

TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

1SV277

VCO for UHF Band Radio

Unit: mm

- High capacitance ratio: $C_{1V} / C_{4V} = 2.3$ (typ.)
- Low series resistance: $r_s = 0.42 \Omega$ (typ.)
- Small package

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

Characteristics	Symbol	Rating	Unit
Reverse voltage	V_R	10	V
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature range	T_{stg}	-55 to 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).

JEDEC	—
JEITA	—
TOSHIBA	1-1E1A

Weight: 0.004 g (typ.)

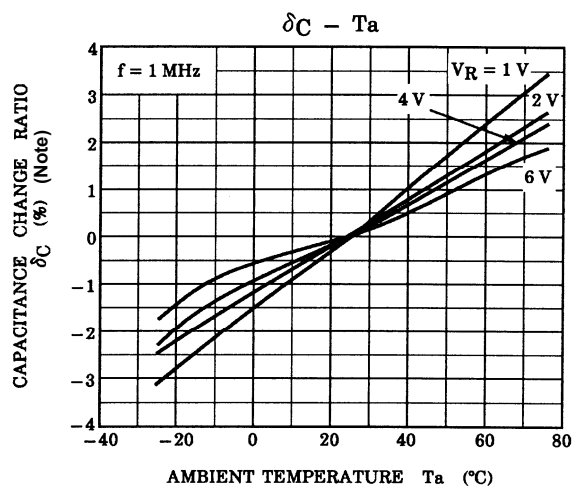
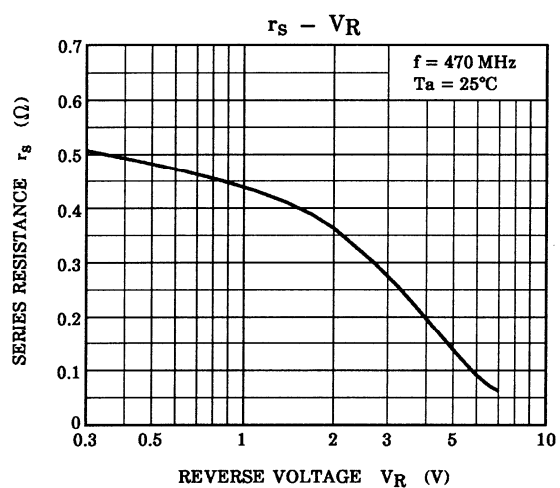
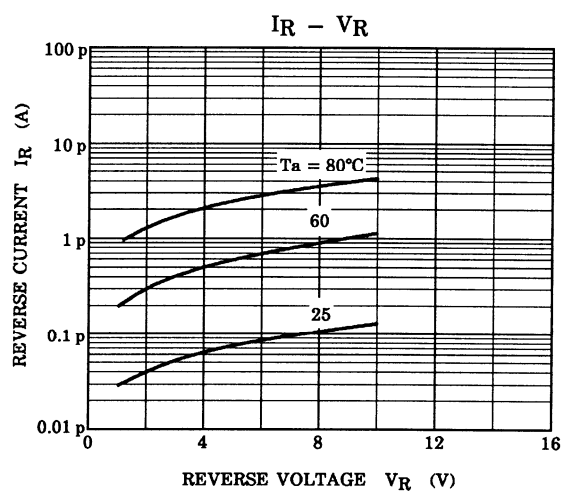
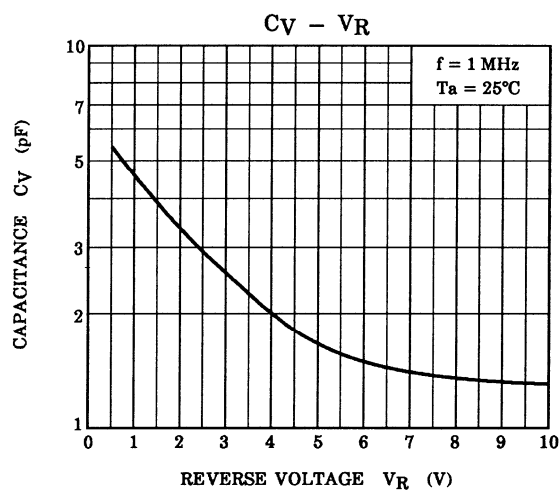
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Reverse voltage	V_R	$I_R = 1 \mu\text{A}$	10	—	—	V
Reverse current	I_R	$V_R = 10 \text{ V}$	—	—	3	nA
Capacitance	C_{1V}	$V_R = 1 \text{ V}, f = 1 \text{ MHz}$	4.0	4.5	4.9	pF
Capacitance	C_{4V}	$V_R = 4 \text{ V}, f = 1 \text{ MHz}$	1.85	2.0	2.35	pF
Capacitance ratio	C_{1V} / C_{4V}	—	2.0	2.3	—	—
Series resistance	r_s	$V_R = 1 \text{ V}, f = 470 \text{ MHz}$	—	0.42	0.55	Ω

Marking



Start of commercial production
1994-03



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

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