

Schottky Barrier Diode Silicon Epitaxial

# 1SS423

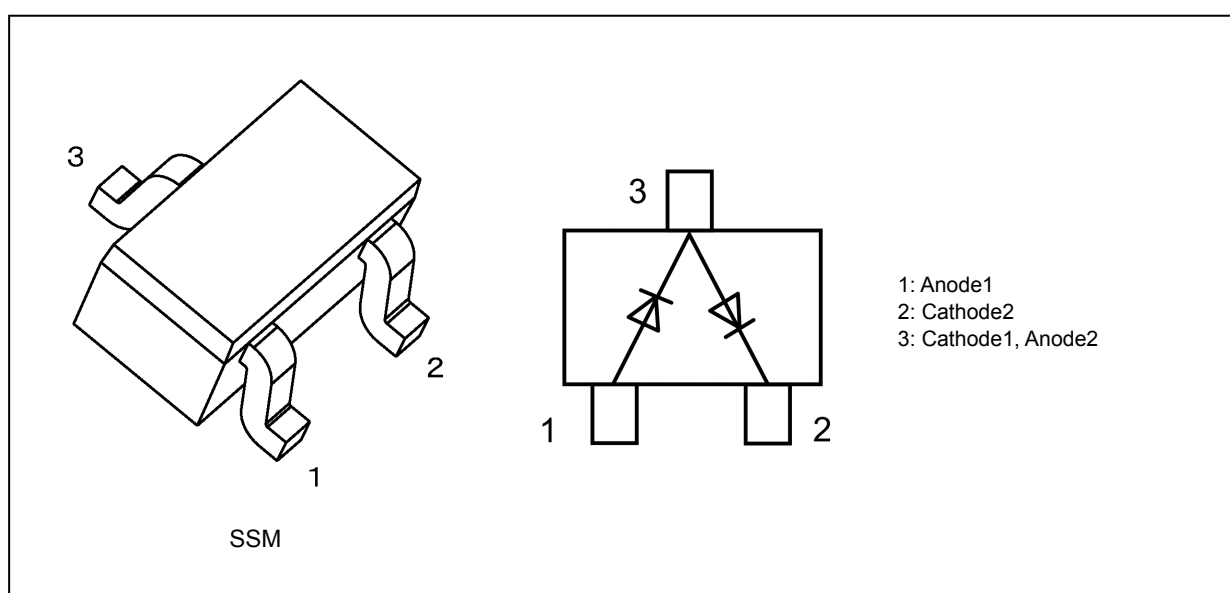
## 1. Applications

- Ultra-High-Speed Switching

## 2. Features

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

## 3. Packaging and Internal Circuit



Start of commercial production  
2004-07

## 4. Absolute Maximum Ratings (Note) (Unless otherwise specified, $T_a = 25\text{ }^\circ\text{C}$ )

Characteristics	Symbol	Note	Rating	Unit
Peak reverse voltage	$V_{RM}$		45	V
Reverse voltage	$V_R$		40	V
Peak forward current	$I_{FM}$	(Note 1)	200	mA
Average rectified current	$I_O$	(Note 1)	100	mA
Non-repetitive peak forward surge current	$I_{FSM}$	(Note 1)	1	A
Power dissipation	$P_D$		100	mW
Junction temperature	$T_j$		125	$^\circ\text{C}$
Storage temperature	$T_{stg}$		-55 to 125	$^\circ\text{C}$
Operating temperature	$T_{opr}$		-40 to 100	$^\circ\text{C}$

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).

Note 1: 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.

## 5. Electrical Characteristics (Unless otherwise specified, $T_a = 25\text{ }^\circ\text{C}$ )

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_{F(1)}$	$I_F = 1\text{ mA}$	—	0.28	—	V
	$V_{F(2)}$	$I_F = 10\text{ mA}$	—	0.36	—	
	$V_{F(3)}$	$I_F = 100\text{ mA}$	—	0.56	0.62	
Reverse current	$I_R$	$V_R = 40\text{ V}$	—	—	5	$\mu\text{A}$
Total capacitance	$C_t$	$V_R = 0\text{ V}, f = 1\text{ MHz}$	—	15	—	pF

## 6. Marking

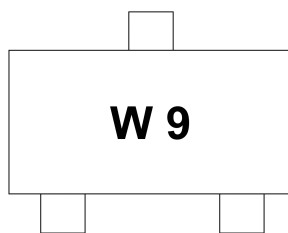


Fig. 6.1 Marking

## 7. Characteristics Curves (Note)

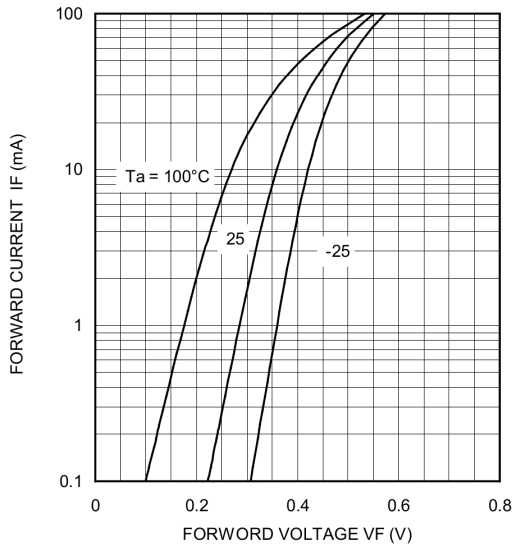


Fig. 7.1  $I_F - V_F$

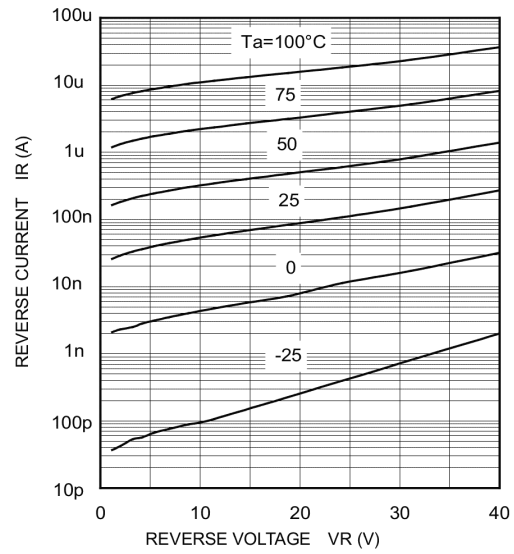


Fig. 7.2  $I_R - V_R$

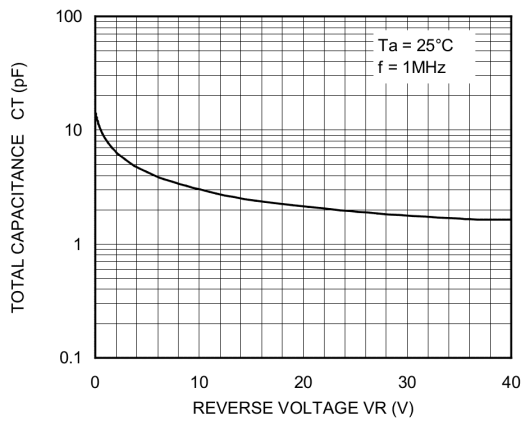
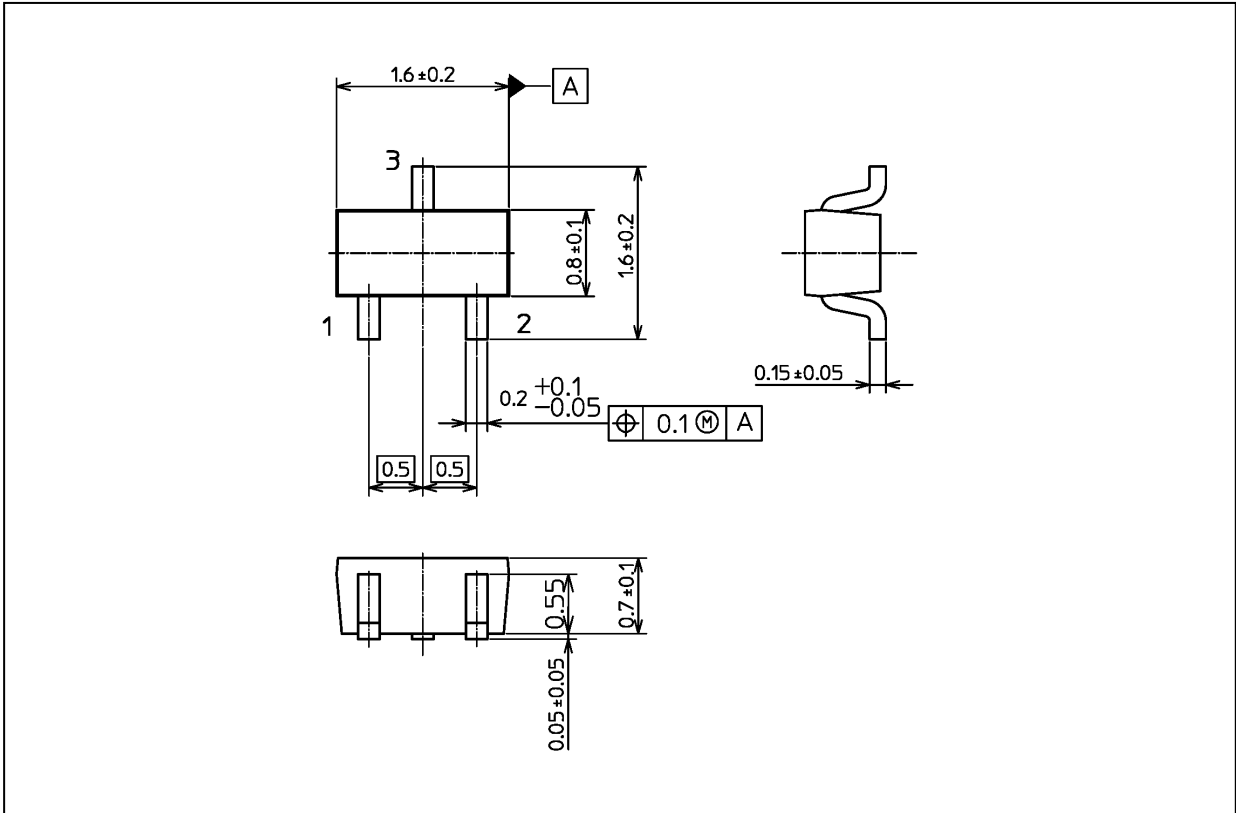


Fig. 7.3  $C_T - V_R$

Note: The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

Package Dimensions

Unit: mm



Weight: 2.4 mg (typ.)

Package Name(s)
JEDEC: SOT-416
Nickname: SSM

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