

TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

## 1SV269

## CATV Tuning

- High capacitance ratio:  $C2\text{ V}/C25\text{ V} = 11.5$  (typ.)
- Low series resistance:  $r_s = 0.55\ \Omega$  (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	$T_{stg}$	-55~125	$^\circ\text{C}$

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

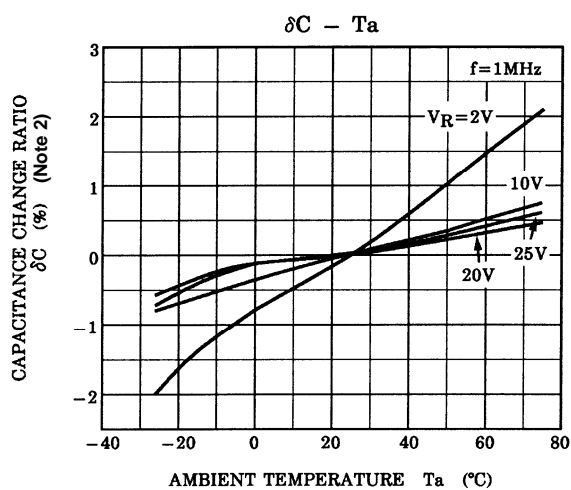
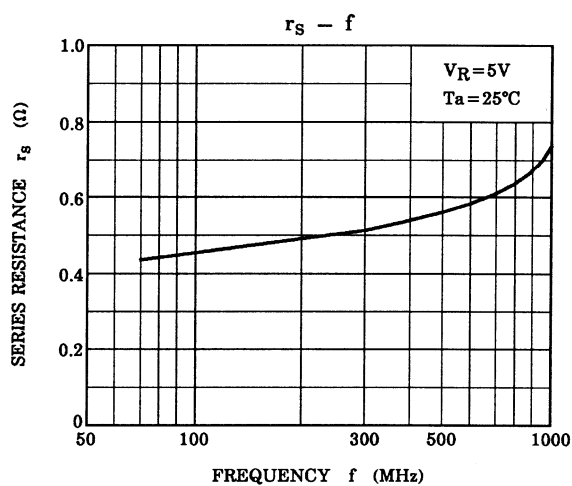
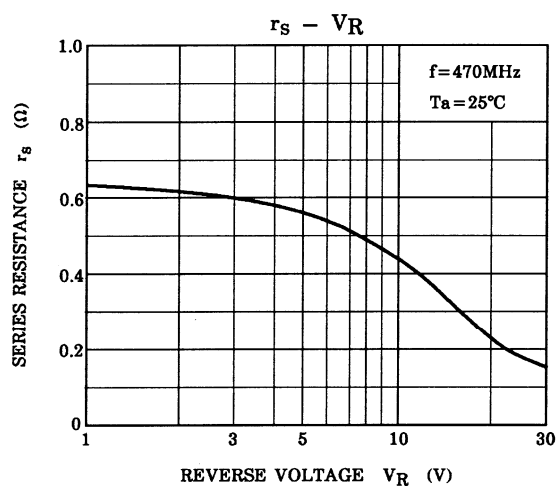
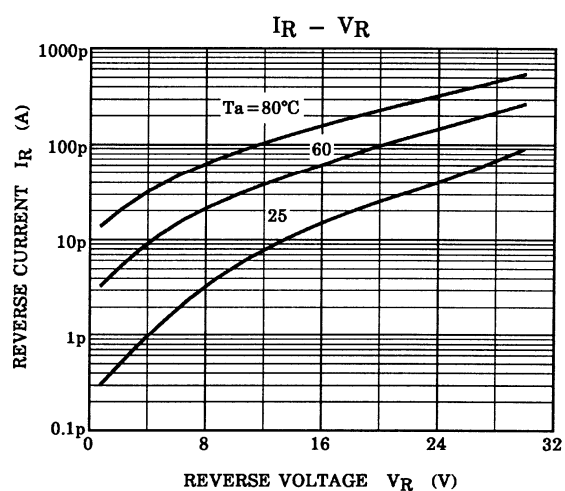
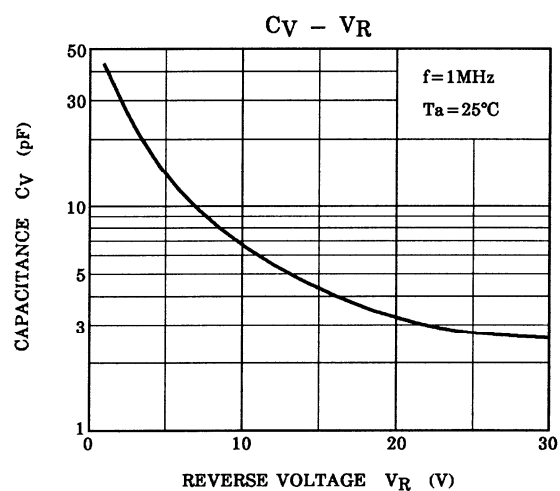
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Reverse voltage	$V_R$	$I_R = 1\ \mu\text{A}$	34	—	—	V
Reverse current	$I_R$	$V_R = 32\text{ V}$	—	—	10	nA
Capacitance	$C2\text{ V}$	$V_R = 2\text{ V}, f = 1\text{ MHz}$	29	31.5	34	pF
Capacitance	$C25\text{ V}$	$V_R = 25\text{ V}, f = 1\text{ MHz}$	2.5	2.75	2.9	pF
Capacitance ratio	$C2\text{ V}/C25\text{ V}$	—	11.0	11.5	—	—
Capacitance ratio	$C25\text{ V}/C28\text{ V}$	—	1.03	1.05	—	—
Series resistance	$r_s$	$V_R = 5\text{ V}, f = 470\text{ MHz}$	—	0.55	0.7	$\Omega$

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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