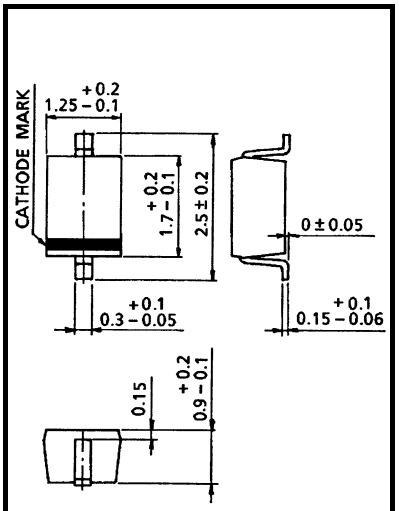
TOSHIBA Diode Silicon Epitaxial Planar Type

1SS314

VHF Tuner Band Switch Applications

- Small package.
- Small total capacitance: C_T = 1.2 pF (max)
- Low series resistance: r_s = 0.5 Ω (typ.)

Unit: mm



JEDEC	—
JEITA	—
TOSHIBA	1-1E1A

Weight: 0.004 g (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Reverse voltage	V_R	30	V
Forward current	I_F	100	mA
Junction temperature	T_j	125	°C
Storage temperature range	T_{stg}	−55~125	°C

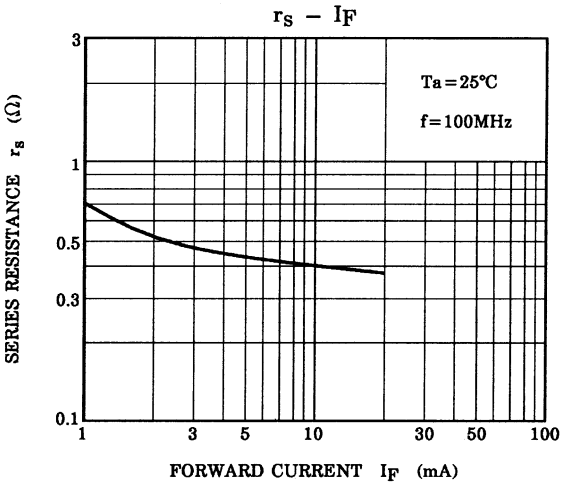
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

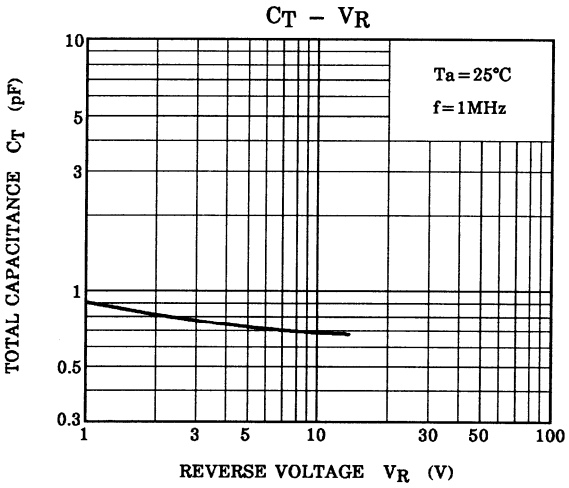
Electrical Characteristics (Ta = 25°C)

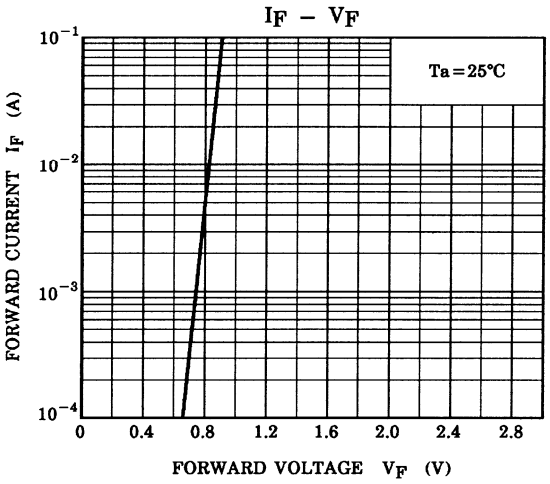
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Forward voltage	V_F	I_F = 2 mA	—	—	0.85	V
Reverse current	I_R	V_R = 15 V	—	—	0.1	μA
Reverse voltage	V_R	I_R = 1 μA	30	—	—	V
Total capacitance	C_T	V_R = 6 V, f = 1 MHz	—	0.7	1.2	pF
Series resistance	r_s	I_F = 2 mA, f = 100 MHz	—	0.5	0.9	Ω

Marking

Start of commercial production
1987-05


r_S – I_F
Ta = 25°C
f = 100MHz
SERIES RESISTANCE r_s (Ω)
3
1
0.5
0.3
0.1
1
3
5
10
30
50
100
FORWARD CURRENT I_F (mA)


C_T – V_R
Ta = 25°C
f = 1MHz
TOTAL CAPACITANCE C_T (pF)
10
5
3
1
0.5
0.3
1
3
5
10
30
50
100
REVERSE VOLTAGE V_R (V)


I_F – V_F
Ta = 25°C
FORWARD CURRENT I_F (A)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
0
0.4
0.8
1.2
1.6
2.0
2.4
2.8
FORWARD VOLTAGE V_F (V)

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