

TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

1SV239

VCO for UHF Radio

Unit: mm

- Ultra low series resistance: $r_s = 0.44 \Omega$ (typ.)
- Useful for small size set

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

Characteristics	Symbol	Rating	Unit
Reverse voltage	V_R	15	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).

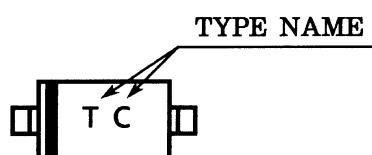
JEDEC		—
JEITA		—
TOSHIBA		1-1E1A

Weight: 0.004 g (typ.)

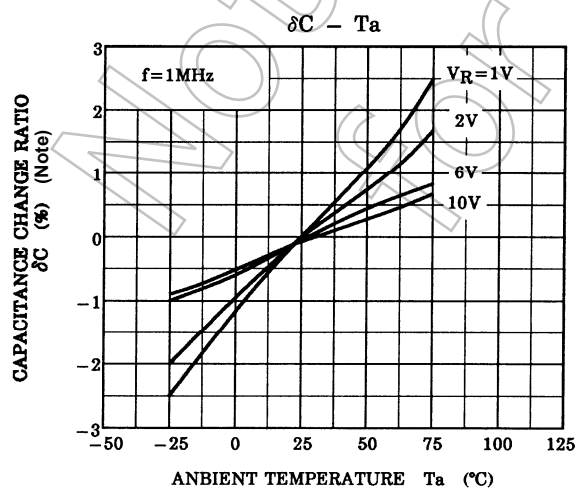
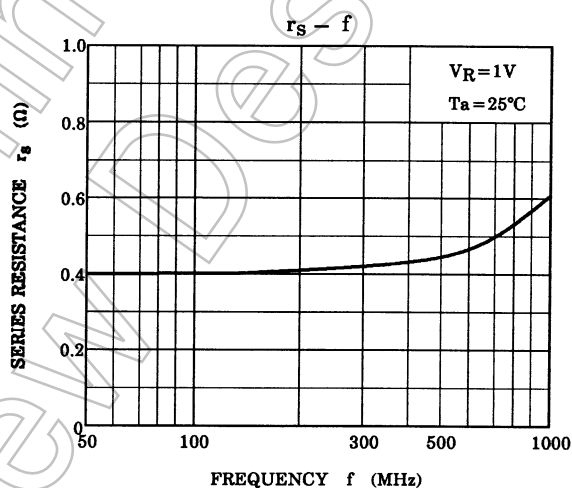
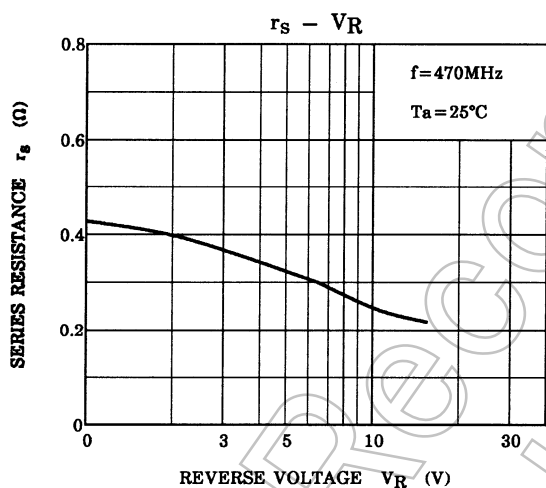
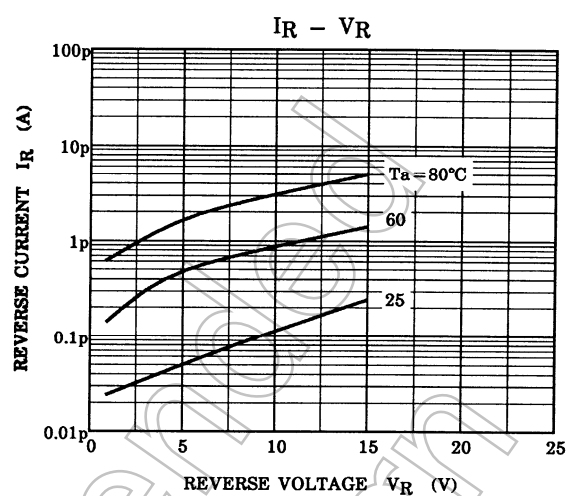
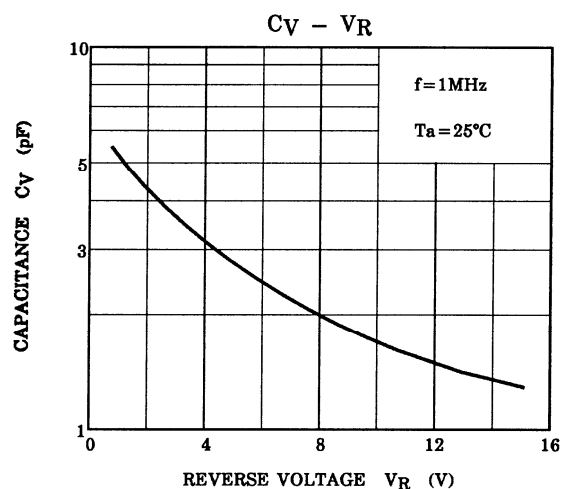
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Reverse voltage	V_R	$I_R = 1 \mu\text{A}$	15	—	—	V
Reverse current	I_R	$V_R = 15 \text{ V}$	—	—	3	nA
Capacitance	C_{2V}	$V_R = 2 \text{ V}, f = 1 \text{ MHz}$	3.8	4.25	4.7	pF
Capacitance	C_{10V}	$V_R = 10 \text{ V}, f = 1 \text{ MHz}$	1.5	1.75	2.0	pF
Capacitance ratio	C_{2V} / C_{10V}	—	2.0	2.4	—	—
Series resistance	r_s	$V_R = 1 \text{ V}, f = 470 \text{ MHz}$	—	0.44	0.6	Ω

Marking



Start of commercial production
1989-05



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

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