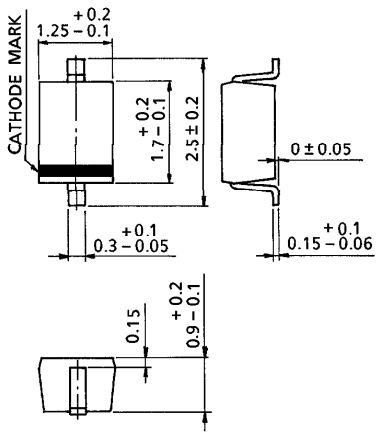
TOSHIBA DIODE SILICON EPITAXIAL PLANAR TYPE

# 1SV328

VCO FOR UHF BAND RADIO

Unit in mm

- High Capacitance Ratio : $C_{1V}/C_{4V} = 2.8$ (Typ.)
- Low Series Resistance : $r_s = 0.55\ \Omega$ (Typ.)
- Useful for Small Size Tuner.




| | |
|---|---|
| USC | |
| JEDEC | — |
| EIAJ | — |
| TOSHIBA | 1-1E1A |

MAXIMUM RATINGS (Ta = 25°C)

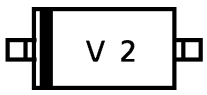
| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---|---|---|---|
| Reverse Voltage | $V_R$ | 10 | V |
| Junction Temperature | $T_j$ | 125 | °C |
| Storage Temperature Range | $T_{stg}$ | −55~125 | °C |

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|---|---|---|---|---|---|---|
| Reverse Voltage | $V_R$ | $I_R = 1\ \mu A$ | 10 | — | — | V |
| Reverse Current | $I_R$ | $V_R = 10$ V | — | — | 3 | nA |
| Capacitance | $C_{1V}$ | $V_R = 1$ V, f = 1 MHz | 5.7 | — | 6.7 | pF |
| Capacitance | $C_{4V}$ | $V_R = 4$ V, f = 1 MHz | 1.85 | — | 2.45 | pF |
| Capacitance Ratio | $C_{1V}/C_{4V}$ | — | 2.7 | 2.8 | — | — |
| Series Resistance | $r_s$ | $V_R = 1$ V, f = 470 MHz | — | 0.55 | 0.7 | Ω |

* Signal level when capacitance is measured : Vsig = 100 $mV_{rms}$

MARKING

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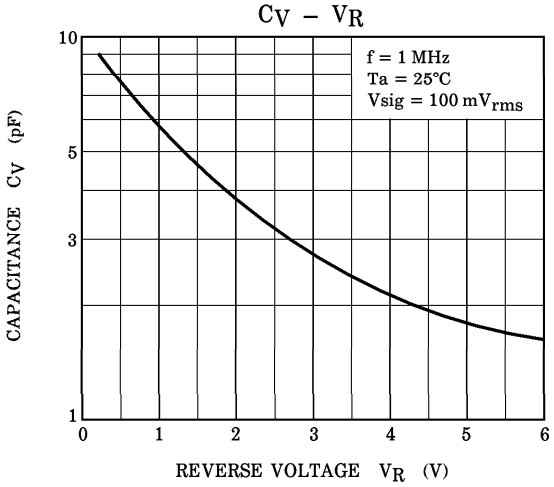
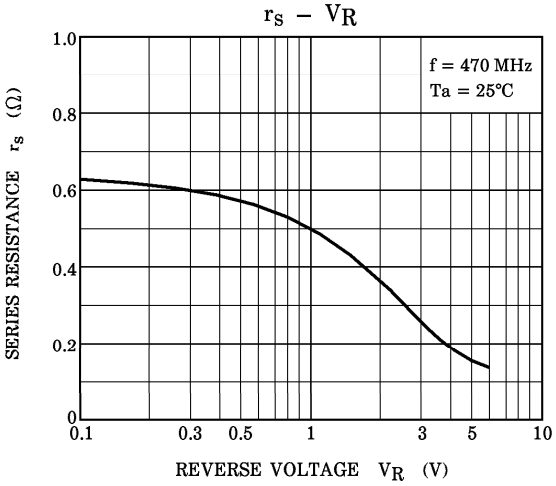



SPICE PARAMETER

SPICE MODEL : BERKLEY SPICE.2G.6 DIODE MODEL

DATA FORMAT : MODEL FORMAT

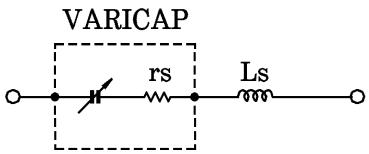
SPICE SYMBOL : $I_S$ (A), $R_S$ (Ω), N (–), CJ0 (F), $V_J$ (V), M (–), $B_V$ (V), $I_{BV}$ (A)

FREQUENCY RANGE : f = 0.1~3 GHz

REVERSE VOLTAGE RANGE : $V_R$ = 1~4 V

PARAMETER

| | | |
|---|---|---|
| $I_S$ | = | 2.247E – 16 |
| N | = | 1.003 |
| $B_V$ | = | 10 |
| $I_{BV}$ | = | 1.00E – 04 |
| $R_S$ | = | 0.55 |
| CJ0 | = | 1.050E – 11 |
| $V_J$ | = | 1.49 |
| M | = | 1.26 |
| Ls | = | 1.00E – 09 |




(Note 1) : These parameters from $I_S$ to M mean die characteristic.
Actually device has lead inductance so Ls is necessary for simulation.
And please use default value except above parameters.

(Note 2) : $R_S$ shows the value at the condition of $V_R$ = 1 V and f = 470 MHz.
If another value is needed, please refer to $R_S$ – $V_R$ curve in this data sheets.