

TOSHIBA Diode Silicon Epitaxial Planar Type

# 1SS382

## Ultra High Speed Switching Application

Unit: mm

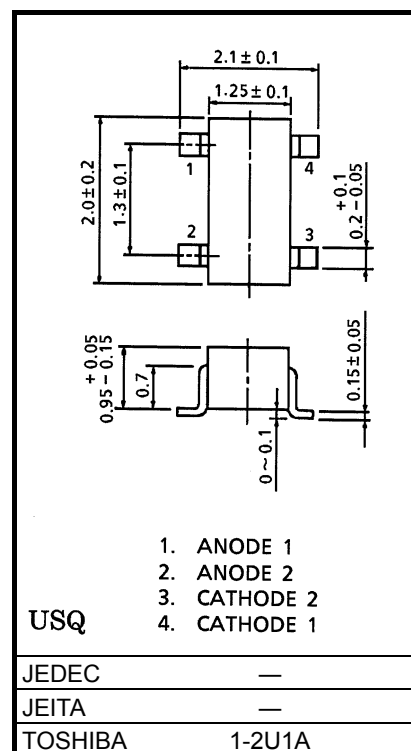
- Small package
- Composed of 2 independent diodes.
- Low forward voltage :  $V_F(3) = 0.92V$  (typ.)
- Fast reverse recovery time:  $T_{RR} = 1.6ns$  (typ.)

## Absolute Maximum Ratings ( $T_a = 25^\circ C$ )

Characteristic	Symbol	Rating	Unit
Maximum (peak) reverse Voltage	$V_{RM}$	85	V
Reverse voltage	$V_R$	80	V
Maximum (peak) forward current	$I_{FM}$	300 *	mA
Average forward current	$I_O$	100 *	mA
Surge current (10ms)	$I_{FSM}$	2	A
Power dissipation	P	100 *	mW
Junction temperature	$T_j$	125	$^\circ C$
Storage temperature range	$T_{stg}$	-55~125	$^\circ C$

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).

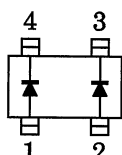
\*: Unit rating. Total rating = unit rating  $\times$  1.5



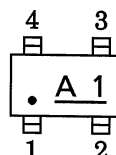
## Electrical Characteristics ( $T_a = 25^\circ C$ )

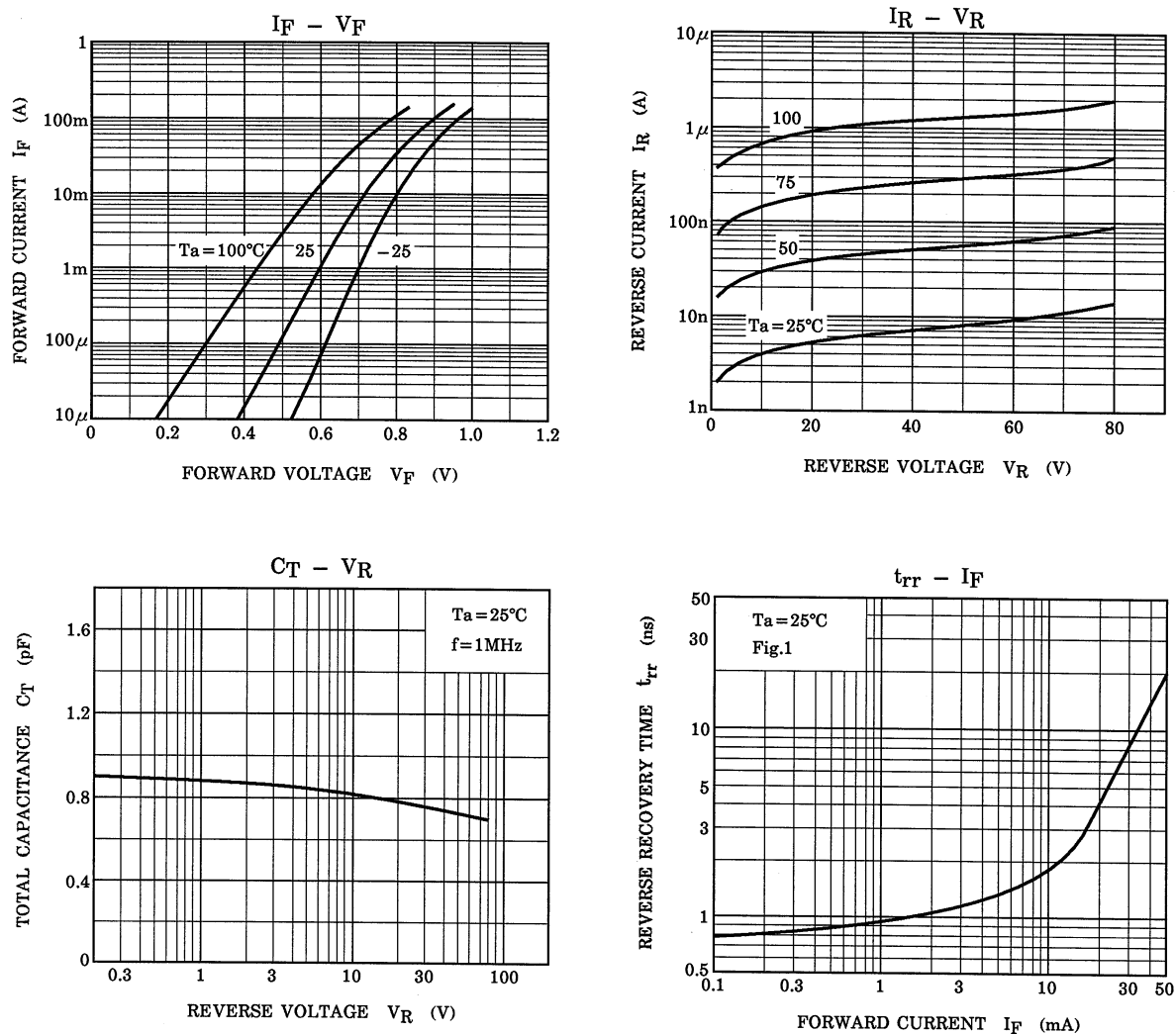
Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_F(1)$	—	$I_F = 1mA$	—	0.61	—	V
	$V_F(2)$	—	$I_F = 10mA$	—	0.74	—	V
	$V_F(3)$	—	$I_F = 100mA$	—	0.92	1.20	V
Reverse current	$I_R(1)$	—	$V_R = 30V$	—	—	0.1	$\mu A$
	$I_R(2)$	—	$V_R = 80V$	—	—	0.5	$\mu A$
Total capacitance	CT	—	$V_R = 0, f = 1MHz$	—	0.9	2.0	pF
Reverse recovery time	trr	—	$I_F = 10mA, Fig.1$	—	1.6	4.0	ns

## Pin Assignment (Top View)



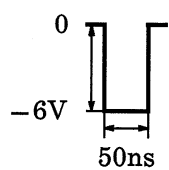
## Marking



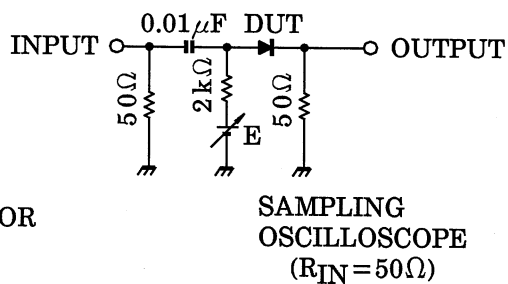


**Fig.1 Reverse Recovery Time ( $t_{rr}$ ) Test Circuit**

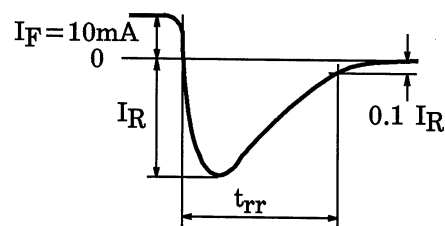
INPUT WAVEFORM



PULSE GENERATOR  
( $R_{OUT} = 50\Omega$ )



OUTPUT WAVEFORM



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