

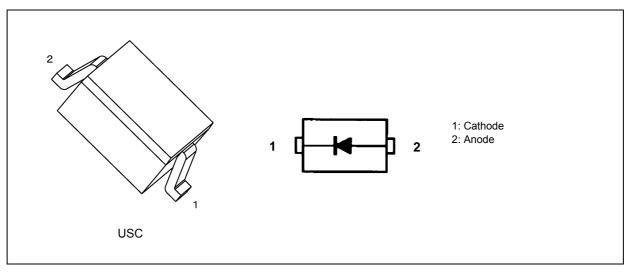
Schottky Barrier Diode Silicon Epitaxial

# **CUS05S30**

#### 1. Applications

· High-Speed Switching

### 2. Packaging and Internal Circuit



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

Characteristics	Symbol	Note	Rating	Unit
Peak reverse voltage	$V_{RM}$		30	V
Reverse voltage	V <sub>R</sub>		20	
Average rectified current	I <sub>O</sub>	(Note 1)	0.5	Α
Non-repetitive peak forward surge current	I <sub>FSM</sub>	(Note 2)	5	
Junction temperature	Tj		125	°C
Storage temperature	T <sub>stg</sub>		-55 to 125	

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: Mounted on an FR4 board.

 $(25.4 \text{ mm} \times 25.4 \text{ mm} \times 1.6 \text{ mm}, \text{Cu Pad: } 645 \text{ mm}^2)$ 

Note 2: Measured with a 10 ms pulse.

Start of commercial production

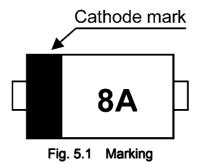
Rev.3.0



## 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> = 0.1 A (Pulse test)		0.28	0.34	V
Forward voltage	V <sub>F</sub> (2)	I <sub>F</sub> = 0.5 A (Pulse test)		0.41	0.47	V
Reverse current	I <sub>R</sub> (1)	V <sub>R</sub> = 10 V (Pulse test)		_	0.15	mA
Reverse current	I <sub>R</sub> (2)	V <sub>R</sub> = 30 V (Pulse test)		_	0.30	mA
Total capacitance	Ct	V <sub>R</sub> = 0 V, f = 1 MHz	_	55	_	pF

### 5. Marking



Marking Code	Part Number
8A	CUS05S30

#### 6. Usage Considerations

Schottky barrier diodes (SBDs) have reverse leakage greater than other types of diodes. This makes SBDs
more susceptible to thermal runaway under high-temperature and high-voltage conditions. Thus, both
forward and reverse power losses of SBDs should be considered for thermal and safety design.

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

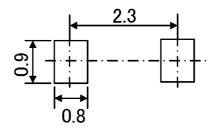
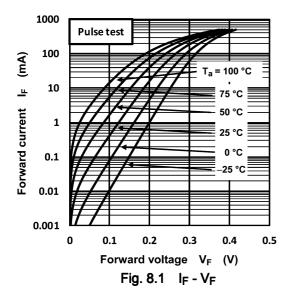
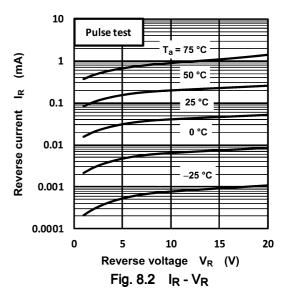


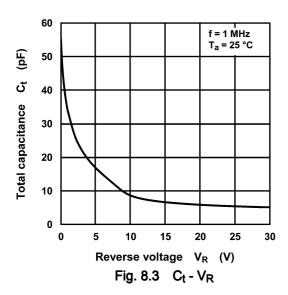
Fig. 7.1 Land Pattern Dimensions for Reference Only (Unit: mm)



## 8. Characteristics Curves (Note)





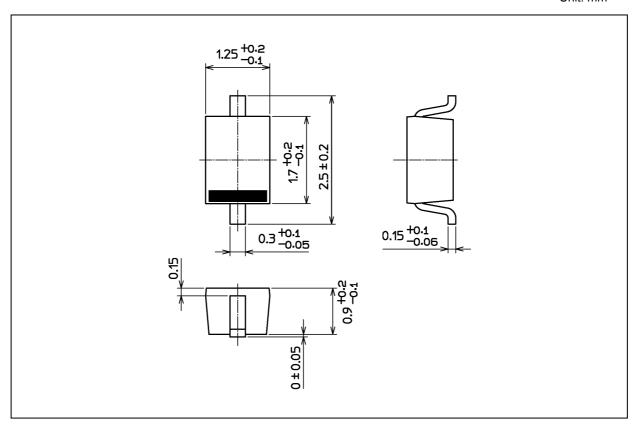


Note: The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.



## **Package Dimensions**

Unit: mm



Weight: 4.5 mg (typ.)

Package Name(s)
TOSHIBA: 1-1E1S
Nickname: USC



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