

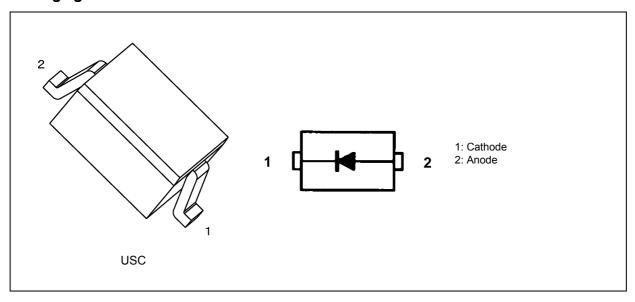
Switching Diodes Silicon Epitaxial Planar

# **BAS316**

#### 1. Applications

· High-Speed Switching

#### 2. Packaging and Internal Circuit



# 3. Absolute Maximum Ratings (Note) (Unless otherwise specified, $T_a = 25$ °C)

Characteristics	Symbol	Note	Rating	Unit
Peak reverse voltage	$V_{RM}$		100	V
Reverse voltage	$V_R$		100	
Peak forward current	I <sub>FM</sub>		500	mA
Average rectified current	I <sub>O</sub>		250	
Non-repetitive peak forward surge current	I <sub>FSM</sub>	(Note 1)	1	Α
Power dissipation	$P_D$	(Note 2)	230	mW
Junction temperature	Tj		150	°C
Storage temperature	T <sub>stg</sub>		-55 to 150	

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: Measured with a 10 ms pulse.

Note 2: Mounted on an FR4 board (20 mm × 20 mm, Cu pad: 4 mm × 4 mm)

Rev.1.0



# 4. Electrical Characteristics (Unless otherwise specified, T<sub>a</sub> = 25 °C)

Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Forward voltage	V <sub>F</sub> (1)	I <sub>F</sub> = 1 mA	_	_	0.715	V
	V <sub>F</sub> (2)	I <sub>F</sub> = 10 mA	_	_	0.855	
	V <sub>F</sub> (3)	I <sub>F</sub> = 50 mA	_	_	1.00	
	V <sub>F</sub> (4)	I <sub>F</sub> = 150 mA	_	_	1.25	
Reverse current	I <sub>R</sub> (1)	V <sub>R</sub> = 25 V	_	_	30	nA
	I <sub>R</sub> (2)	V <sub>R</sub> = 80 V	_	_	200	
Total capacitance	C <sub>t</sub>	V <sub>R</sub> = 0 V, f = 1 MHz	_	0.35	_	pF
Reverse recovery time	t <sub>rr</sub>	I <sub>F</sub> = 10 mA, See Fig. 4.1.	_	_	3.0	ns

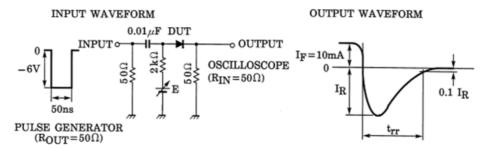
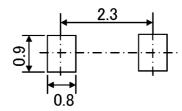


Fig. 4.1 Reverse recovery time (t<sub>rr</sub>) Test circuit

#### 5. Marking



### 6. Land Pattern Dimensions (for reference only)



Land Pattern Dimensions (Unit: mm)



# 7. Characteristics Curves (Note)

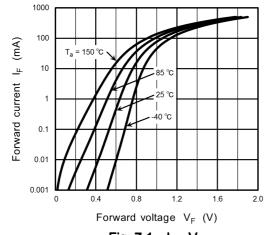


Fig. 7.1 I<sub>F</sub> - V<sub>F</sub>

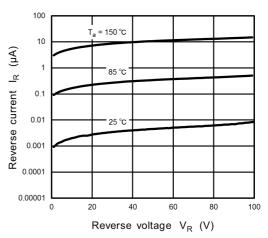


Fig. 7.2 I<sub>R</sub> - V<sub>R</sub>

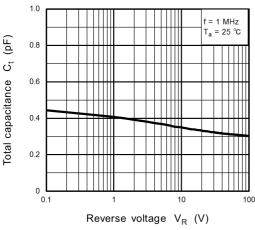


Fig. 7.3 Ct - VR

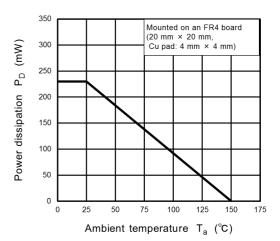


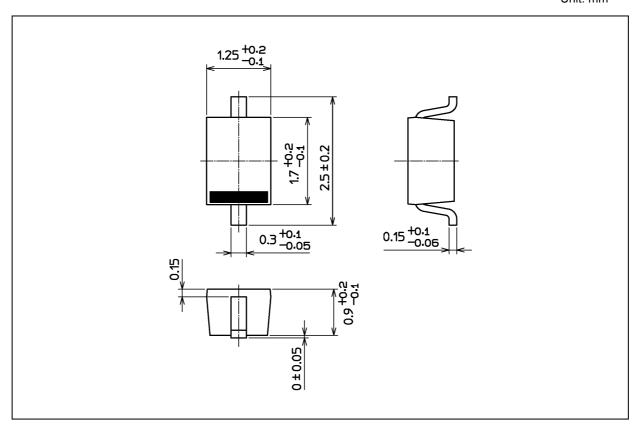
Fig. 7.4 P<sub>D</sub> - T<sub>a</sub>

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



# **Package Dimensions**

Unit: mm



Weight: 4.5 mg (typ.)

	Package Name(s)
JEDEC: SOD-323	
Nickname: USC	



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