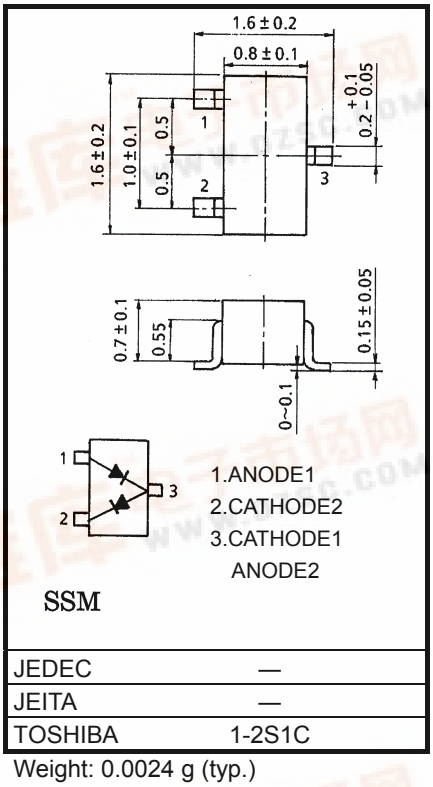
TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

1SS423

Ultra-High-Speed Switching Applications

- Small package
- Low forward voltage: $V_{F\ (3)}$ = 0.56 V (typ.)
- Low reverse current: I_R = 5 μA (max)

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	1-2S1C

Weight: 0.0024 g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Maximum (peak) reverse voltage	V_{RM}	45	V
Reverse voltage	V_R	40	V
Maximum (peak) forward current	I_{FM}	200*	mA
Average forward current	I_O	100*	mA
Surge current (10 ms)	I_{FSM}	1*	A
Power dissipation	P	100*	mW
Junction temperature	T_j	125	°C
Storage temperature range	T_{stg}	−55~125	°C
Operating temperature range	T_{opr}	−40~100	°C

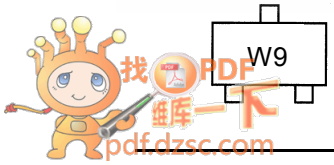
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

*: This is the absolute maximum rating for a single diode . Where two diodes are used, the absolute maximum rating per diode is 75% that for the single diode.

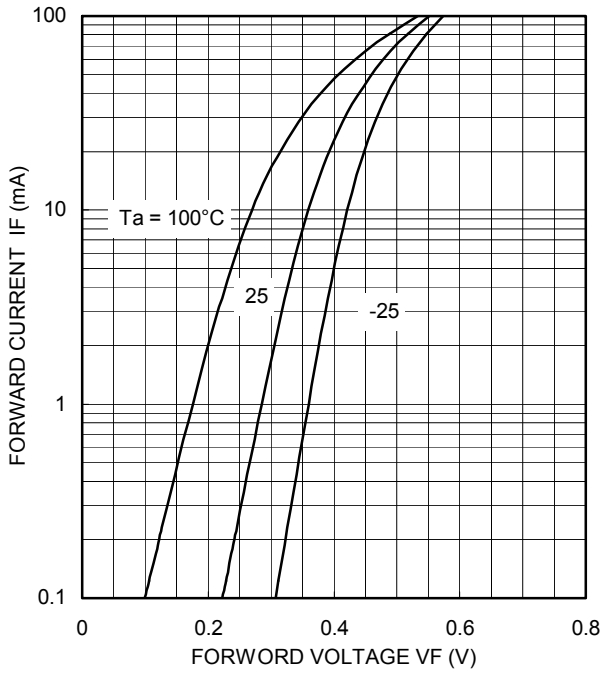
Electrical Characteristics (Ta = 25°C)

Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_{F\ (1)}$	I_F = 1 mA	—	0.28	—	V
	$V_{F\ (2)}$	I_F = 10 mA	—	0.36	—	
	$V_{F\ (3)}$	I_F = 100 mA	—	0.56	0.62	
Reverse current	I_R	V_R = 40 V	—	—	5	μA
Total capacitance (between cathode and anode)	C_T	V_R = 0, f = 1 MH_Z	—	15	—	pF

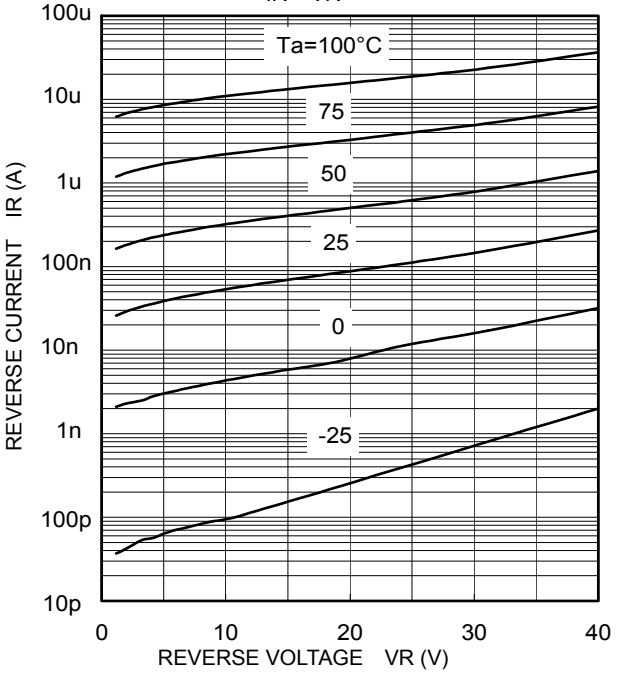
Marking



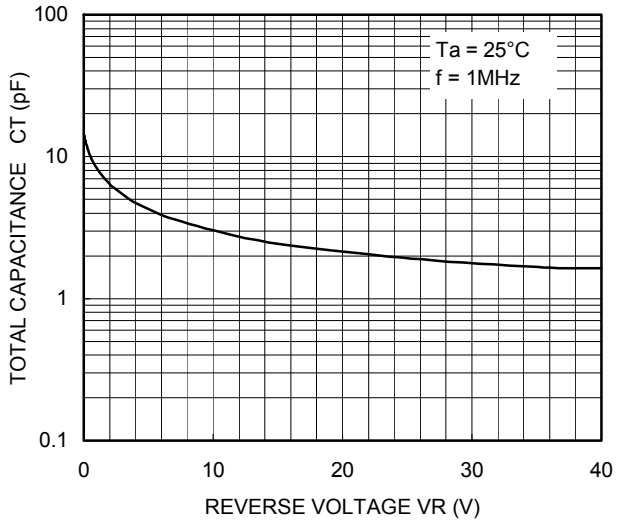
IF - VF



IR – VR



CT - VR



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20070701-EN GENERAL

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- TOSHIBA is continually working to improve the quality and reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to comply with the standards of safety in making a safe design for the entire system, and to avoid situations in which a malfunction or failure of such TOSHIBA products could cause loss of human life, bodily injury or damage to property.
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