

TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

DSR520

High-Speed Switching Applications

- Low reverse current: $I_R = 5 \mu\text{A}$ (max)

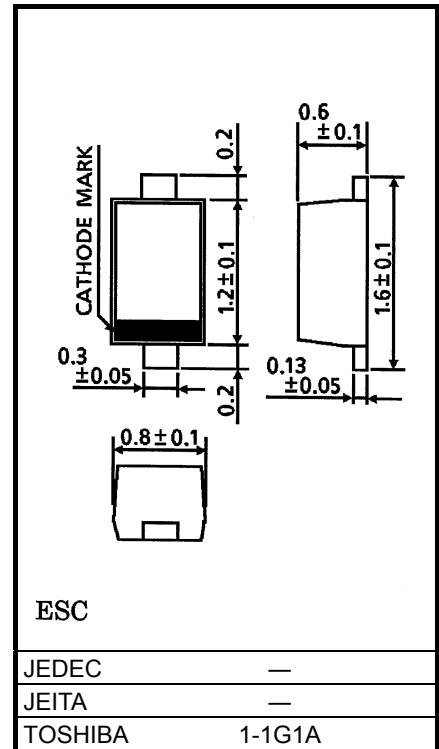
Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Maximum (peak) reverse voltage	V_{RM}	32	V
Reverse voltage	V_R	30	V
Maximum (peak) forward current	I_{FM}	300	mA
Average forward current	I_O	200	mA
Surge current (10 ms)	I_{FSM}	1	A
Power dissipation	P^*	150	mW
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55~125	$^\circ\text{C}$
Operating temperature range	T_{opr}	-40~100	$^\circ\text{C}$

* Mounted on a glass-epoxy circuit board of 20 mm × 20 mm, pad dimensions of 4 mm × 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).

Unit: mm

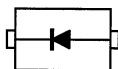


Weight: 1.4 mg (typ.)

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_F (1)$	—	$I_F = 1 \text{ mA}$	—	0.21	—	V
	$V_F (2)$	—	$I_F = 10 \text{ mA}$	—	0.28	—	
	$V_F (3)$	—	$I_F = 200 \text{ mA}$	—	0.52	0.6	
Reverse current	I_R	—	$V_R = 30 \text{ V}$	—	—	5	μA
Total capacitance	C_T	—	$V_R = 0, f = 1 \text{ MHz}$	—	18	—	pF

Equivalent Circuit (Top View)



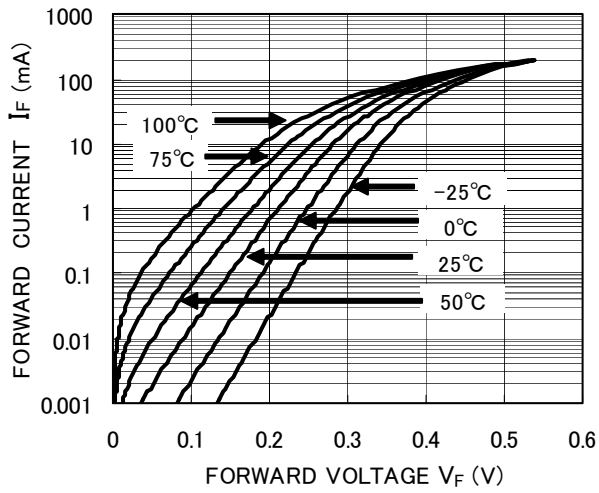
Marking



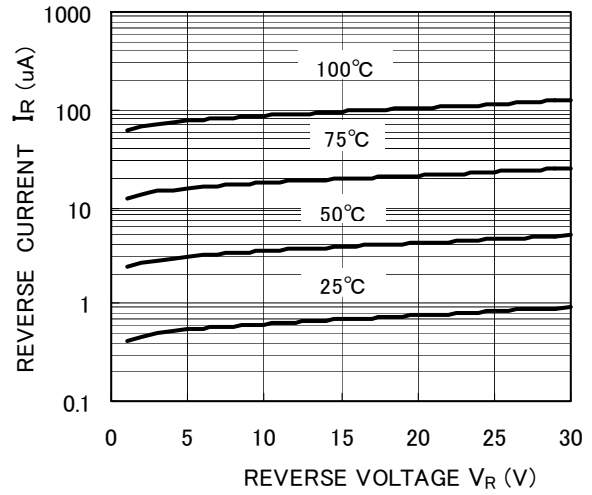
Handling Precaution

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.

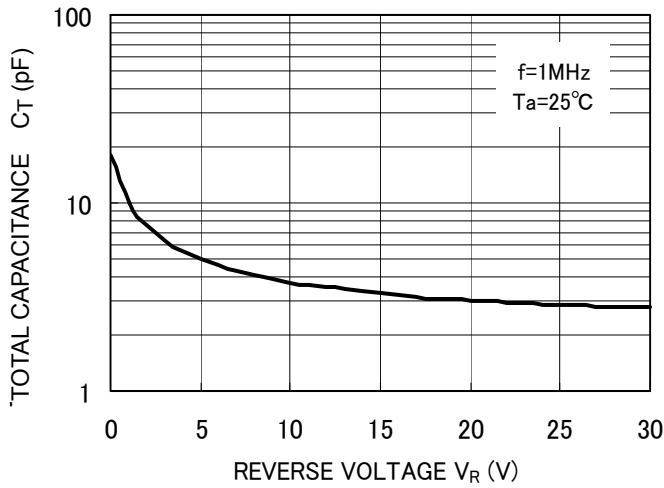
$I_F - V_F$



$I_R - V_R$



$C_T - V_R$



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