

TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

1SV278B

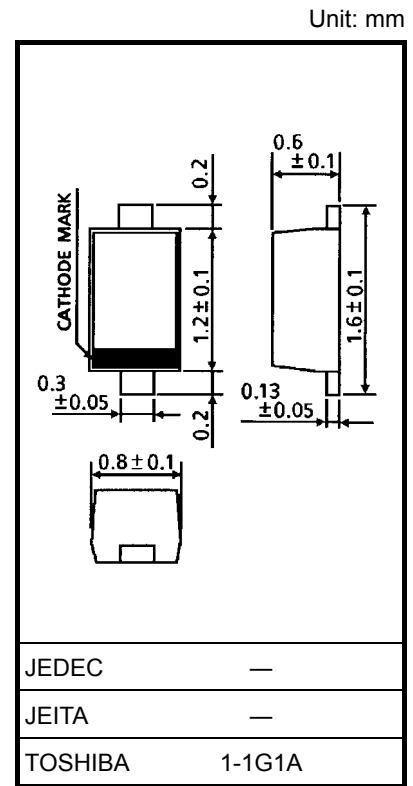
TV Tuning

- High capacitance ratio: $C_{2V}/C_{25V} = 6.5$ (typ.)
- Low series resistance: $r_s = 0.4 \Omega$ (typ.)
- Excellent C-V characteristics, and small tracking error.
- Suitable for small tuners

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).



Weight: 0.0014 g (typ.)

Electrical Characteristics (Ta = 25°C)

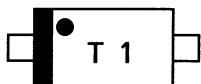
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Reverse voltage	V_R	$I_R = 1 \mu\text{A}$	30	—	—	V
Reverse current	I_R	$V_R = 28 \text{ V}$	—	—	10	nA
Capacitance	C_{2V}	$V_R = 2 \text{ V}, f = 1 \text{ MHz}$	14.16	—	16.25	pF
Capacitance	C_{25V}	$V_R = 25 \text{ V}, f = 1 \text{ MHz}$	2.01	—	2.43	pF
Capacitance ratio	C_{2V}/C_{25V}	—	5.90	6.50	7.28	—
Series resistance	r_s	$V_R = 5 \text{ V}, f = 470 \text{ MHz}$	—	0.4	0.58	Ω

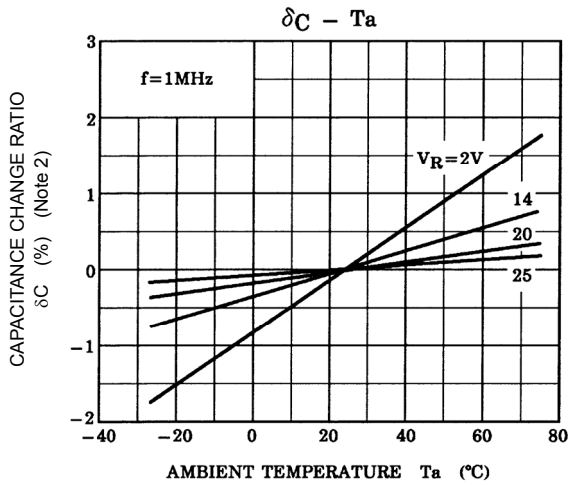
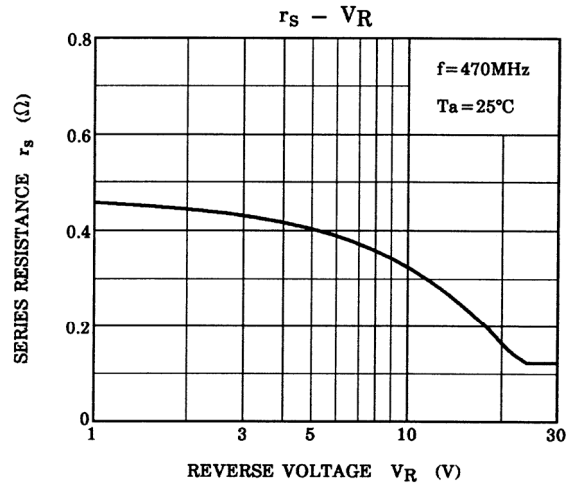
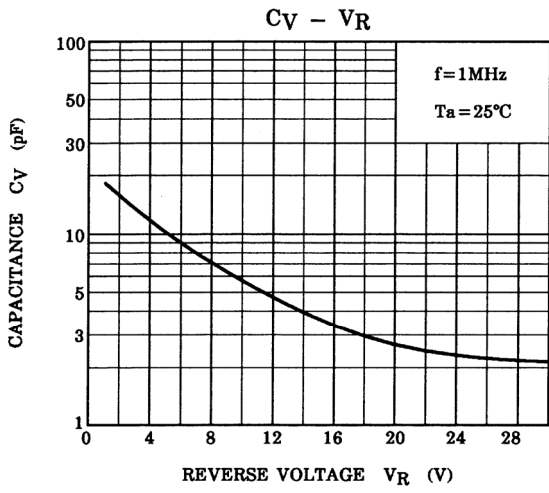
Note 1: Available in matched group for capacitance to 2%.

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

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

Marking





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

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20070701-EN GENERAL

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