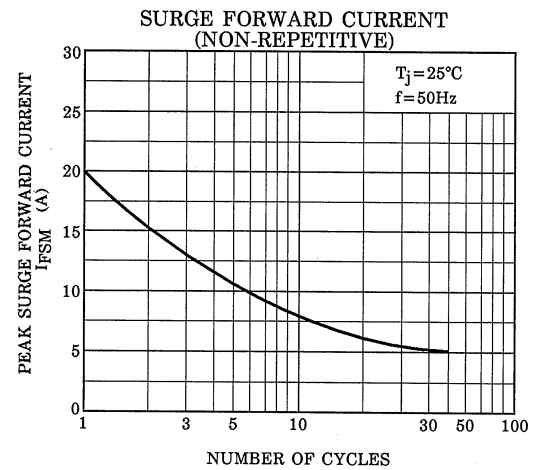
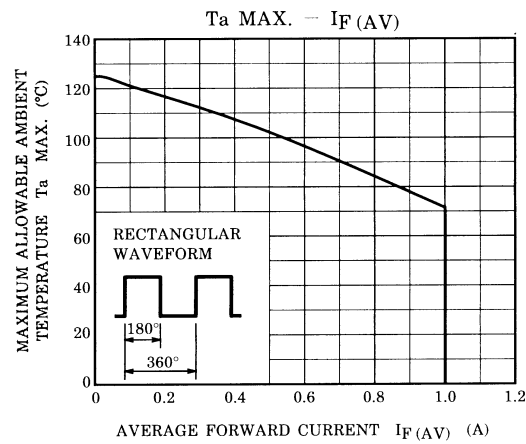
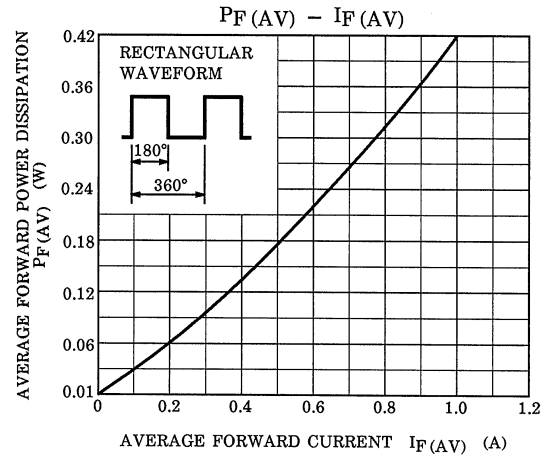
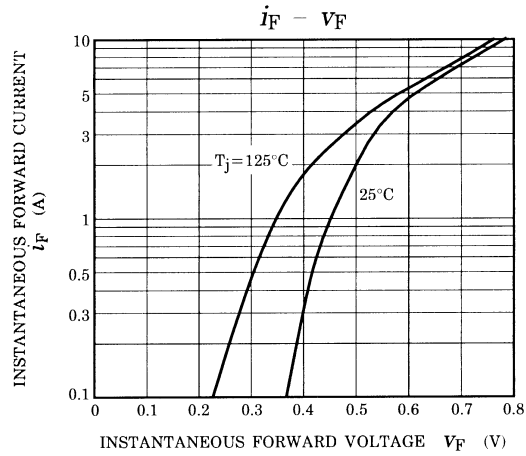
Schottky barrier diodes have reverse current characteristics compared to other diodes. There is a possibility SBD may cause thermal runaway when it is used under high temperature or high voltage. Please take forward and reverse loss into consideration during design.

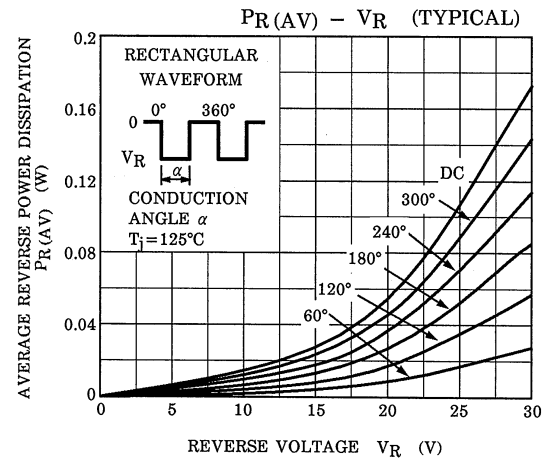
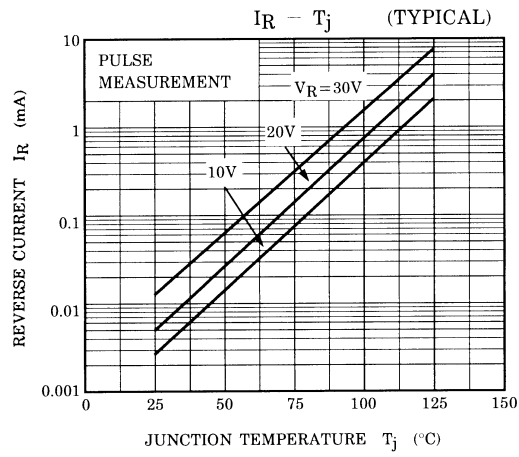
The maximum ratings denote the absolute maximum ratings, which are rated values and must not be exceeded during operation, even for an instant. The following are the general derating methods that we recommend when you design a circuit with a device.

- VRRM: Use this rating with reference to the above. VRRM has a temperature coefficient of 0.1%/°C. Take this temperature coefficient into account designing a device at low temperature.
- IF(AV): We recommend that the worst case current be no greater than 80% of the maximum rating of IF(AV) and T<sub>j</sub> be below 100°C. When using this device, take the margin into consideration by using an allowable Tamax-IF(AV) curve.
- IFSM: 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.

Thermal resistance between junction and ambient fluctuates depending on the device's mounting condition. When using a device, design a circuit board and a soldering land size to match the appropriate thermal resistance value.

Please refer to the Rectifiers databook for further information.





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