

TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

# CBS05F30

High-Speed Switching Application

Unit: mm

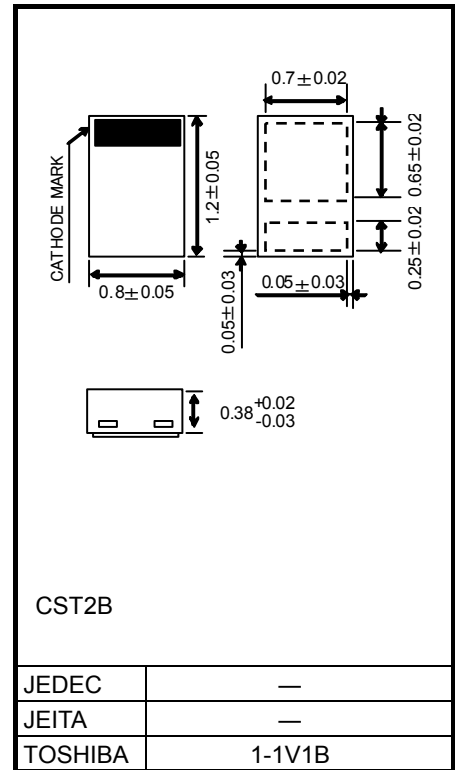
## Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Reverse voltage	$V_R$	30	V
Average forward current	$I_O$	500 *	mA
Surge current (10ms)	$I_{FSM}$	3	A
Junction temperature	$T_j$	125	°C
Storage temperature range	$T_{stg}$	-55 to 125	°C

\*: Mounted on a glass-epoxy circuit board of 20 mm × 20 mm, pad dimensions of 4 mm × 4 mm.

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).

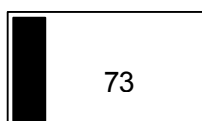


Weight: 0.7 mg (typ.)

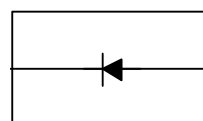
## Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_F (1)$	—	$I_F = 10 \text{ mA}$	—	0.23	—	V
	$V_F (2)$	—	$I_F = 100 \text{ mA}$	—	0.31	—	
	$V_F (3)$	—	$I_F = 500 \text{ mA}$	—	0.38	0.45	
Reverse current	$I_R$	—	$V_R = 30 \text{ V}$	—	5	50	μA
Total capacitance	$C_T$	—	$V_R = 0 \text{ V}, f = 1 \text{ MHz}$	—	118	—	pF

## Marking

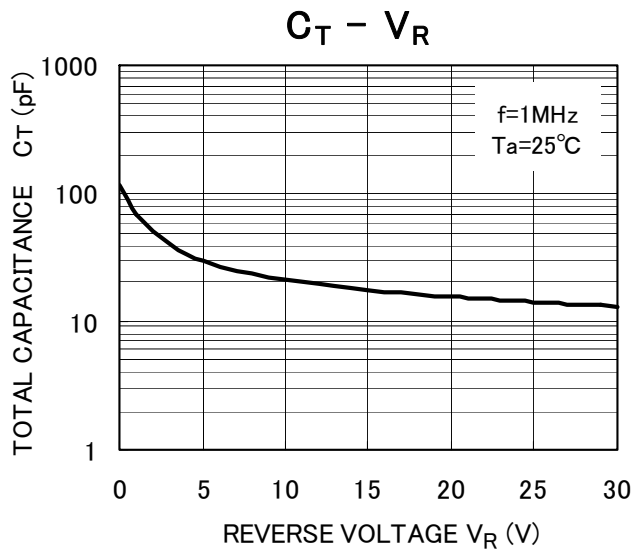
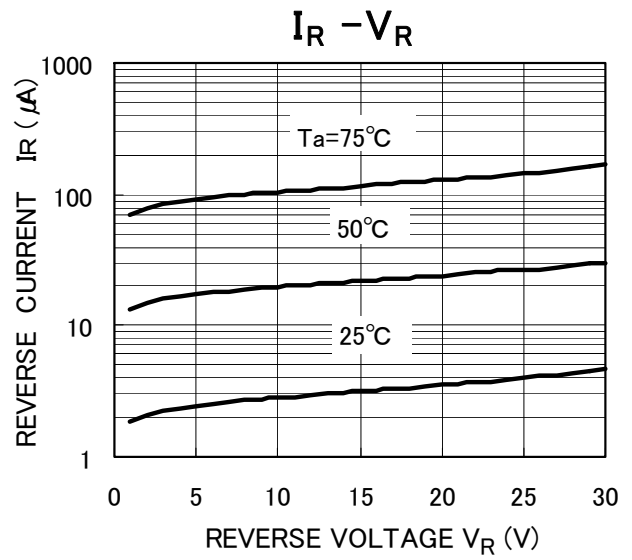
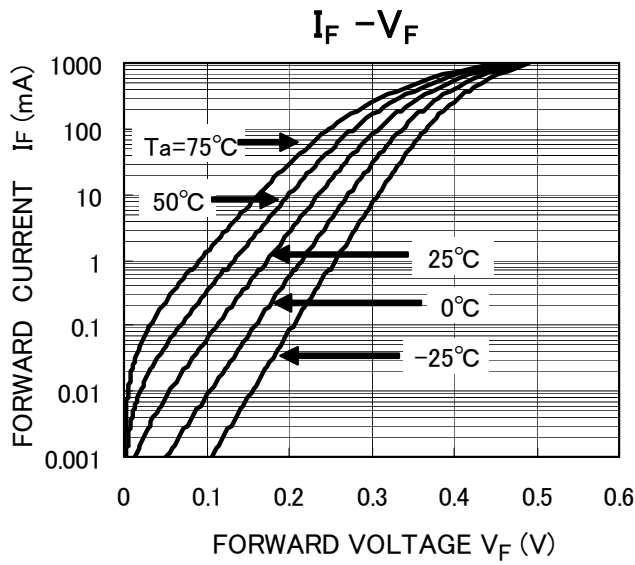


## Equivalent Circuit (Top View)



**Handling Precaution**

Schottky barrier diodes have reverse current characteristic compared to the 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.



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