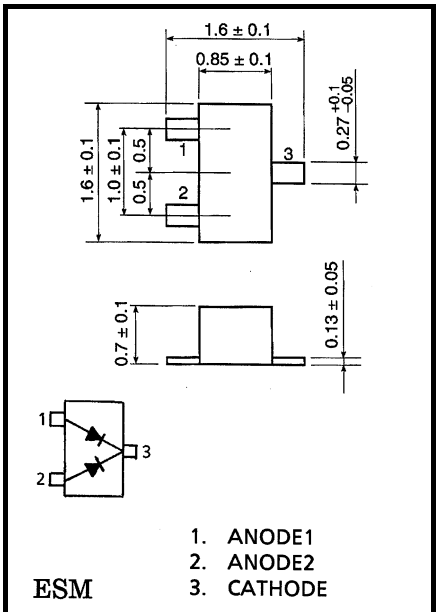
TOSHIBA Diode Silicon Epitaxial Planar Type

1SS361F

Ultra High Speed Switching Applications

- Small package : 1608 Flat lead
- Excellent in forward current and forward voltage characteristics : $V_{F\ (3)}$ = 0.9V (typ.)
- Fast reverse recovery time : t_{rr} = 1.6ns (typ.)
- Small total capacitance : C_T = 0.9pF (typ.)

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	1-2SA1B

Weight: 2.3 mg

Absolute Maximum Ratings (Ta = 25°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	°C
Storage temperature range	T_{stg}	−55~125	°C

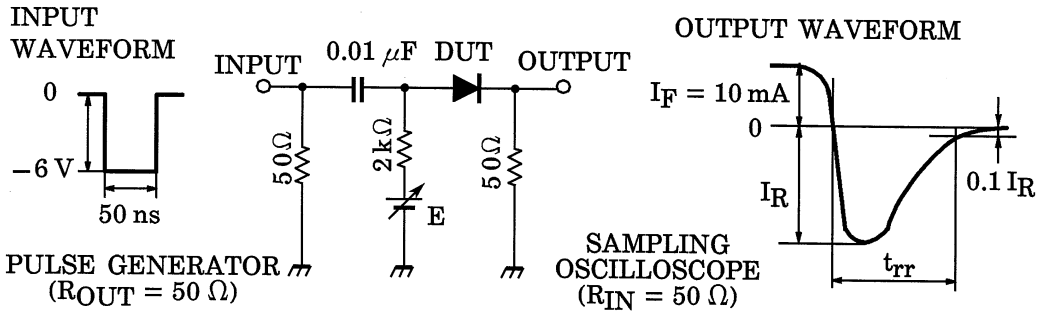
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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).

(*) Unit rating. Total rating = unit rating × 1.5

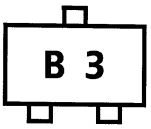
Electrical Characteristics (Ta = 25°C)

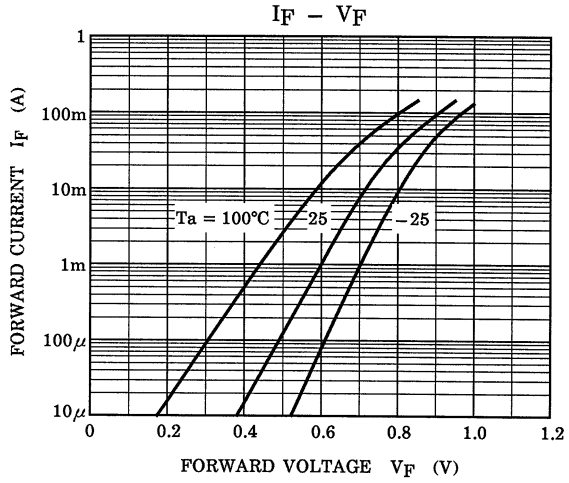
Characteristic	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_{F\ (1)}$	—	I_F = 1mA	—	0.60	—	V
	$V_{F\ (2)}$	—	I_F = 10mA	—	0.72	—	
	$V_{F\ (3)}$	—	I_F = 100mA	—	0.90	1.20	
Reverse current	$I_{R\ (1)}$	—	V_R = 30V	—	—	0.1	μA
	$I_{R\ (2)}$	—	V_R = 80V	—	—	0.5	
Total capacitance	C_T	—	V_R = 0, f = 1MHz	—	0.9	3.0	pF
Reverse recovery time	t_{rr}	—	I_F = 10mA (Fig.1)	—	1.6	4.0	ns

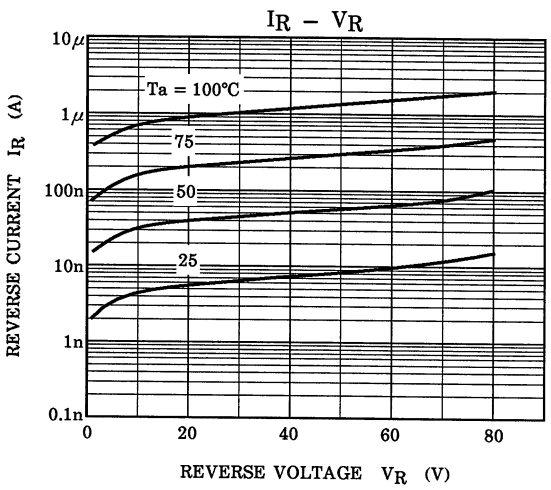
Fig.1 Reverse Recovery Time (t_{rr}) Test Circuit

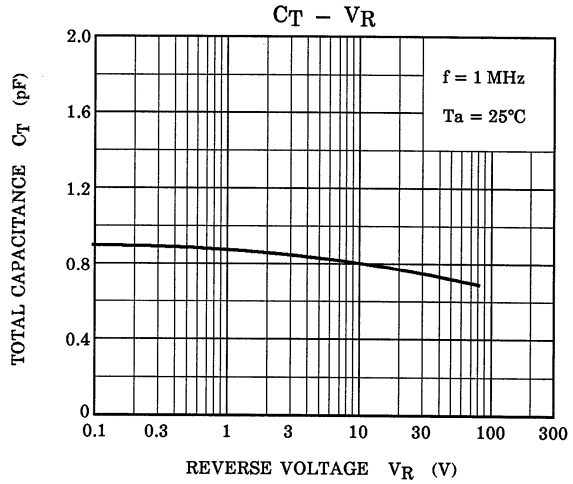


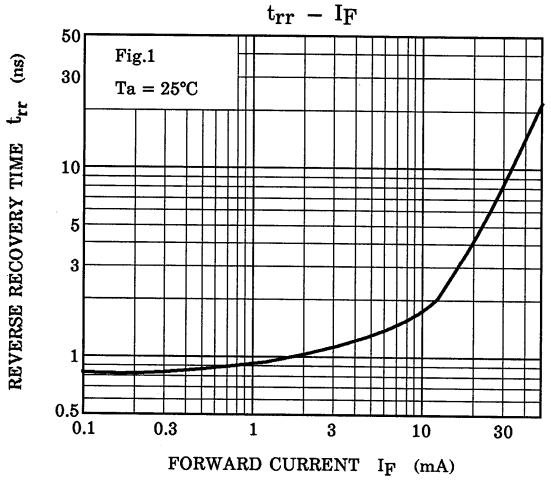
Marking




$I_F - V_F$
FORWARD CURRENT I_F (A)
1
100m
10m
1m
100μ
10μ
Ta = 100°C
25
−25
0
0.2
0.4
0.6
0.8
1.0
1.2
FORWARD VOLTAGE V_F (V)


$I_R - V_R$
REVERSE CURRENT I_R (A)
10μ
1μ
100n
10n
1n
0.1n
Ta = 100°C
75
50
25
0
20
40
60
80
REVERSE VOLTAGE V_R (V)


$C_T - V_R$
TOTAL CAPACITANCE C_T (pF)
2.0
1.6
1.2
0.8
0.4
0
f = 1 MHz
Ta = 25°C
0.1
0.3
1
3
10
30
100
300
REVERSE VOLTAGE V_R (V)


$t_{rr} - I_F$
REVERSE RECOVERY TIME t_{rr} (ns)
50
30
10
5
3
1
0.5
Fig.1
Ta = 25°C
0.1
0.3
1
3
10
30
FORWARD CURRENT I_F (mA)

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20070701-EN GENERAL

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