

# 1SV242

## TV VHF Wide Band Tuning

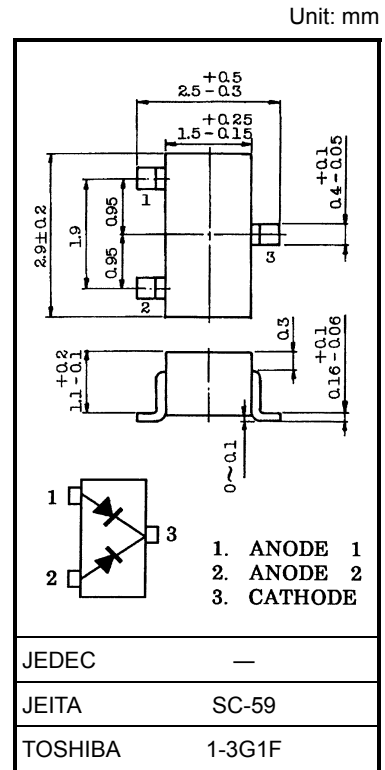
- High capacitance ratio:  $C1 V/C28 V = 14.5$  (typ.)
- Low series resistance:  $r_s = 0.65 \Omega$  (typ.)
- Excellent C-V characteristics, and small tracking error.
- Small package

### Absolute 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

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).



Weight: 0.013 g (typ.)

### Electrical Characteristics (Ta = 25°C)

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

Note 1: Characteristic between anode 1 and anode 2

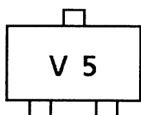
Note 2: The manufactured devices are divided into groups so that the capacitance variation in each group is kept below 2.5% in the  $V_R$  range from 1 V to 28 V.

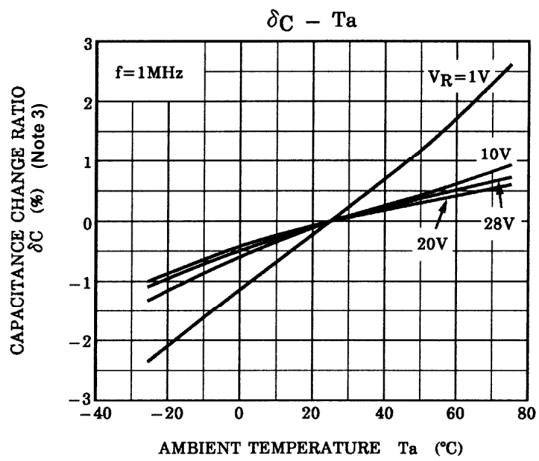
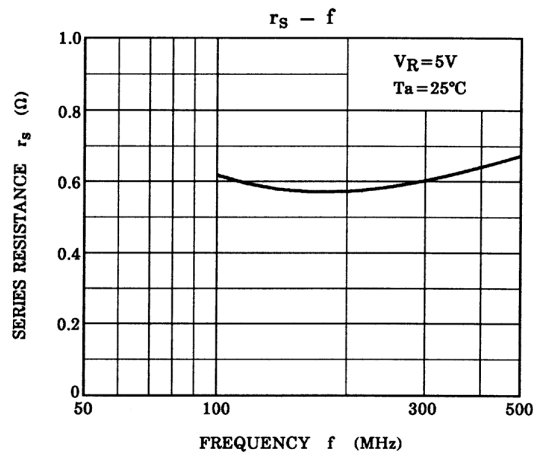
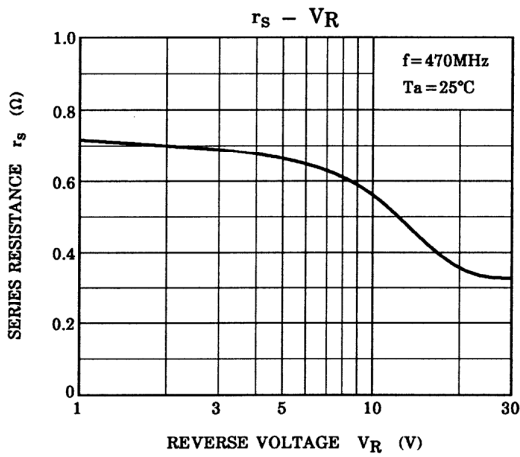
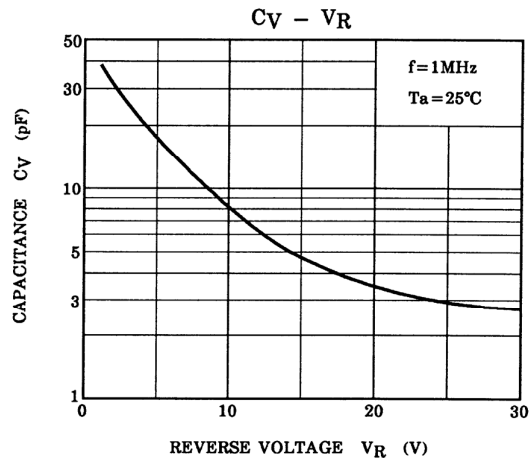
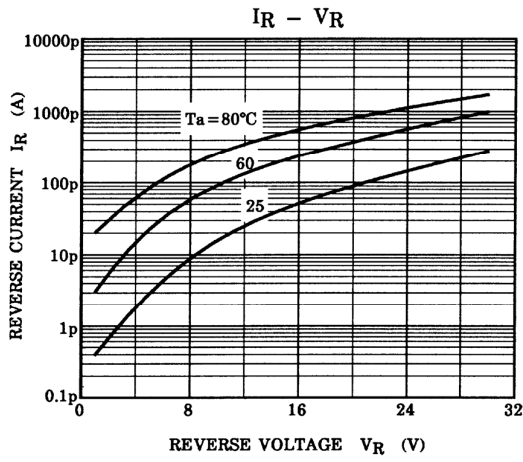
$$\frac{C(\text{max}) - C(\text{min})}{C(\text{min})} \leq 0.025 \quad (V_R = 1\sim 28 \text{ V})$$

Note 3: Packing

Devices in each group occupy adjacent cavities of the embossed tape. The number of devices in each group is a multiple of 12 (except for TPH6/TPH6R and TPH7/TPHR7).

### Marking





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

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20070701-EN GENERAL

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