TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

DSF05S30U

High Speed Switching Application

Absolute Maximum Ratings (Ta = 25°C)

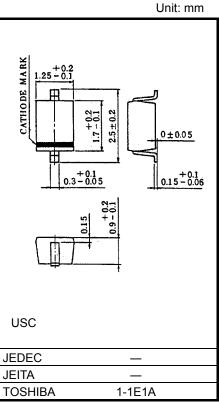
Characteristic	Symbol	Rating	Unit
Reverse voltage	V_{R}	30	V
Average forward current	IO	500 *	mA
Surge current (10ms)	I _{FSM}	5	Α
Junction temperature	Tj	125	°C
Storage temperature range	T _{stg}	−55 to 125	°C

^{*:} 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)

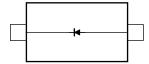
Characteristic	Symbol	Test Circuit	Test Condition	Min	Тур.	Max	Unit	
Forward voltage	V _{F (1)}	_	I _F = 10mA	-	0.23	_		
	V _{F (2)}	_	I _F = 200mA	_	0.35		V	
	V _{F (3)}	_	I _F = 500mA	_	0.40	0.45		
Reverse current	I _{R(1)}	_	V _R = 30V	_	5.3	50	μA	
Total capacitance	C _T	_	V _R = 0, f = 1 MHz	_	120	_	pF	

Marking



Handling Precaution

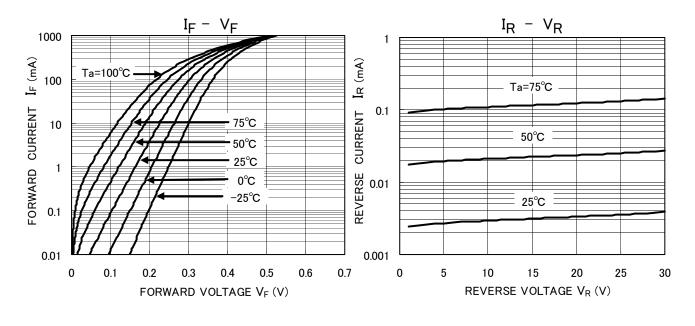
Equivalent Circuit (top view)

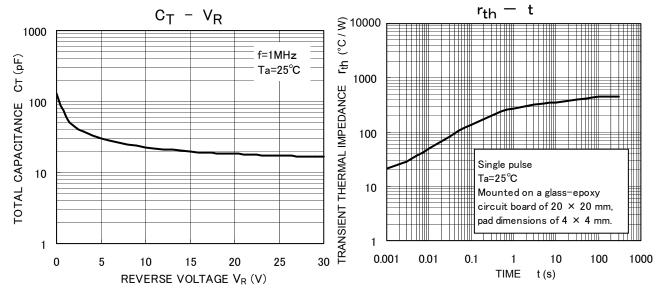


Schottky barrier diodes have reverse current characteristic compared to the other diodes.

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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