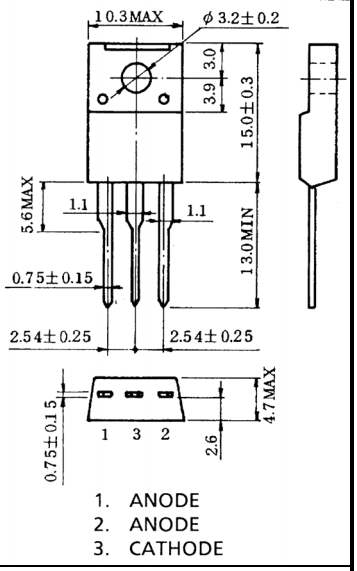
TOSHIBA SCHOTTKY BARRIER RECTIFIER STACK SCHOTTKY BARRIER TYPE

20FWJ2CZ47M

SWITCHING MODE POWER SUPPLY APPLICATION
CONVERTER & CHOPPER APPLICATION

- Peak Forward Voltage: VFM ≤ 0.47V
- Repetitive Peak Reverse Voltage: VRRM = 30V
- Average Output Rectified Current: IO = 20A
- Low Switching Losses and Output Noise.

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	12-10C1A

Weight: 2.0 g (typ.)

MAXIMUM RATINGS (Ta = 25°C)

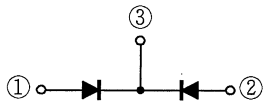
CHARACTERISTIC	SYMBOL	RATING	UNIT
Repetitive Peak Reverse Voltage	V_{RRM}	30	V
Average Output Rectified Current	I_O	20	A
Peak One Cycle Surge Forward Current (Sine Wave)	I_{FSM}	200 ($50H_Z$)	A
		220 ($60H_Z$)	
Junction Temperature	T_j	−40~125	°C
Storage Temperature Range	T_{stg}	−40~150	°C
Screw Torque	—	0.6	N·m

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

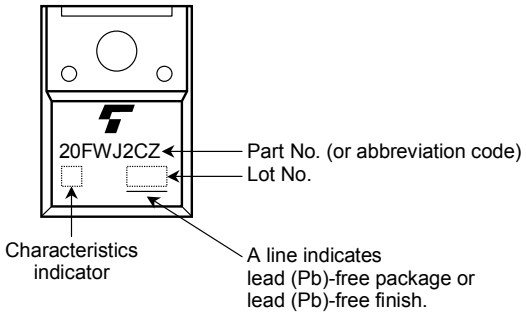
CHARACTERISTIC	SYMBOL	TEST CONDITION	TYP.	MAX	UNIT
Peak Forward Voltage (Note 1)	V_{FM}	I_{FM} = 10A	—	0.47	V
Repetitive Peak Reverse Current (Note 1)	I_{RRM}	V_{RRM} = Rated	—	10	mA
Junction Capacitance (Note 1)	C_j	V_R = 10V, f = 1.0MHz	680	—	pF
Thermal Resistance	$R_{th\ (j-c)}$	Total DC, Junction to Case	—	2.7	°C / W

Note 1: A value applied to one cell.

POLARITY



MARKING



Abbreviation Code	Part No.
20FWJ2CZ	20FWJ2CZ47M

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.

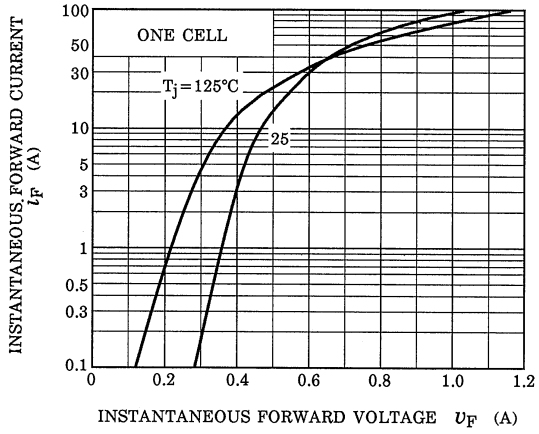
I_O: We recommend that the worst case current be no greater than 80% of the maximum rating of I_O and T_j be below 100°C. When using this device, take the margin into consideration by using an allowable Tamax-I_O curve.

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.

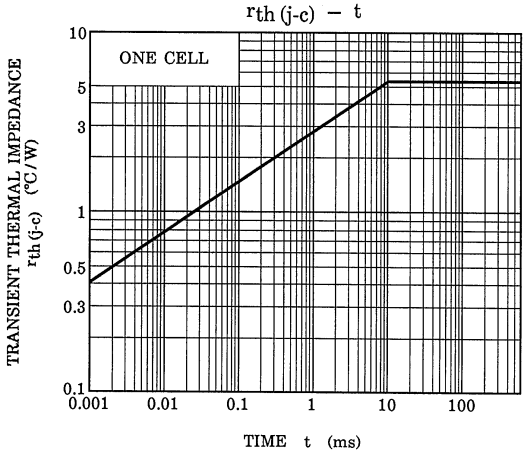
T_j: Derate this rating when using a device in order to ensure high reliability. We recommend that the device be used at a T_j of below 100°C.

Please refer to the Rectifiers databook for further information.

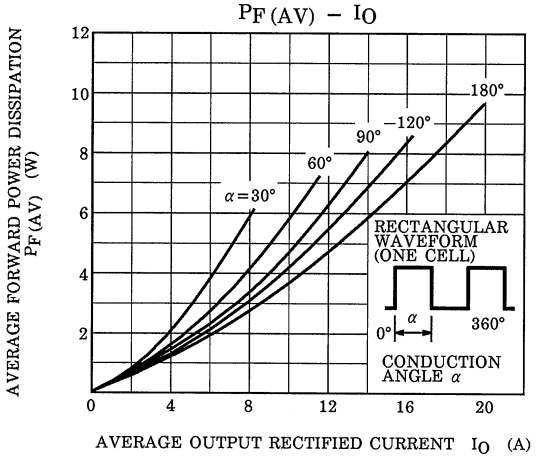
$i_F - v_F$



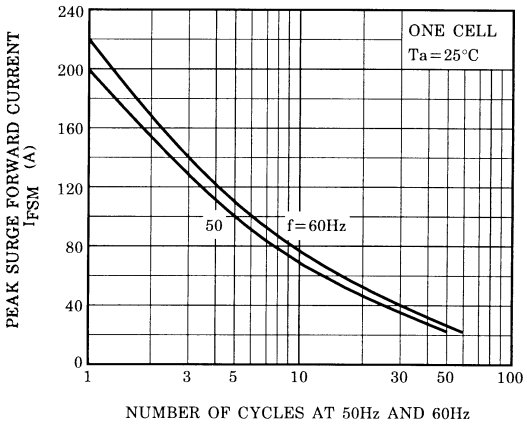
$r_{th\,(j\text{-}c)} - t$



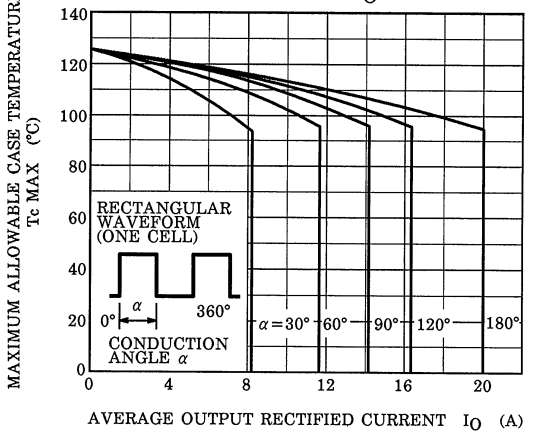
$P_{F\,(AV)} - I_O$



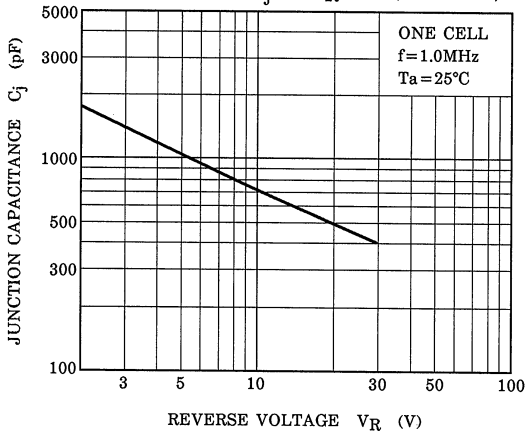
SURGE FORWARD CURRENT (NON-REPETITIVE)



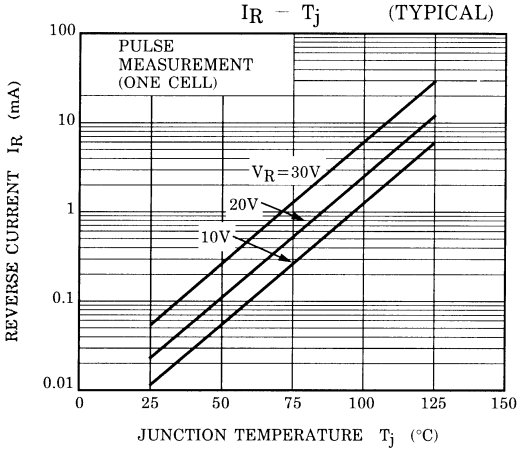
T_C MAX $- I_O$



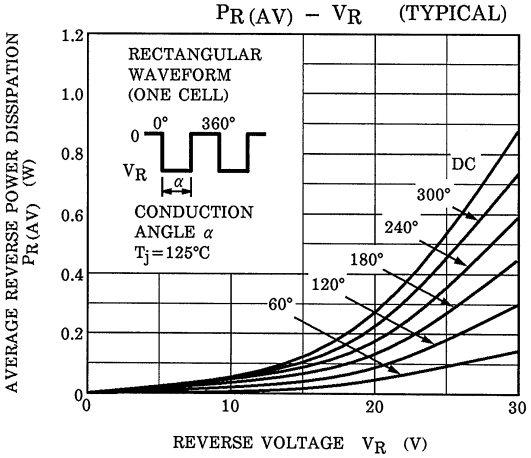
$C_j - V_R$ (TYPICAL)



I_R – T_j (TYPICAL)



$P_{R(AV)}$ – V_R (TYPICAL)



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