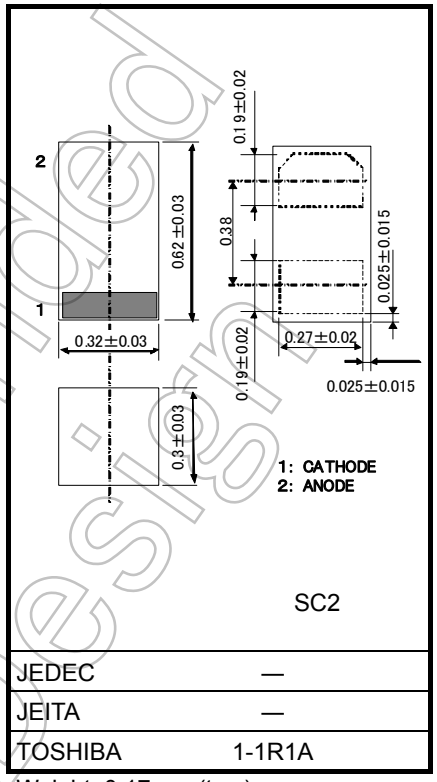
TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

DSF01S30SC

High-Speed Switching Application

Unit: mm



SC2

JEDEC	—
JEITA	—
TOSHIBA	1-1R1A

Weight: 0.17 mg (typ.)

Abusolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Reverse voltage	V_R	30	V
Average forward current	I_O	100*	mA
Surge current (10ms)	I_{FSM}	2	A
Junction temperature	T_j	125	°C
Storage temperature range	T_{stg}	−55 to 125	°C

*: Mounted on a FR4 board.

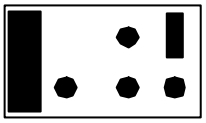
(25.4 mm × 25.4 mm × 1.6 mm, Cu Pad: 645 mm^2)

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).

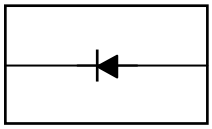
Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_{F(1)}$	I_F = 10 mA	—	0.27	0.3	V
Forward voltage	$V_{F(2)}$	I_F = 100 mA	—	0.41	0.5	V
Reverse current	$I_{R(1)}$	V_R = 10 V	—	—	7	μA
Reverse current	$I_{R(2)}$	V_R = 30 V	—	—	50	μA
Total capacitance	C_T	V_R = 0, f = 1 MHz	—	9.3	—	pF

Marking



Equivalent Circuit (Top View)

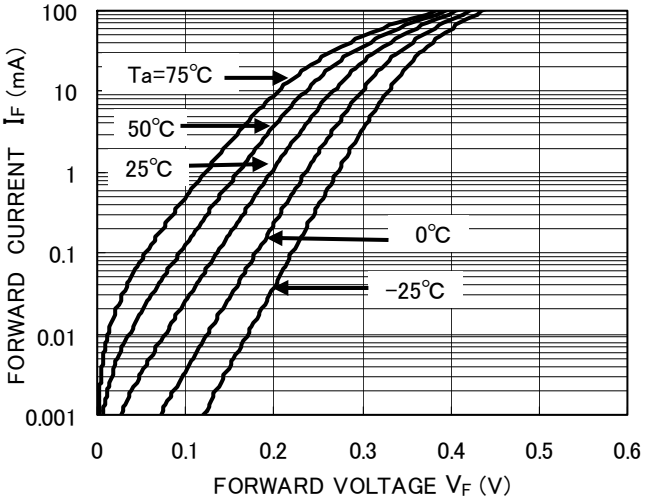


Start of commercial production
2009-05

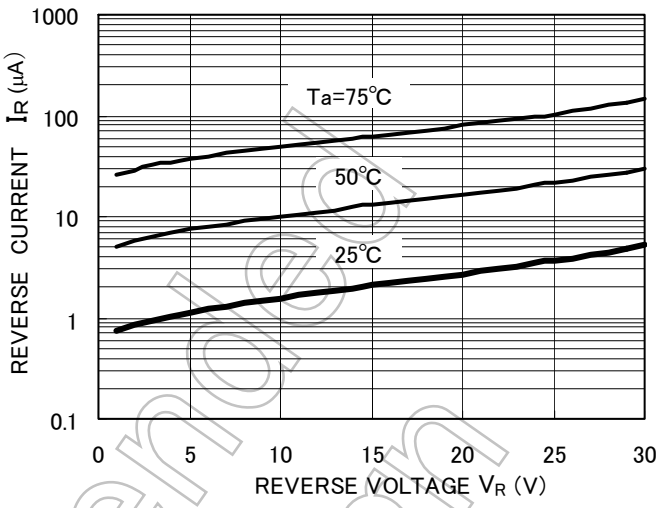
Handling Precaution

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.

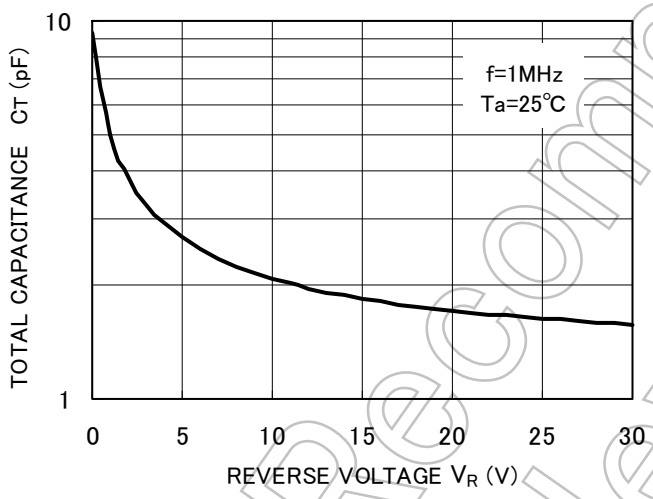
$I_F - V_F$



$I_R - V_R$



$C_T - V_R$



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