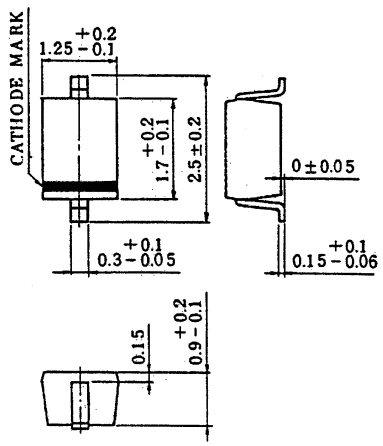
TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

DSF07S30U

High Speed Switching Application

Unit: mm



USC

JEDEC	—
JEITA	—
TOSHIBA	1-1E1A

Weight: 4.5 mg (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Reverse voltage	V_R	30	V
Average forward current	I_O	700 *	mA
Surge current (10ms)	I_{FSM}	5	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 × 20 mm, pad dimensions of 4 × 4 mm.

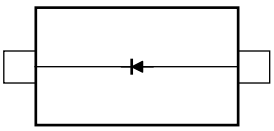
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_{F\ (1)}$	—	I_F = 10mA	—	0.20	—	V
	$V_{F\ (2)}$	—	I_F = 200mA	—	0.30	—	
	$V_{F\ (3)}$	—	I_F = 700mA	—	0.39	0.45	
Reverse current	$I_{R(1)}$	—	V_R = 30V	—	12	50	μA
Total capacitance	C_T	—	V_R = 0, f = 1 MHz	—	170	—	pF

Marking

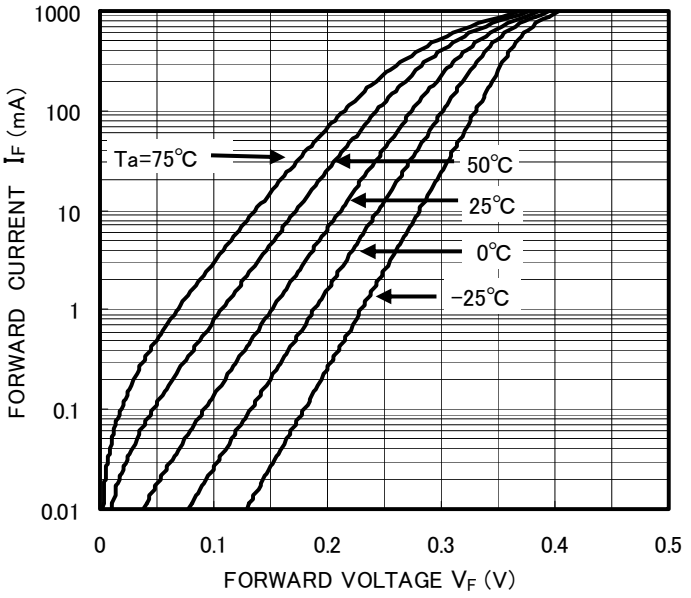
Equivalent Circuit (top view)



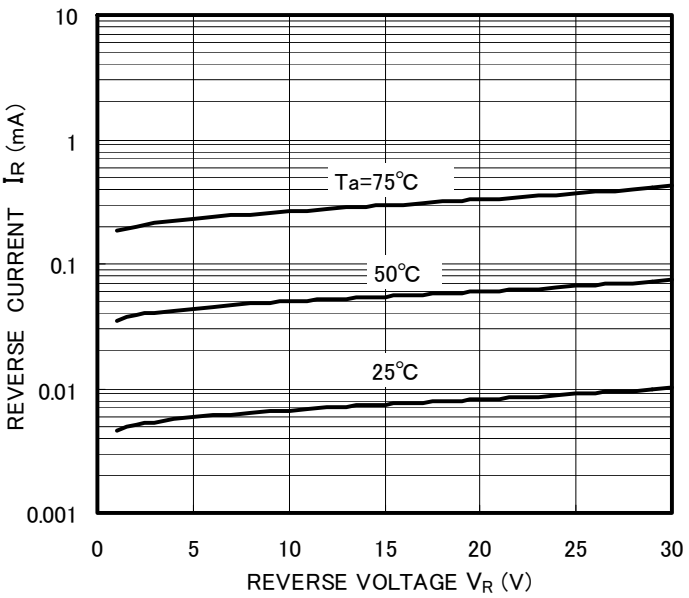
Handling Precaution

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.

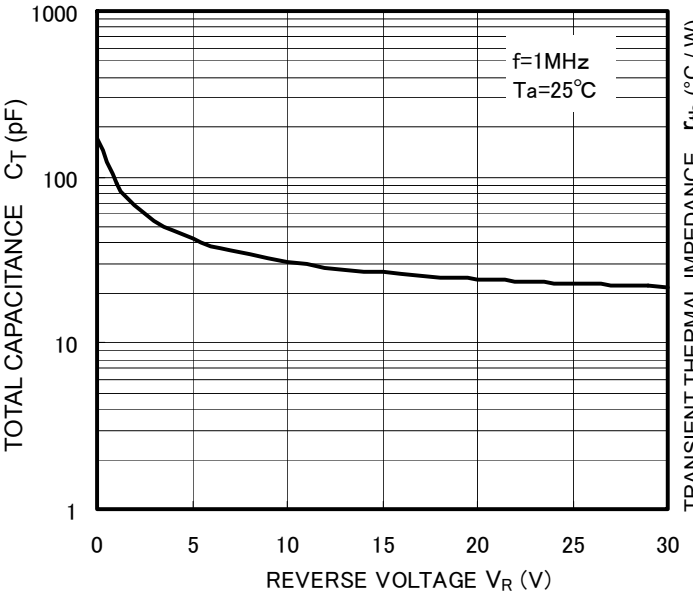
$I_F - V_F$



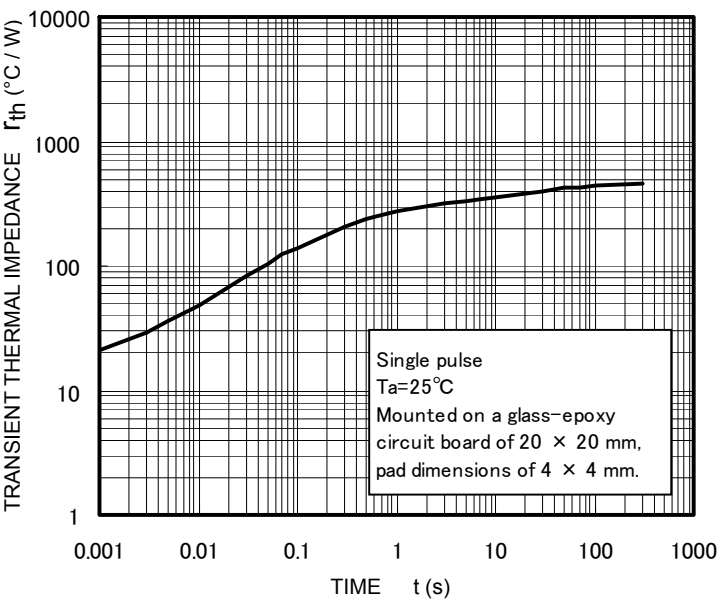
$I_R - V_R$



$C_T - V_R$



$r_{th} - t$



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