

TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

# 1SV232

## CATV Tuning

- High capacitance ratio:  $C_{2V}/C_{25V} = 10.5$  (typ.)
- Excellent C-V characteristics, and small tracking error.
- Useful for small size tuner.

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

| Characteristics           | Symbol    | Rating                           | Unit |
|---------------------------|-----------|----------------------------------|------|
| Reverse voltage           | $V_R$     | 30                               | V    |
| Peak reverse voltage      | $V_{RM}$  | 35 ( $R_L = 10\text{ k}\Omega$ ) | V    |
| 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).

Unit: mm

|         |        |
|---------|--------|
| JEDEC   | —      |
| JEITA   | —      |
| TOSHIBA | 1-1E1A |

Weight: 0.004 g (typ.)

## Electrical Characteristics (Ta = 25°C)

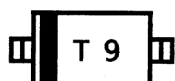
| Characteristics   | Symbol           | Test Condition                         | Min  | Typ. | Max  | Unit     |
|-------------------|------------------|----------------------------------------|------|------|------|----------|
| Reverse voltage   | $V_R$            | $I_R = 1\text{ }\mu\text{A}$           | 30   | —    | —    | V        |
| Reverse current   | $I_R$            | $V_R = 28\text{ V}$                    | —    | —    | 10   | nA       |
| Capacitance       | $C_{2V}$         | $V_R = 2\text{ V}, f = 1\text{ MHz}$   | 28   | 30.3 | 32   | pF       |
| Capacitance       | $C_{25V}$        | $V_R = 25\text{ V}, f = 1\text{ MHz}$  | 2.75 | 2.90 | 3.10 | pF       |
| Capacitance ratio | $C_{2V}/C_{25V}$ | —                                      | 10   | 10.5 | —    | —        |
| Series resistance | $r_s$            | $V_R = 5\text{ V}, f = 470\text{ MHz}$ | —    | 0.55 | 0.70 | $\Omega$ |

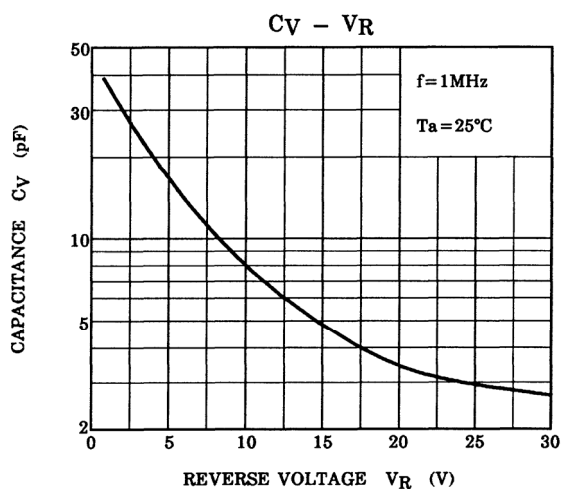
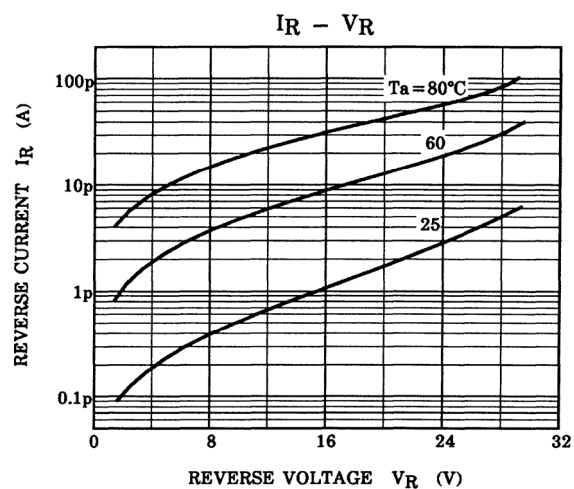
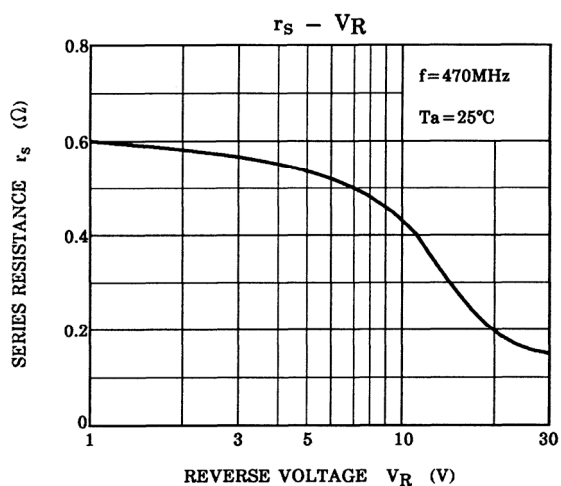
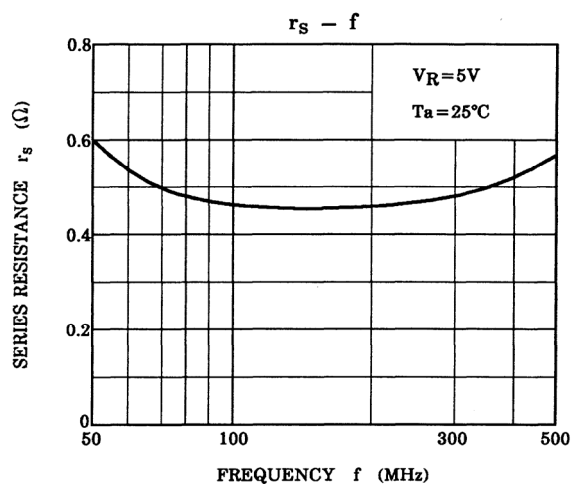
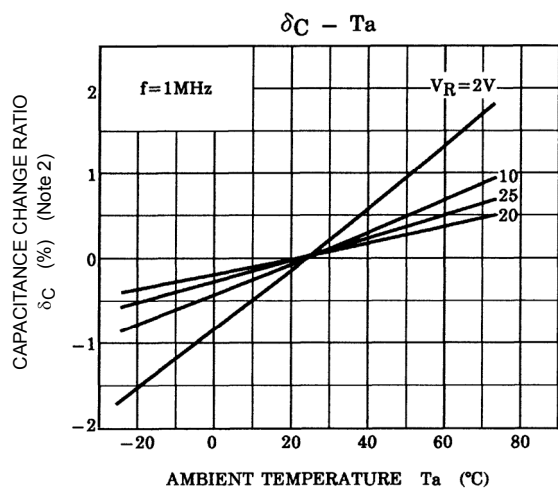
Note 1: Available in matched group for capacitance to 2.0%.

$$\frac{C(\text{max}) - C(\text{min})}{C(\text{min})} \leq 0.02$$

( $V_R = 2\sim 25\text{ V}$ )

## Marking





Note 2:  $\delta C = \frac{C(T_a) - C(25)}{C(25)} \times 100$  (%)

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20070701-EN GENERAL

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