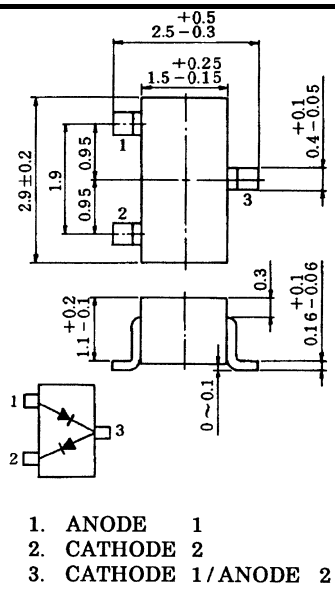
TOSHIBA Diode Silicon Epitaxial Pin Type

# 1SV172

VHF~UHF Band RF Attenuator Applications

- Useful for small size tuner
- Small total capacitance: $C_T$ = 0.25 pF (typ.)
- Low series resistance: $r_s$ = 3 Ω (typ.)

Unit: mm




| | |
|---|---|
| JEDEC | — |
| JEITA | SC-59 |
| TOSHIBA | 1-3G1G |

Weight: 0.013 g (typ.)

## Absolute Maximum Ratings (Ta = 25°C)

| Characteristics | Symbol | Rating | Unit |
|---|---|---|---|
| Reverse voltage | $V_R$ | 50 | V |
| Forward current | $I_F$ | 50 | mA |
| Junction temperature | $T_j$ | 125 | °C |
| Storage temperature range | $T_{stg}$ | −55~125 | °C |

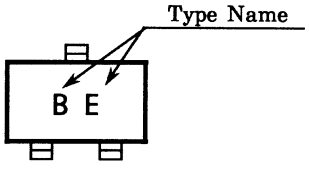
Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.)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

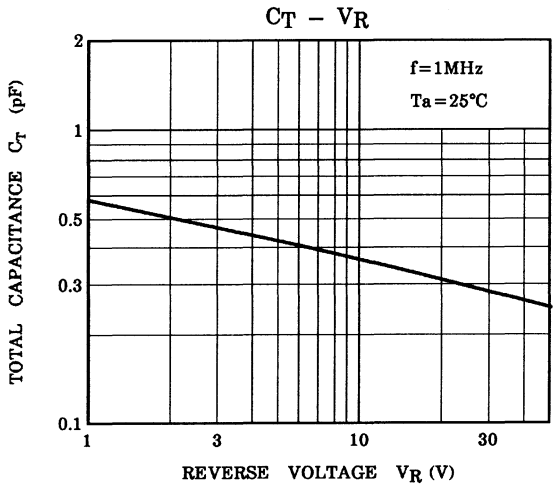
## Electrical Characteristics (Ta = 25°C)

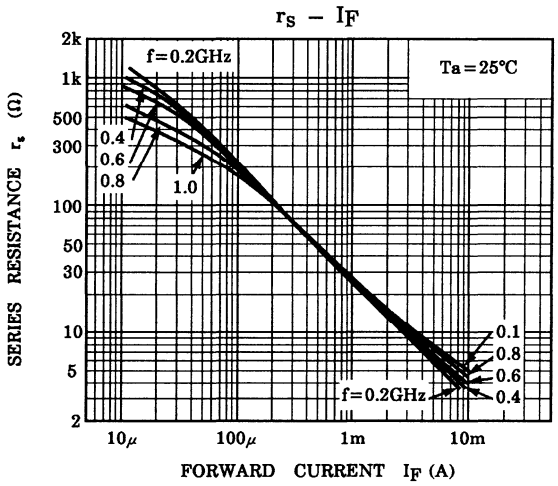
| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|
| Reverse voltage | $V_R$ | $I_R$ = 10 μA | 50 | — | — | V |
| Reverse current | $I_R$ | $V_R$ = 50 V | — | — | 0.1 | μA |
| Forward voltage | $V_F$ | $I_F$ = 50 mA | — | 0.95 | — | V |
| Total capacitance (Note) | $C_T$ | $V_R$ = 50 V, f = 1 MHz | — | 0.25 | — | pF |
| Series resistance | $r_s$ | $I_F$ = 10 mA, f = 100 MHz | — | 3 | — | Ω |

Note: $C_T$ is measured by 3 terminal method with capacitance bridge.

## Marking




$C_T - V_R$
f=1MHz
Ta=25°C
TOTAL CAPACITANCE $C_T$ (pF)
2
1
0.5
0.3
0.1
1
3
10
30
REVERSE VOLTAGE $V_R$ (V)


$r_S - I_F$
f=0.2GHz
Ta=25°C
SERIES RESISTANCE $r_s$ (Ω)
2k
1k
500
300
100
50
30
10
5
2
0.4
0.6
0.8
1.0
0.1
0.8
0.6
0.4
f=0.2GHz
10μ
100μ
1m
10m
FORWARD CURRENT $I_F$ (A)

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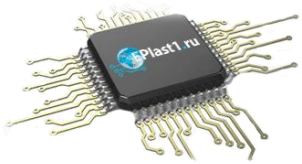
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.

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