

TOSHIBA SCHOTTKY BARRIER RECTIFIER STACK SCHOTTKY BARRIER TYPE

# 5FWJ2C48M, U5FWJ2C48M

SWITCHING MODE POWER SUPPLY APPLICATION  
 CONVERTER & CHOPPER APPLICATION

- Repetitive Peak Reverse Voltage :  $V_{RRM} = 30\text{ V}$
- Average Output Rectified Current :  $I_O = 5\text{ A}$
- Low Switching Losses and Output Noise

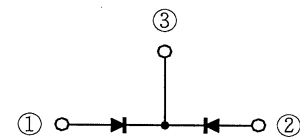
Unit: mm

5FWJ2C48M		U5FWJ2C48M	
JEDEC	—	JEDEC	—
JEITA	—	JEITA	—
TOSHIBA	12-10D1A	TOSHIBA	12-10D2A

## MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Reverse Voltage	$V_{RRM}$	30	V
Average Output Rectified Current	$I_O$	5	A
Peak One Cycle Surge Forward Current (Sine Wave)	$I_{FSM}$	50 (50Hz)	A
		55 (60Hz)	
Junction Temperature	$T_j$	-40~125	°C
Storage Temperature Range	$T_{stg}$	-40~150	°C

## POLARITY

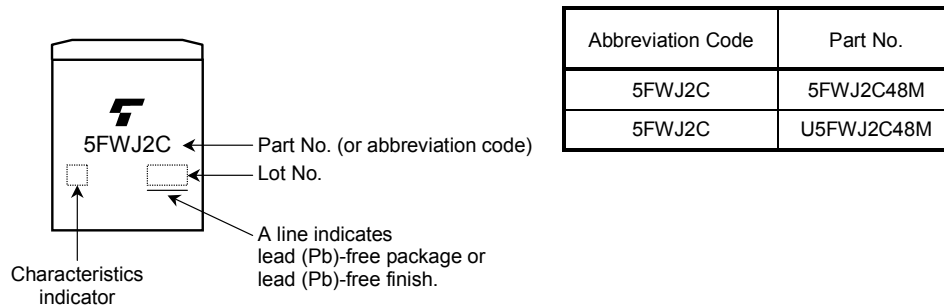


## ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	TYP.	MAX.	UNIT
Peak Forward Voltage	$V_{FM}$	$I_{FM}=2.5A$	—	0.47	V
Repetitive Peak Reverse Current	$I_{RRM}$	$V_{RRM}=\text{Rated}$	—	3.5	mA
Junction Capacitance	$C_j$	$V_R=10V, f=1.0MHz$	138	—	pF
Thermal Resistance	$R_{th(j-c)}$	Total DC, Junction to Case	—	3.0	°C / W

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

## MARKING



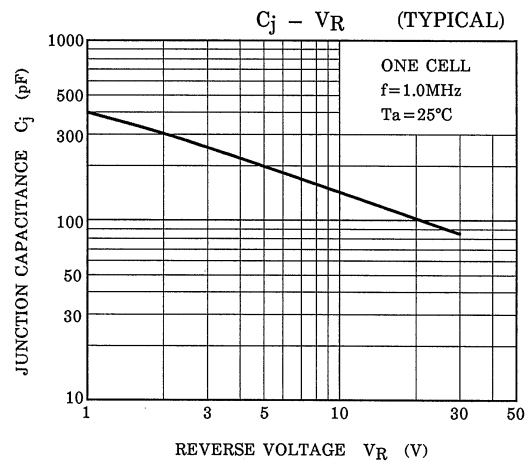
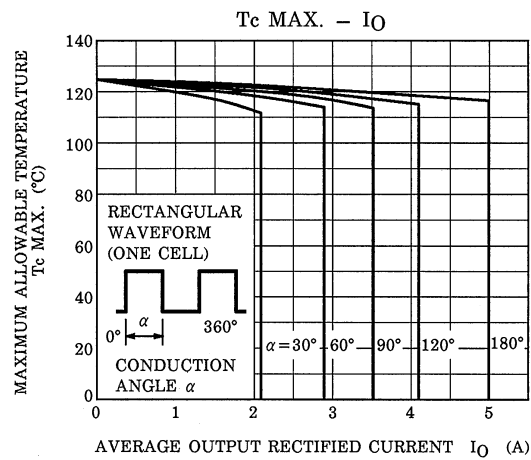
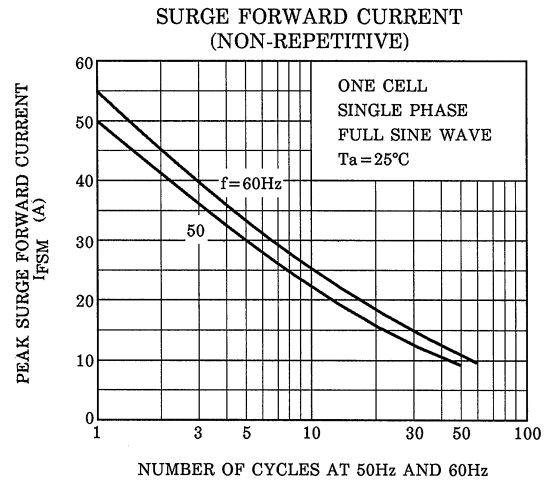
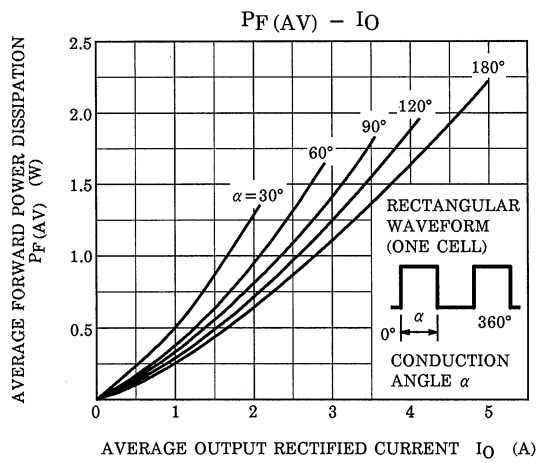
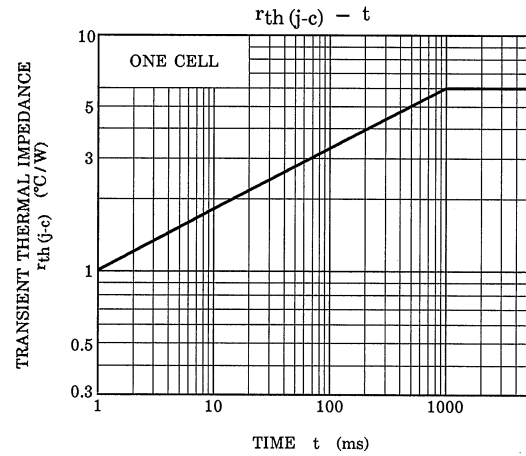
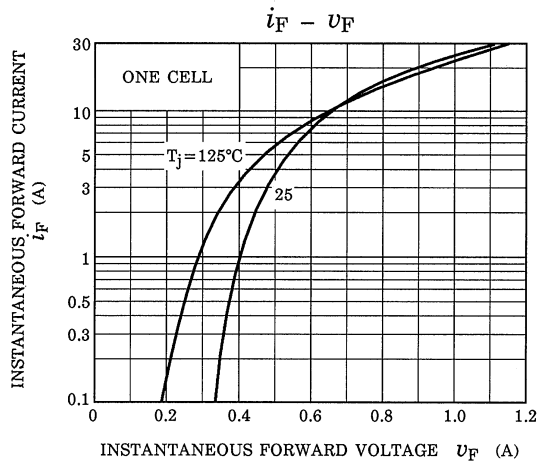
## Handling Precaution

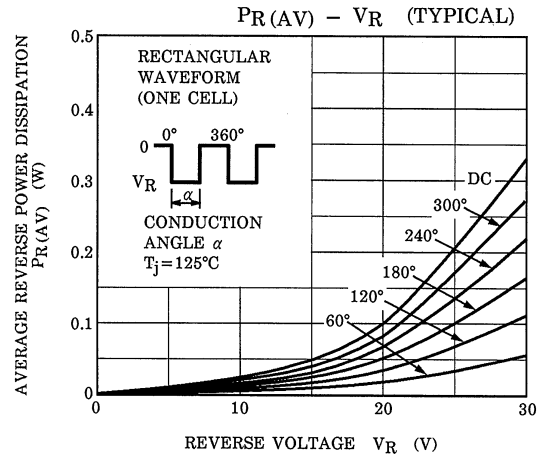
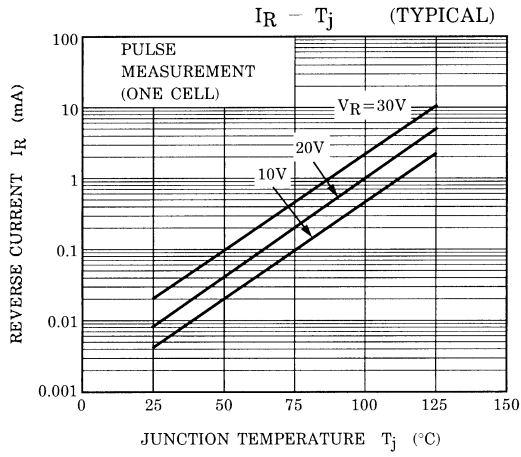
Schottky barrier diodes have reverse current characteristics compared to other diodes. There is a possibility SBD may cause thermal runaway when it is used under high temperature or high voltage. Please take forward and reverse loss into consideration during design.

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.

- $V_{RRM}$ :** Use this rating with reference to the above.  $V_{RRM}$  has a temperature coefficient of 0.1%/°C. Take this temperature coefficient into account designing a device at low temperature.
- $I_O$ :** We recommend that the worst case current be no greater than 80% of the maximum rating of  $I_O$  and  $T_j$  be below 100°C. When using this device, take the margin into consideration by using an allowable  $T_{max-I_O}$  curve.
- $I_{FSM}$ :** 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.
- $T_j$ :** Derate this rating when using a device in order to ensure high reliability. We recommend that the device be used at a  $T_j$  of below 100°C.

Please refer to the Rectifiers databook for further information.





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