

Schottky Barrier Diode Silicon Epitaxial

1SS319

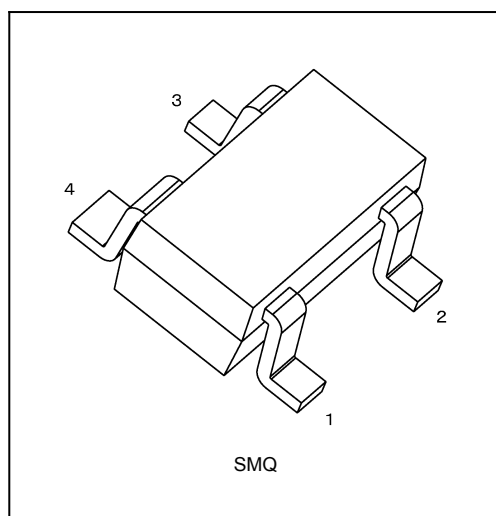
1. Applications

- Low-Voltage High-Speed Switching

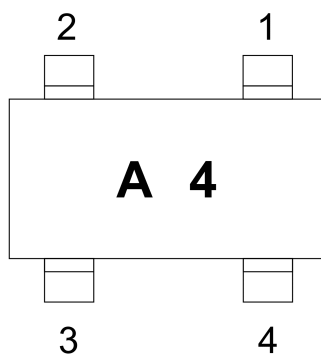
2. Features

- (1) Small package : SC-61
- (2) Low forward voltage: $V_{F(3)} = 0.54 \text{ V (typ.)}$
- (3) Low reverse current: $I_R = 5 \mu\text{A (max)}$

3. Packaging

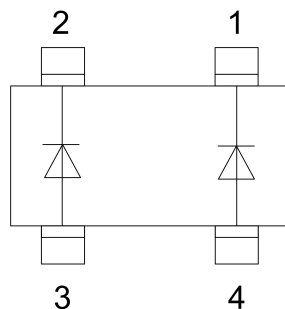


4. Marking



Start of commercial production
1987-06

5. Internal Circuit



6. Absolute Maximum Ratings (Note) (Unless otherwise specified, Ta = 25 °C)

Characteristics	Symbol	Note	Rating	Unit
Peak reverse voltage	V_{RM}		45	V
Reverse voltage	V_R		40	V
Peak forward current	I_{FM}	(Note1)	300	mA
Average rectified current	I_O	(Note1)	100	mA
Power dissipation	P_D	(Note1)	150	mW
Junction temperature	T_j		125	°C
Storage temperature	T_{stg}		-55 to 125	°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).

Note1: Unit rating. Total rating = Unit rating × 1.5

7. Electrical Characteristics (Unless otherwise specified, Ta = 25 °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	—	
	$V_F(3)$	$I_F = 100 \text{ mA}$	—	0.54	0.60	
Reverse current	I_R	$V_R = 40 \text{ V}$	—	—	5	μA
Total capacitance	C_t	$V_R = 0 \text{ V}, f = 1\text{MHz}$	—	18	25	pF

8. Characteristics Curves (Note)

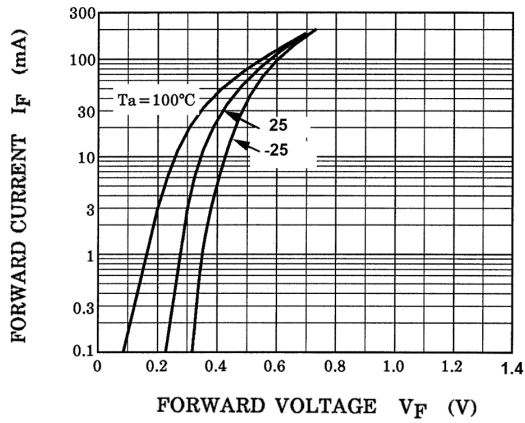


Fig. 8.1 $I_F - V_F$

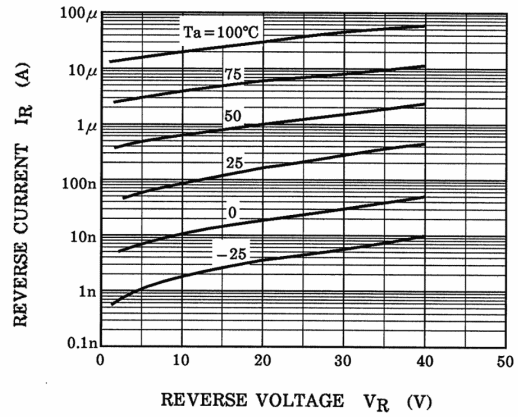


Fig. 8.2 $I_R - V_R$

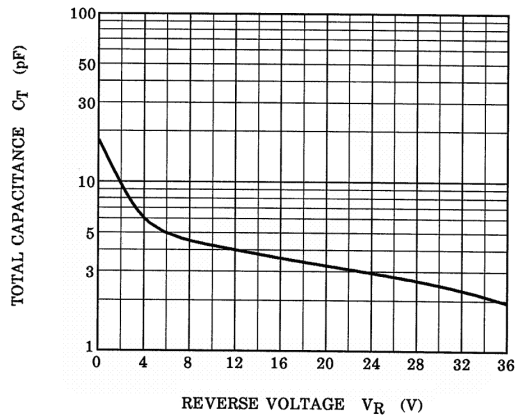
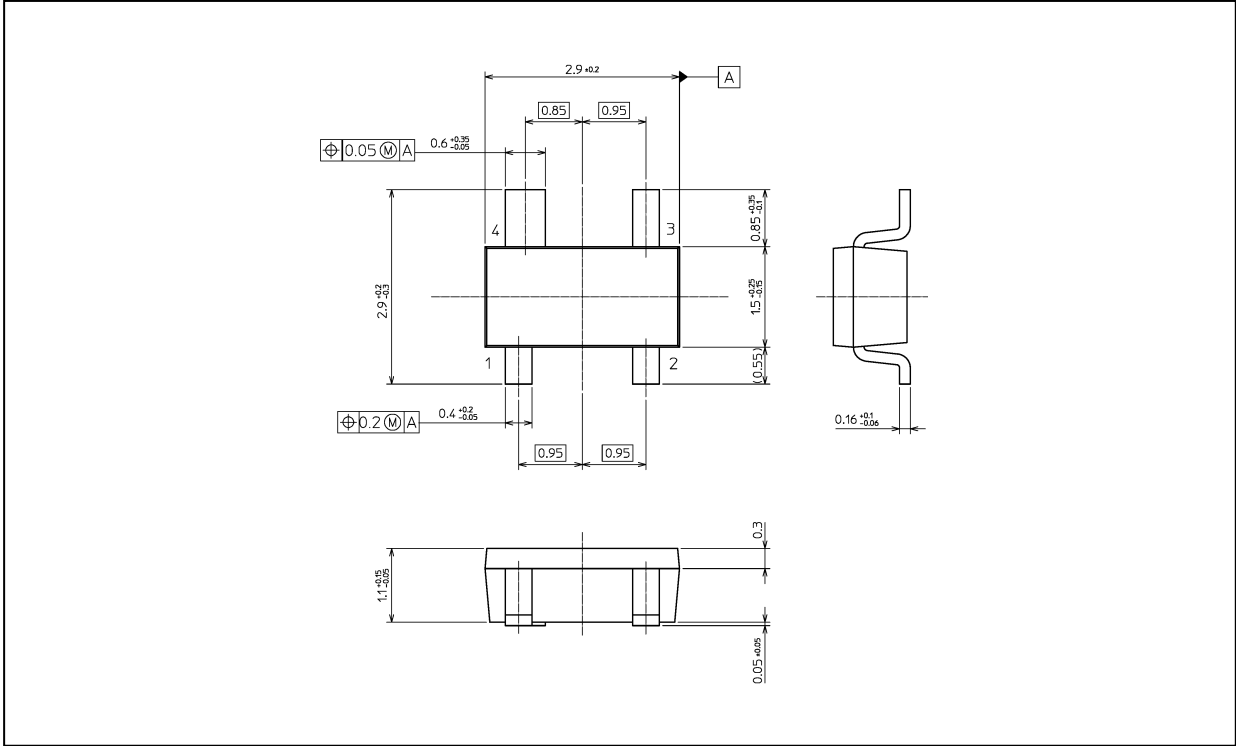


Fig. 8.3 $C_T - V_R$

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

Package Dimensions

Unit: mm



Weight: 13 mg (typ.)

Package Name(s)
Nickname: SMQ

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