

TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

DSF05S30U

High Speed Switching Application

Unit: mm

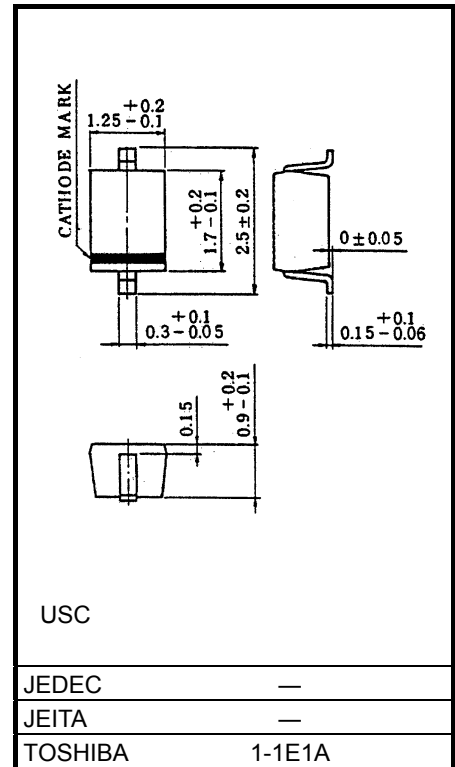
Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Reverse voltage	V_R	30	V
Average forward current	I_O	500 *	mA
Surge current (10ms)	I_{FSM}	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).

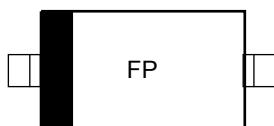


Weight: 4.5 mg (typ.)

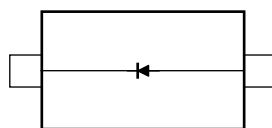
Electrical Characteristics (Ta = 25°C)

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)	—	$I_F = 200\text{mA}$	—	0.35	—	
	V_F (3)	—	$I_F = 500\text{mA}$	—	0.40	0.45	
Reverse current	$I_{R(1)}$	—	$V_R = 30\text{V}$	—	5.3	50	μA
Total capacitance	C_T	—	$V_R = 0, f = 1\text{MHz}$	—	120	—	pF

Marking

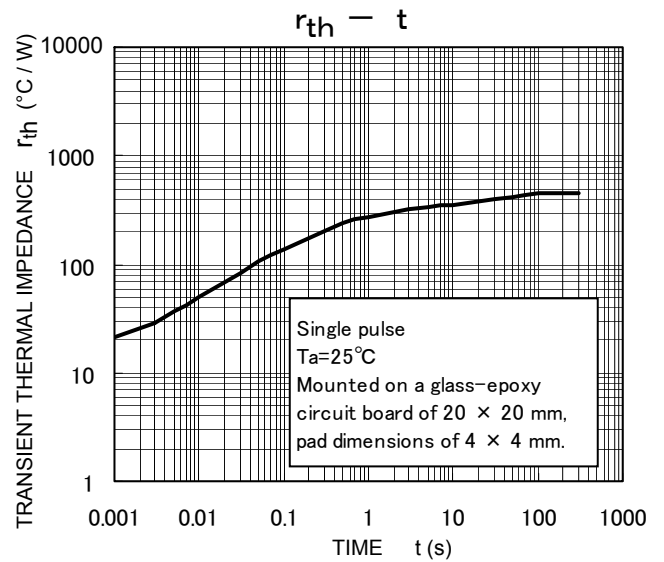
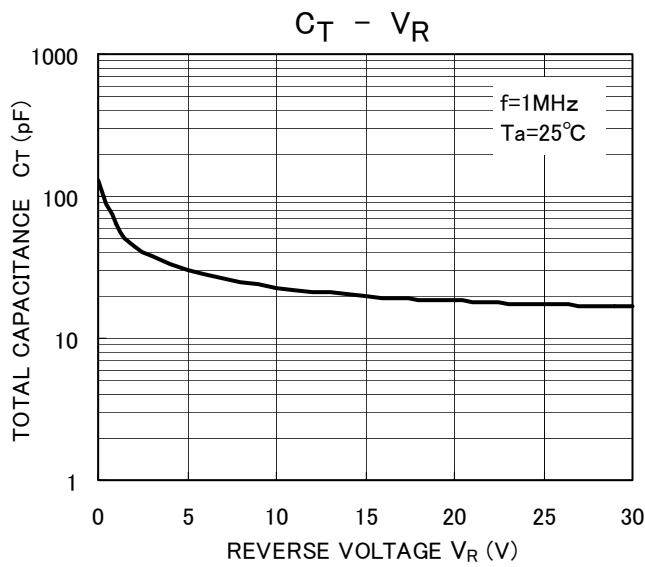
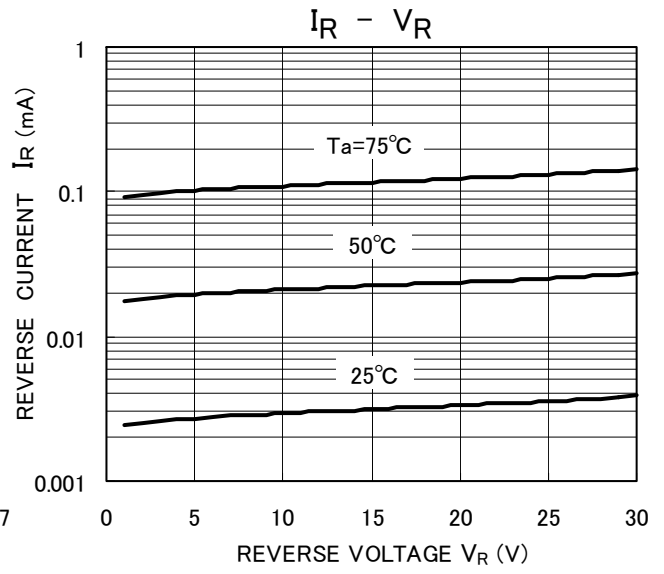
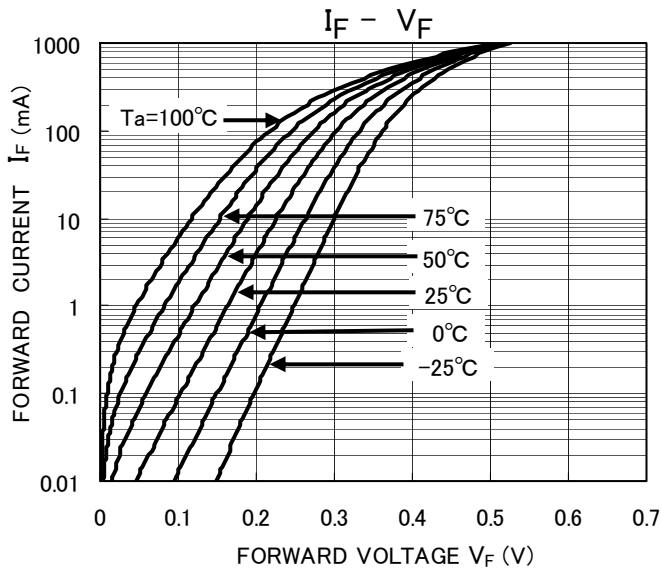


Equivalent Circuit (top view)



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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