

TOSHIBA SCHOTTKY BARRIER RECTIFIER STACK SCHOTTKY BARRIER TYPE

# 10FWJ2C48M,U10FWJ2C48M

LOW FORWARD VOLTAGE SCHOTTKY BARRIER DIODE  
 SWITCHING MODE POWER SUPPLY APPLICATION  
 CONVERTER & CHOPPER APPLICATION

- Peak Forward Voltage:  $V_{FM} \leq 0.47V$
- Repetitive Peak Reverse Voltage:  $V_{RRM} = 30V$
- Average Output Rectified Current:  $I_O = 10A$
- Low Switching Losses and Output Noise.

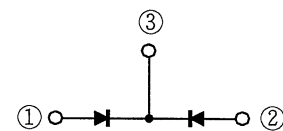
Unit: mm

10FWJ2C48M		U10FWJ2C48M	
JEDEC	—	JEDEC	—
JEITA	—	JEITA	—
TOSHIBA	12-10D1A	TOSHIBA	12-10D2A

## ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Reverse Voltage	$V_{RRM}$	30	V
Average Output Rectified Current	$I_O$	10	A
Peak One Cycle Surge Forward Current (Sine Wave)	$I_{FSM}$	100 (50Hz)	A
		110 (60Hz)	
Junction Temperature	$T_j$	-40~125	°C
Storage Temperature Range	$T_{stg}$	-40~150	°C

## POLARITY



Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

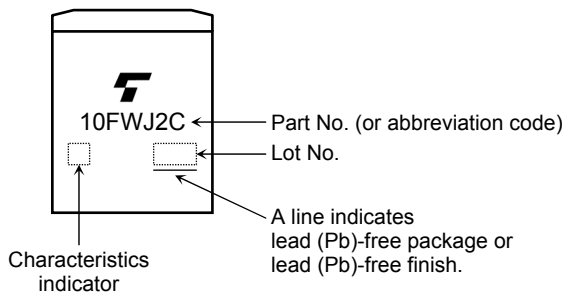
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/Derating Concept and Methods) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Peak Forward Voltage	V <sub>FM</sub>	I <sub>FM</sub> =5A	—	—	0.47	V
Repetitive Peak Reverse Current	I <sub>RRM</sub>	V <sub>RRM</sub> =30V	—	—	3.5	mA
Junction Capacitance	C <sub>j</sub>	V <sub>R</sub> =10V, f=1.0MHz	—	290	—	pF
Thermal Resistance	R <sub>th (j-c)</sub>	Total DC, Junction to Case	—	—	2.2	°C / W

V<sub>FM</sub>, I<sub>RRM</sub>, C<sub>j</sub> : A Value of one cell.

## MARKING



Abbreviation Code	Part No.
10FWJ2C	10FWJ2C48M
10FWJ2C	U10FWJ2C48M

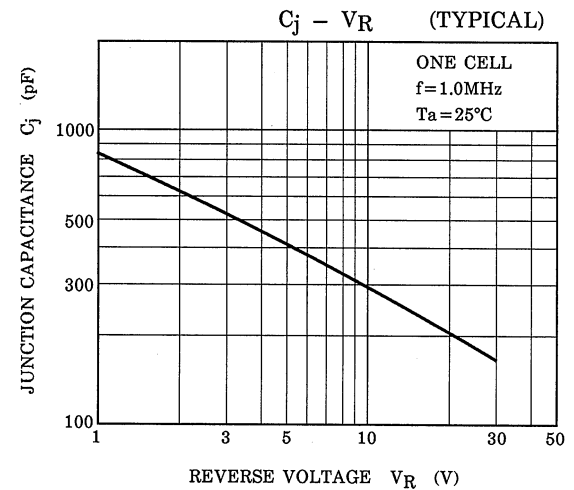
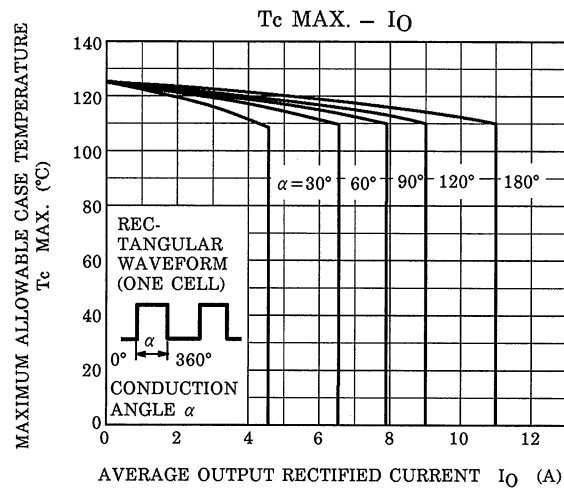
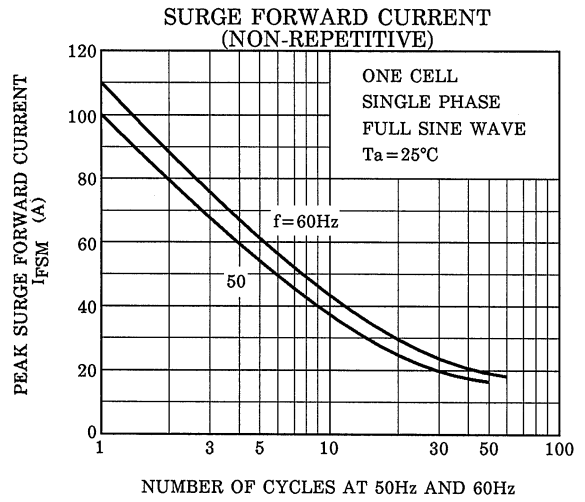
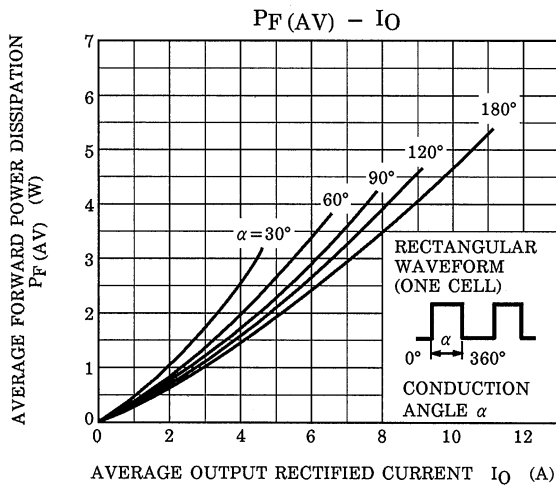
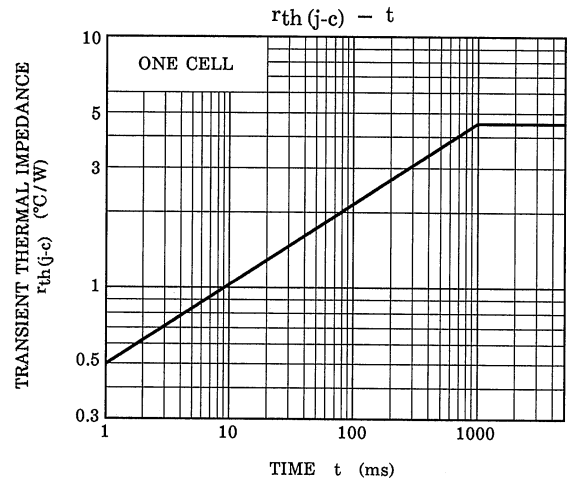
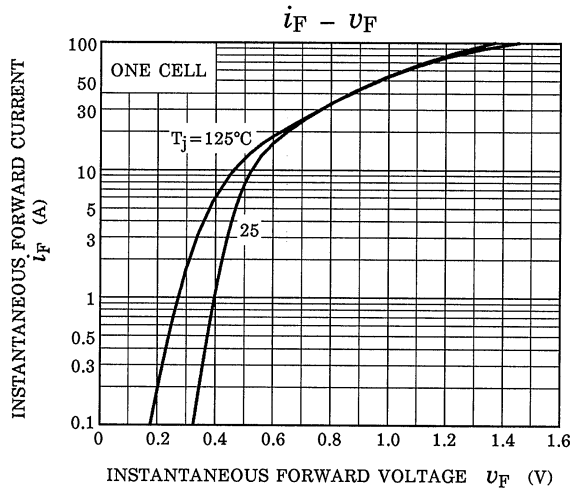
## Handling Precaution

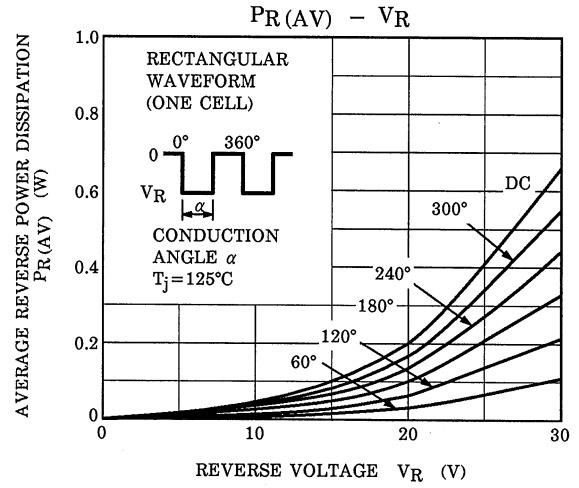
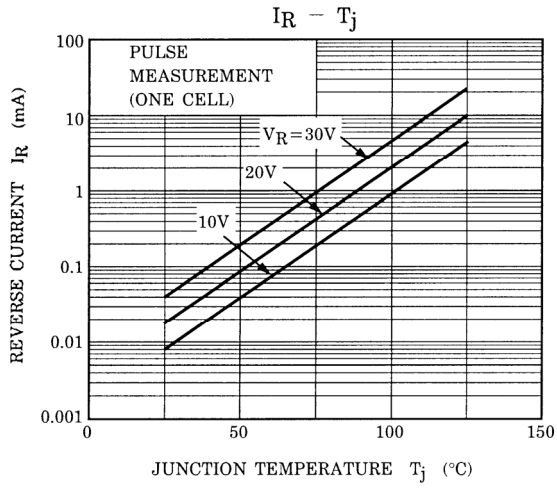
Schottky barrier diodes have reverse current characteristics compared to other diodes. There is a possibility SBD may cause thermal runaway when it is used under high temperature or high voltage. Please take forward and reverse loss into consideration during design.

The absolute 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 absolute 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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