

TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

1SV283B

CATV Tuning

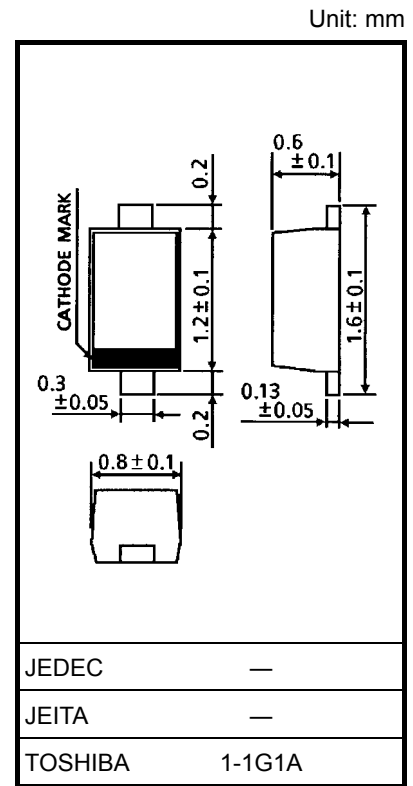
- High capacitance ratio: $C_{2V}/C_{25V} = 11.5$ (typ.)
- Low series resistance: $r_s = 0.55 \Omega$ (typ.)
- Excellent C-V characteristics and small tracking error
- Suitable for small tuners

Absolute Maximum Ratings (Ta = 25°C)

Characteristic	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	°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)

Characteristic	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	C_{2V}	$V_R = 2 \text{ V}, f = 1 \text{ MHz}$	29	31.5	34	pF
	C_{25V}	$V_R = 25 \text{ V}, f = 1 \text{ MHz}$	2.5	2.75	3	pF
Capacitance ratio	C_{2V}/C_{25V}	—	10.6	11.5	—	—
	C_{25V}/C_{28V}	—	1.03	—	—	—
Series resistance	r_s	$V_R = 5 \text{ V}, f = 470 \text{ MHz}$	—	0.55	0.75	Ω

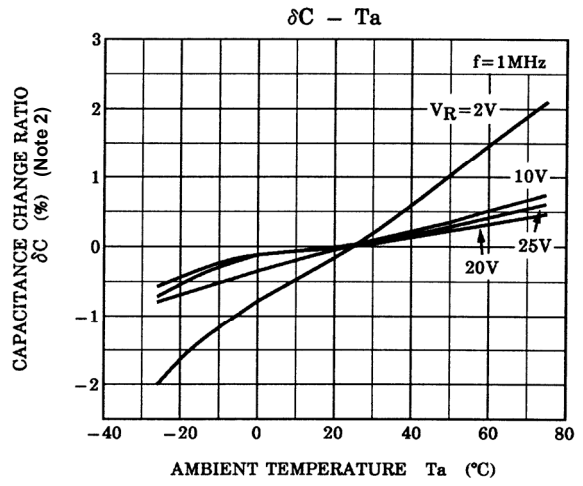
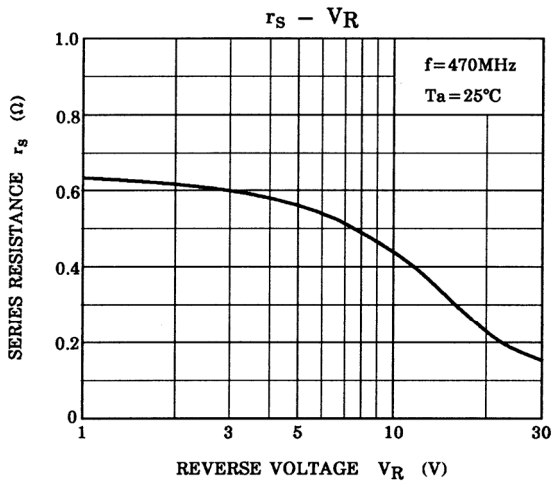
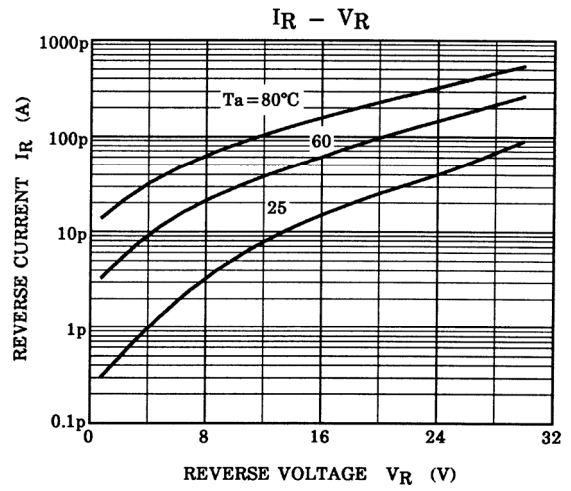
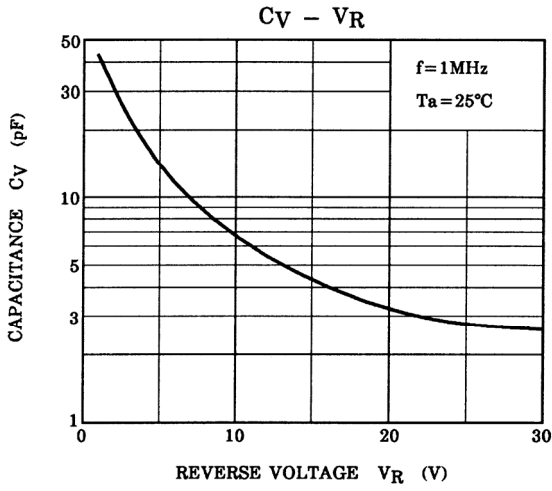
Note 1: Available in a matched group for capacitance to 2.0%.

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

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

Marking





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

RESTRICTIONS ON PRODUCT USE

20070701-EN GENERAL

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