

TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

## 1SV262

## CATV Tuning

- High capacitance ratio:  $C2\text{ V}/C25\text{ V} = 12.5$  (typ.)
- Low series resistance:  $r_s = 0.6\ \Omega$  (typ.)
- Excellent C-V characteristics, and small tracking error.
- Small package

Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| Characteristics           | Symbol    | Rating                           | Unit             |
|---------------------------|-----------|----------------------------------|------------------|
| Reverse voltage           | $V_R$     | 34                               | V                |
| Peak reverse voltage      | $V_{RM}$  | 36 ( $R_L = 10\text{ k}\Omega$ ) | V                |
| Junction temperature      | $T_j$     | 125                              | $^\circ\text{C}$ |
| Storage temperature range | $T_{stg}$ | $-55\sim 125$                    | $^\circ\text{C}$ |

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.)

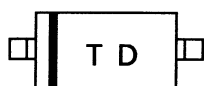
Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

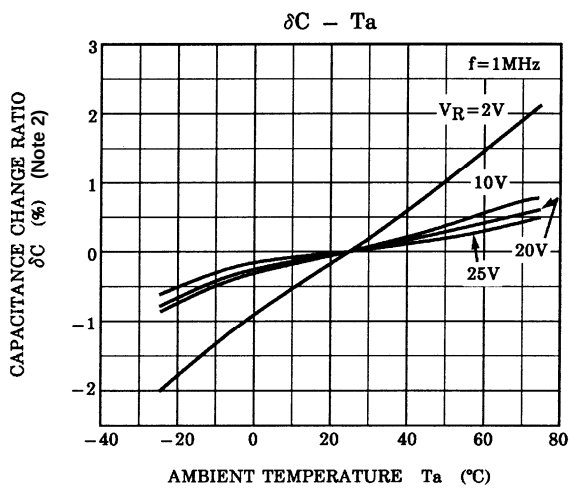
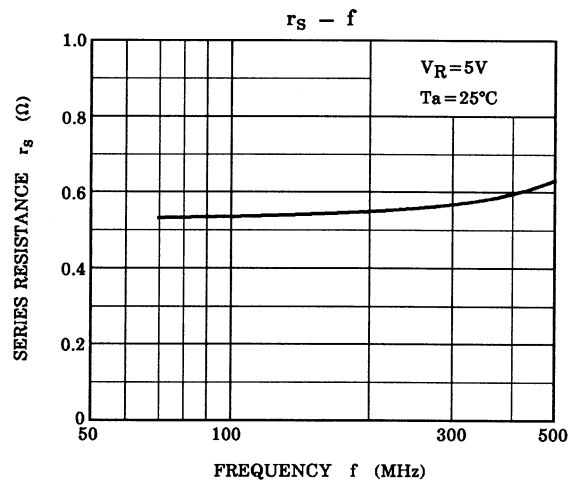
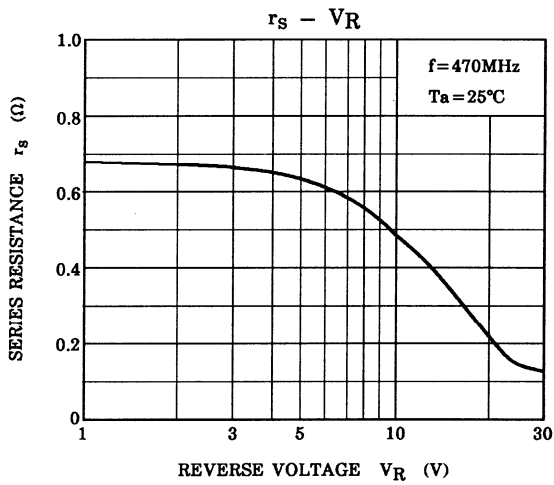
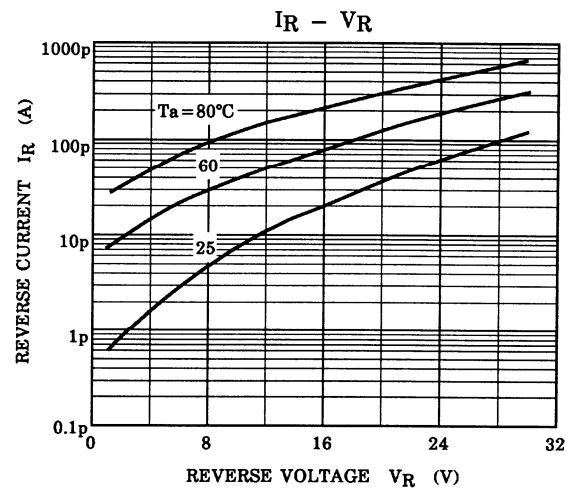
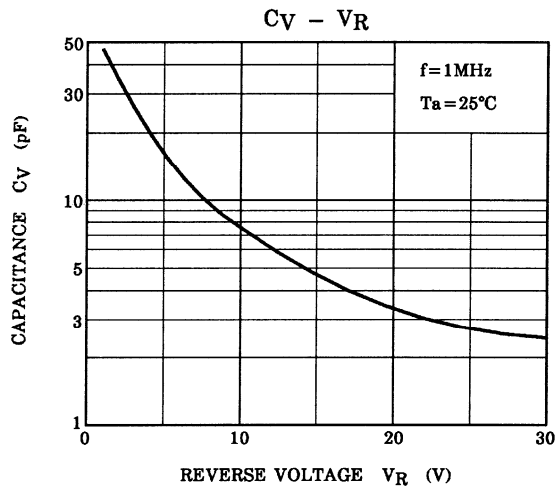
| Characteristics   | Symbol                      | Test Condition                         | Min  | Typ. | Max | Unit     |
|-------------------|-----------------------------|----------------------------------------|------|------|-----|----------|
| Reverse voltage   | $V_R$                       | $I_R = 1\ \mu\text{A}$                 | 34   | —    | —   | V        |
| Reverse current   | $I_R$                       | $V_R = 32\text{ V}$                    | —    | —    | 10  | nA       |
| Capacitance       | $C2\text{ V}$               | $V_R = 2\text{ V}, f = 1\text{ MHz}$   | 33   | 35.5 | 38  | pF       |
| Capacitance       | $C25\text{ V}$              | $V_R = 25\text{ V}, f = 1\text{ MHz}$  | 2.6  | 2.85 | 3.0 | pF       |
| Capacitance ratio | $C2\text{ V}/C25\text{ V}$  | —                                      | 12.0 | 12.5 | —   | —        |
| Capacitance ratio | $C25\text{ V}/C28\text{ V}$ | —                                      | 1.03 | —    | —   | —        |
| Series resistance | $r_s$                       | $V_R = 5\text{ V}, f = 470\text{ MHz}$ | —    | 0.6  | 0.8 | $\Omega$ |

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

$$\frac{C(\text{max}) - C(\text{min})}{C(\text{min})} \leq 0.02 \quad (V_R = 2\sim 25\text{ V})$$

## Marking





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

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