TOSHIBA 1SV101

TOSHIBA VARIABLE CAPACITANCE DIODE SILICON EPITAXIAL PLANAR TYPE

1 S V 1 0 1

FM TUNER APPLICATIONS

High Capacitance Ratio $: C_{3V}/C_{9V} = 2.0 \sim 2.7$

Low Series Resistance $: r_{S} = 0.3 \Omega \text{ (Typ.)}$

Small Package.

Low Tuning Voltage Range : 3 V-9 V

MAXIMUM RATINGS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | RATING | UNIT |
|---------------------------|-----------------------------|---------|------|
| Reverse Voltage | v_{R} | 15 | V |
| Junction Temperature | T_{j} | 125 | °C |
| Storage Temperature Range | $\mathrm{T}_{\mathrm{stg}}$ | -55~125 | °C |

4.2MAX 0.55MAX 1. ANODE 2. CATHODE **JEDEC**

1-4E1A

Unit in mm

Weight: 0.9 g

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EIAJ

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

| CHARACTERISTIC | SYMBOL | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|-------------------|-----------------------------------|---------------------------|------|------|------|------|
| Reverse Voltage | $v_{ m R}$ | $I_R = 10 \mu A$ | 15 | _ | _ | V |
| Reverse Current | ${ m I}_{ m R}$ | $V_{ m R} = 15~{ m V}$ | _ | _ | 10 | nA |
| Capacitance | c_{3V} | $ m V_R = 3~V,~f = 1~MHz$ | 28 | _ | 32 | pF |
| Capacitance | c_{9V} | $V_{ m R}=9 m V,\;f=1MHz$ | 12 | _ | 14 | pF |
| Capacitance Ratio | C _{3V} / C _{9V} | _ | 2.0 | _ | 2.7 | |
| Series Resistance | r_{S} | C = 30 pF, f = 50 MHz | | 0.3 | 0.5 | Ω |

(Note): Units are compounded in one package and are matched to 3%.

$$\frac{\mathrm{C}\,(\mathrm{Max.}\,) - \mathrm{C}\,(\mathrm{Min.}\,)}{\mathrm{C}\,(\mathrm{Min.}\,)} \; \leq 0.03 \quad (\mathrm{V_R} = 3\;\mathrm{V-9}\;\,\mathrm{V})$$

and capacitance is classified as Table 1.

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Table 1 : Address classification of capacitance TEST CONDITION : f = 1 MHz, $Ta = 25^{\circ}\text{C}$

Unit : pF

| No. | c_{3V} | $\mathrm{c}_{5\mathrm{V}}$ | c_{7V} | c_{9V} |
|-----|-------------|----------------------------|----------------------------|---------------|
| 1 | 28.20~29.04 | 20.50~21.11 | 15.65~16.11 | 12.066~12.427 |
| 2 | 28.85~29.71 | 20.97~21.59 | 16.01~16.49 | 12.343~12.713 |
| 3 | 29.51~30.39 | 21.44~22.08 | 16.38~16.87 | 12.627~13.005 |
| 4 | 30.19~31.09 | 21.94~22.59 | 16.76~17.26 | 12.917~13.304 |
| 5 | 30.89~31.81 | 22.45~23.12 | 17.15~17.66 | 13.214~13.610 |
| 6 | | 22.97~23.65 | 17.54~18.06 | 13.518~13.923 |
| 7 | | 23.49~24.19 | 17.94~18.47 | |

- (1) The capacitance value of address classification is shown with confidence to at least $\pm 0.5\%$ accuracy.
- (2) The address is specified in the compounded package (or label).









