Unit: mm

TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

# **DSF05S30U**

**High Speed Switching Application** 

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

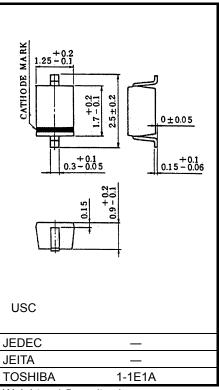
Characteristic	Symbol	Rating	Unit
Reverse voltage	$V_{R}$	30	٧
Average forward current	IO	500 *	mA
Surge current (10ms)	I <sub>FSM</sub>	5	Α
Junction temperature	Tj	125	°C
Storage temperature range	T <sub>stg</sub>	−55 to 125	°C

<sup>\*:</sup> Mounted on a glass-epoxy circuit board of 20 × 20 mm, pad dimensions of 4 × 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: 4.5 mg (typ.)

### **Electrical Characteristics (Ta = 25°C)**

Characteristic	Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit	
Forward voltage	V <sub>F (1)</sub>	_	I <sub>F</sub> = 10mA	1	0.23	-		
	V <sub>F (2)</sub>	_	I <sub>F</sub> = 200mA	-	0.35		V	
	V <sub>F (3)</sub>	_	I <sub>F</sub> = 500mA	_	0.40	0.45		
Reverse current	I <sub>R(1)</sub>	_	V <sub>R</sub> = 30V	_	5.3	50	μΑ	
Total capacitance	C <sub>T</sub>	_	V <sub>R</sub> = 0, f = 1 MHz	_	120	_	pF	

#### **Marking**



## **Handling Precaution**

**Equivalent Circuit (top view)** 

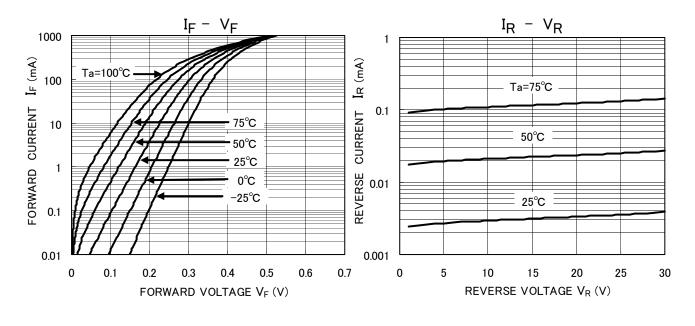


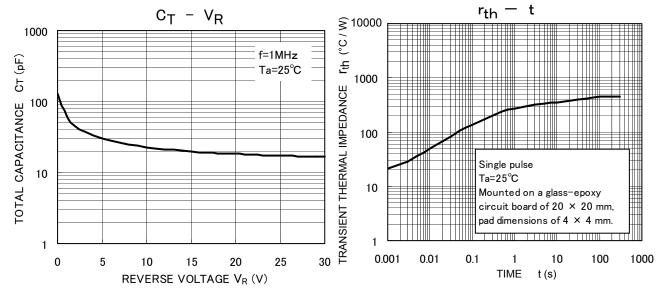
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Schottky barrier diodes have reverse current characteristic compared to the other diodes.

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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