

TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

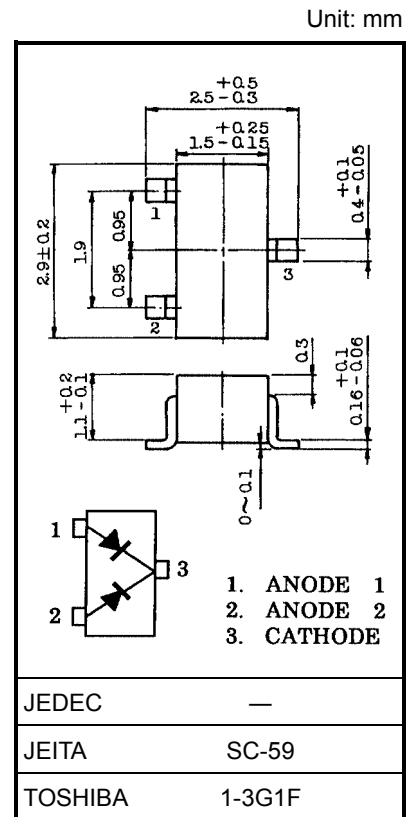
1SV242

TV VHF Wide Band Tuning

- High capacitance ratio: $C1 V/C28 V = 14.5$ (typ.)
- Low series resistance: $r_s = 0.65 \Omega$ (typ.)
- Excellent C-V characteristics, and small tracking error.
- Small package

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



Electrical Characteristics (Ta = 25°C)

Weight: 0.013 g (typ.)

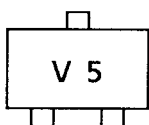
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Reverse voltage	V_R	$I_R = 1 \mu A$	30	—	—	V
Reverse current	I_R	$V_R = 28 \text{ V}$	—	—	10	nA
Capacitance	$C1 V$	$V_R = 1 \text{ V}, f = 1 \text{ MHz}$ (Note 1)	36	39	42	pF
Capacitance	$C28 V$	$V_R = 28 \text{ V}, f = 1 \text{ MHz}$ (Note 1)	2.43	2.7	3.0	pF
Capacitance ratio	$C1 V/C28 V$	— (Note 1)	13.4	14.5	—	—
Series resistance	r_s	$V_R = 5 \text{ V}, f = 470 \text{ MHz}$ (Note 1)	—	0.65	0.8	Ω

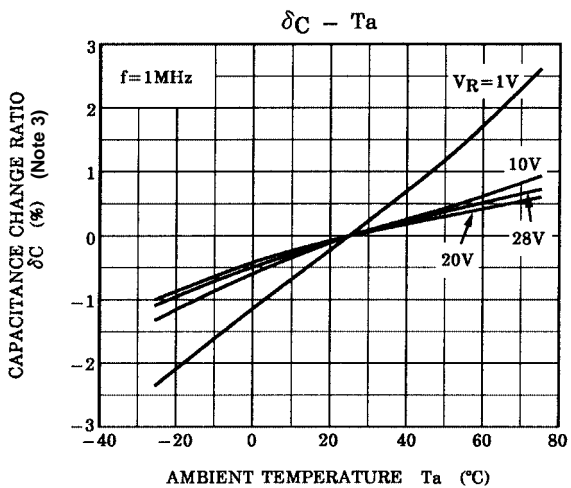
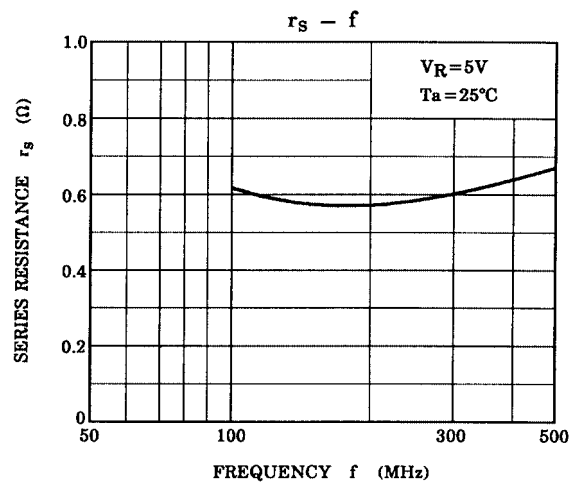
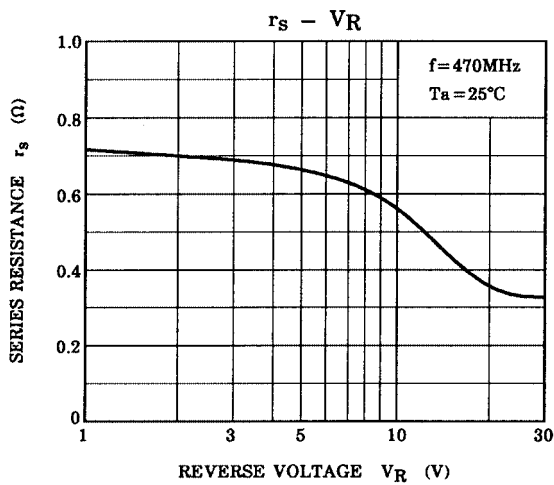
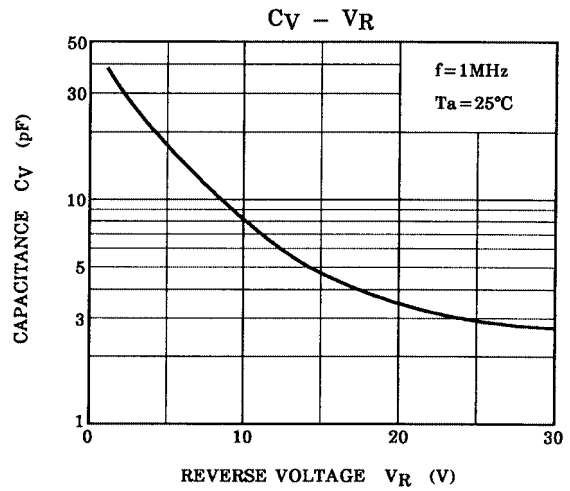
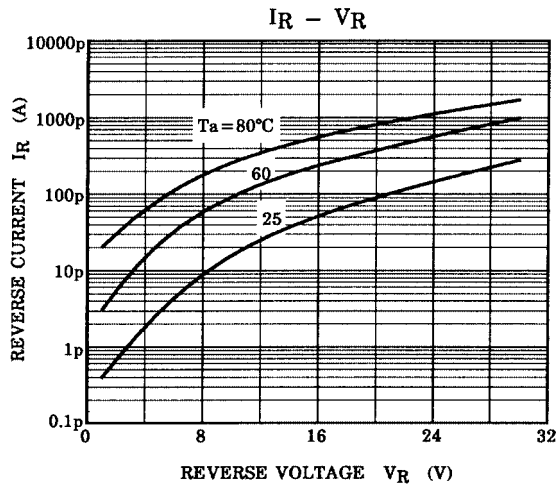
Note 1: Characteristic between anode 1 and anode 2

Note 2: Units are compounded in one package and are matched to 2.5%

$$\frac{C(\text{max}) - C(\text{min})}{C(\text{min})} \leq 0.025 \quad (V_R = 1 \sim 28 \text{ V})$$

Marking





Note 3:
$$\delta C = \frac{C(T_a) - C(25)}{C(25)} \times 100 \text{ (%)}$$

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