TOSHIBA Diode Silicon Epitaxial Schottky Barrier Type

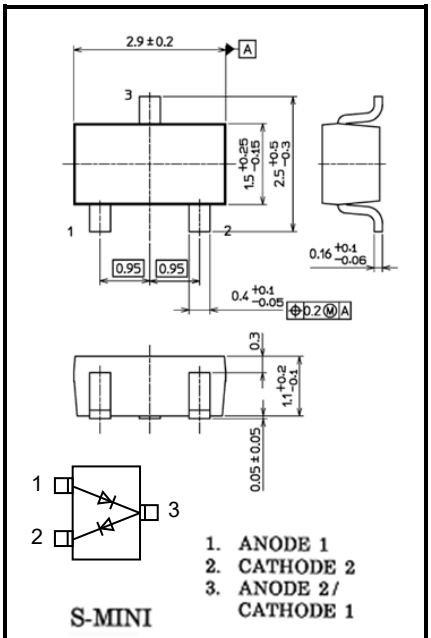
1SS396

Low Voltage High Speed Switching

- AEC-Q101 qualified (Note 1)
- Small package : SC-59
- Low forward voltage : $V_{F\ (3)}$ = 0.54V (typ.)
- Low reverse current : I_R = 5μA (max.)

Note 1: For detail information, please contact our sales.

Unit: mm



JEDEC	TO-236MOD
JEITA	SC-59
TOSHIBA	2-3F1S

Weight: 12 mg (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristic	Symbol	Rating	Unit
Maximum (peak) reverse Voltage	V_{RM}	45	V
Reverse voltage	V_R	40	V
Maximum (peak) forward current	I_{FM}	300 *	mA
Average forward current	I_O	100 *	mA
Surge current (10ms)	I_{FSM}	1 *	A
Power dissipation	P	150	mW
Junction temperature	T_j	125	°C
Storage temperature range	T_{stg}	−55 to 125	°C
Operating temperature range	T_{opr}	−40 to 100	°C

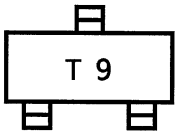
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) 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 × 0.7

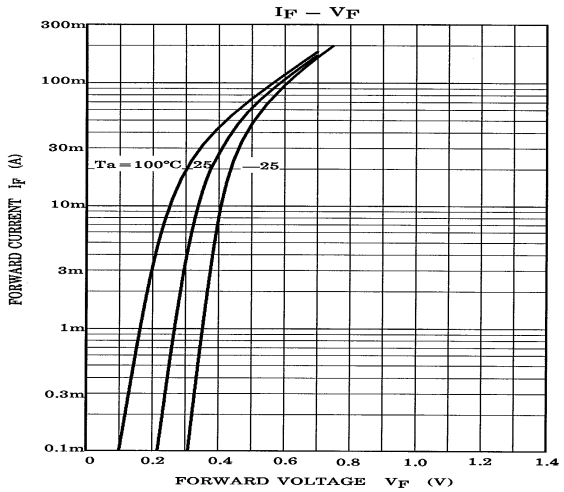
Electrical Characteristics (Ta = 25°C)

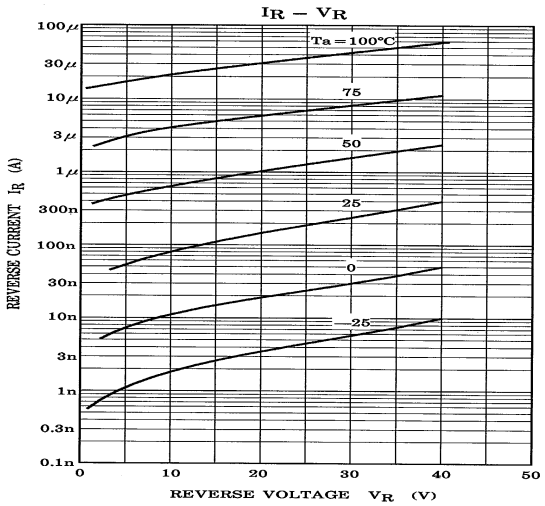
Characteristic	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	$V_{F\ (1)}$	I_F = 1mA	—	0.28	—	V
	$V_{F\ (2)}$	I_F = 10mA	—	0.36	—	
	$V_{F\ (3)}$	I_F = 100mA	—	0.54	0.60	
Reverse current	I_R	V_R = 40V	—	—	5	μA
Total capacitance	C_T	V_R = 0 V, f = 1MHz	—	18	25	pF

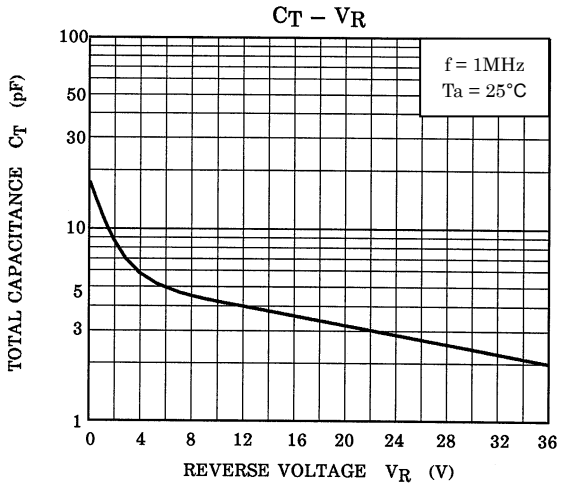
Marking

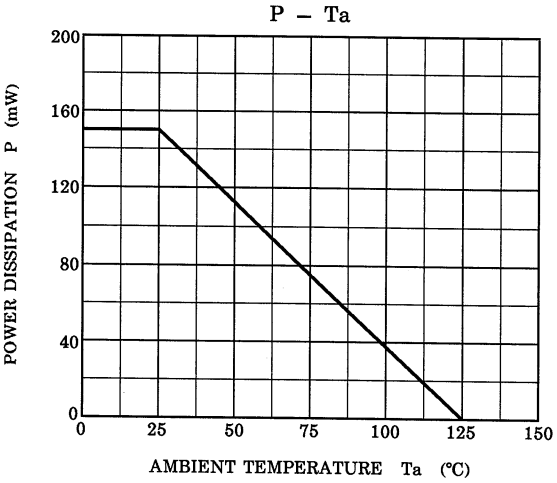


Start of commercial production
1996-04


$I_F - V_F$
FORWARD CURRENT I_F (A)
300m
100m
30m
10m
3m
1m
0.3m
0.1m
Ta = 100°C
25
−25
0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
FORWARD VOLTAGE V_F (V)


$I_R - V_R$
REVERSE CURRENT I_R (A)
100μ
30μ
10μ
3μ
1μ
300n
100n
30n
10n
3n
1n
0.3n
0.1n
Ta = 100°C
75
50
25
0
−25
0
10
20
30
40
50
REVERSE VOLTAGE V_R (V)


$C_T - V_R$
TOTAL CAPACITANCE C_T (pF)
100
50
30
10
5
3
1
f = 1MHz
Ta = 25°C
0
4
8
12
16
20
24
28
32
36
REVERSE VOLTAGE V_R (V)


P − Ta
POWER DISSIPATION P (mW)
200
160
120
80
40
0
0
25
50
75
100
125
150
AMBIENT TEMPERATURE Ta (°C)

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