

TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

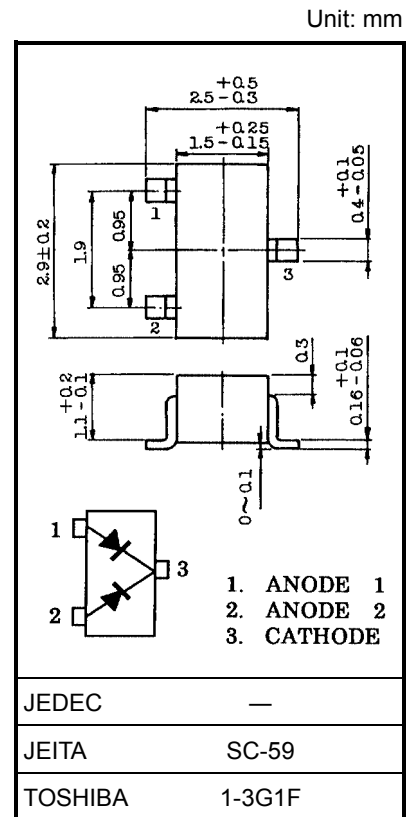
# 1SV242

## 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.)

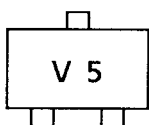
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Reverse voltage	$V_R$	$I_R = 1 \mu\text{A}$	30	—	—	V
Reverse current	$I_R$	$V_R = 28 \text{ V}$	—	—	10	nA
Capacitance	$C1 V$	$V_R = 1 \text{ V}, f = 1 \text{ MHz}$ (Note 1)	36	39	42	pF
Capacitance	$C28 V$	$V_R = 28 \text{ V}, f = 1 \text{ MHz}$ (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	$\Omega$

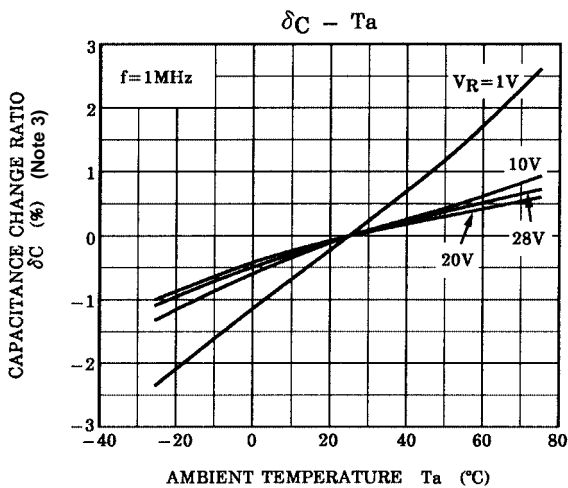
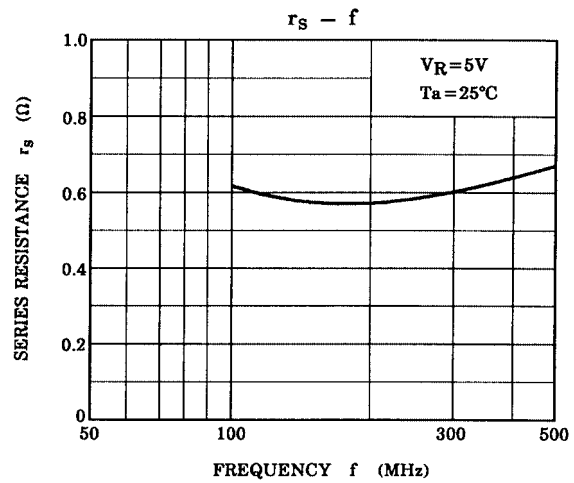
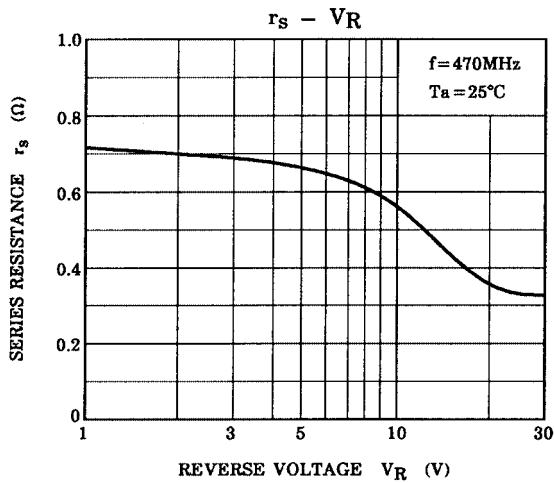
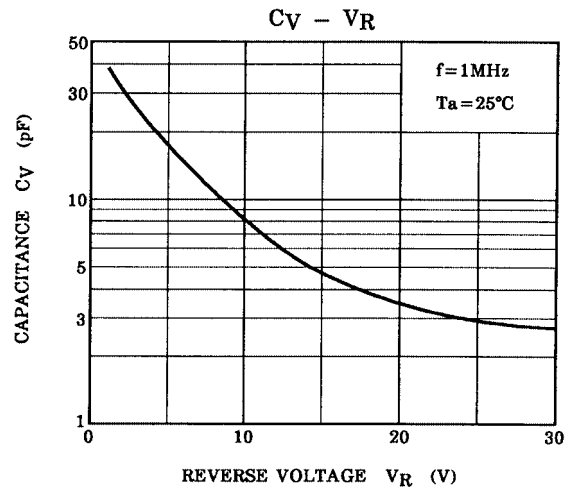
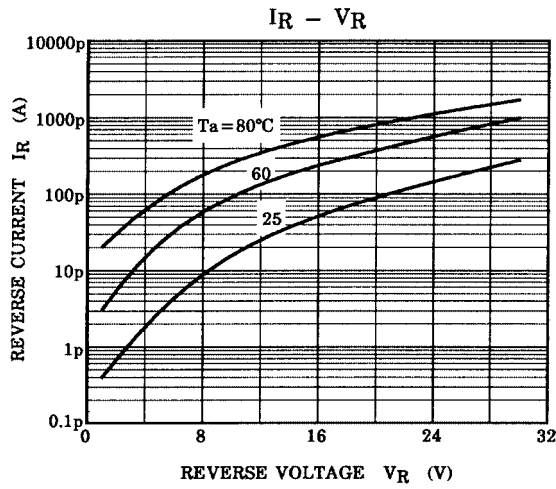
Note 1: Characteristic between anode 1 and anode 2

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

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