

TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

1SV245

UHF SHF Tuning

- High capacitance ratio: $C2\text{ V}/C25\text{ V} = 5.7$ (typ.)
- Low series resistance: $r_s = 1.2\ \Omega$ (typ.)
- Excellent C-V characteristics, and small tracking error.

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

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	$^\circ\text{C}$
Storage temperature range	T_{stg}	$-55\sim 125$	$^\circ\text{C}$

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.)

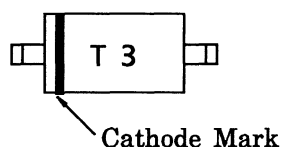
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

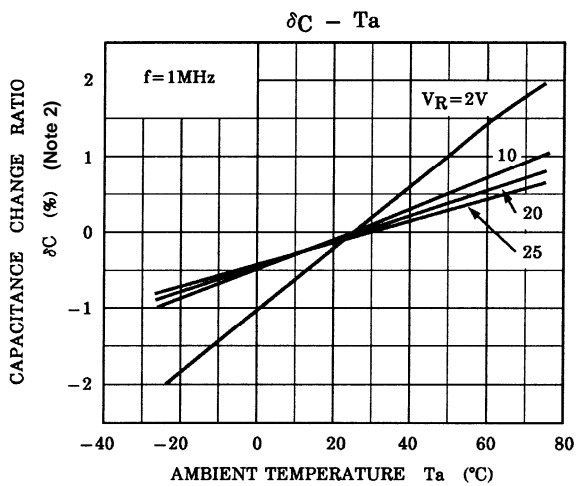
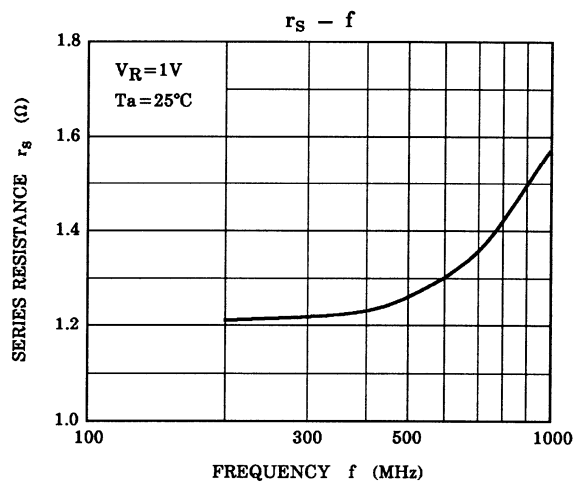
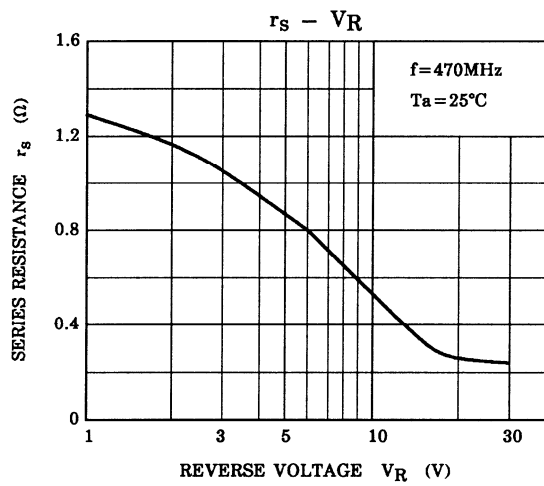
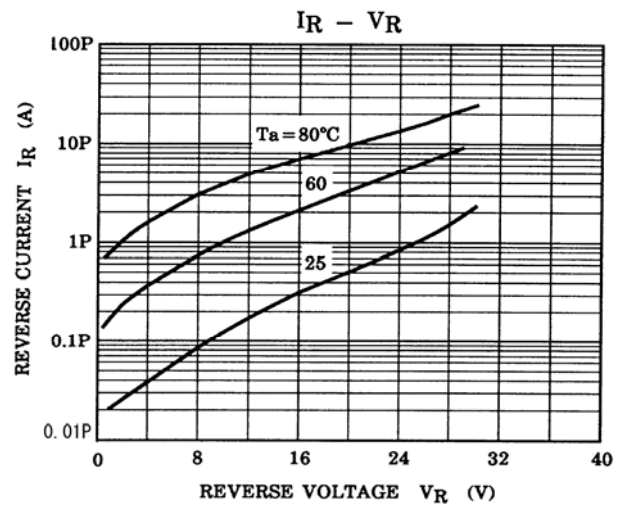
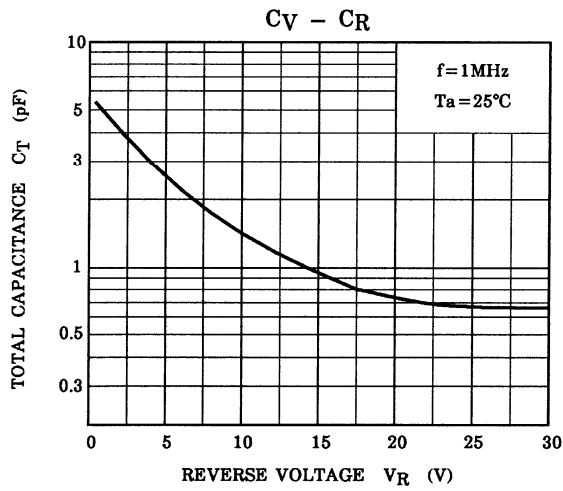
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Reverse voltage	V_R	$I_R = 1\ \mu\text{A}$	30	—	—	V
Reverse current	I_R	$V_R = 28\text{ V}$	—	—	10	nA
Capacitance	$C2\text{ V}$	$V_R = 2\text{ V}, f = 1\text{ MHz}$	3.31	—	4.55	pF
Capacitance	$C25\text{ V}$	$V_R = 25\text{ V}, f = 1\text{ MHz}$	0.61	—	0.77	pF
Capacitance ratio	$C2\text{ V}/C25\text{ V}$	—	5.0	5.7	6.5	—
Series resistance	r_s	$V_R = 1\text{ V}, f = 470\text{ MHz}$	—	1.2	2.0	Ω

Note 1: Unites are compounded in one package and are matched to 6.0%.

$$\frac{C(\text{max}) - C(\text{min})}{C(\text{min})} \leq 0.06 \quad (V_R = 2\sim 25\text{ V})$$

Marking





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

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