

TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

# 1SV304

VCO for VHF Band Radio

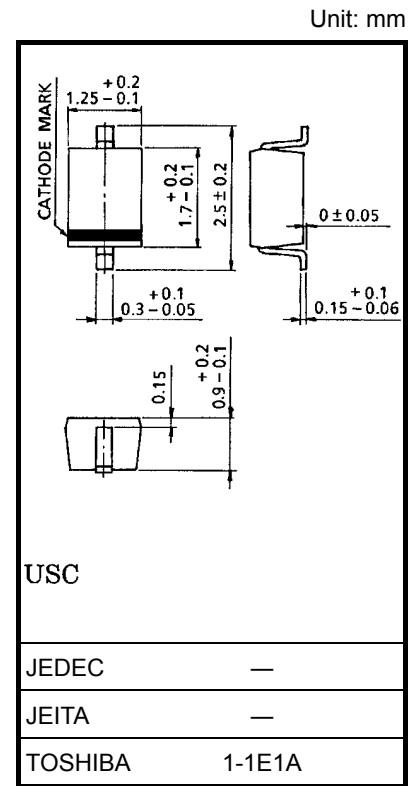
- Small package
- High capacitance ratio:  $C_{1V} / C_{4V} = 3.0$  (typ.)
- Low series resistance:  $r_s = 0.27 \Omega$  (typ.)

### Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Reverse voltage	$V_R$	10	V
Junction temperature	$T_j$	125	°C
Storage temperature range	$T_{stg}$	-55 to 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: 0.004 g (typ.)

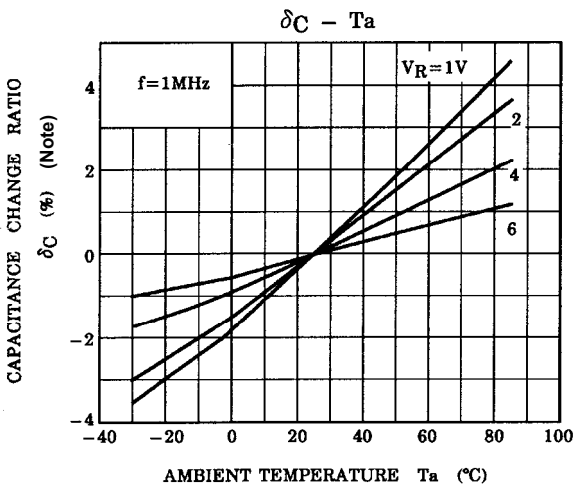
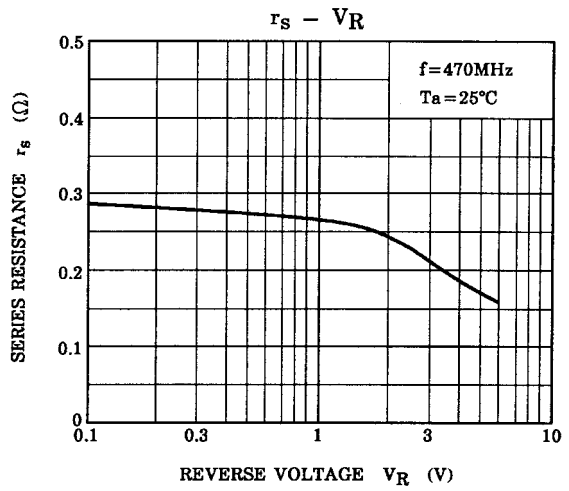
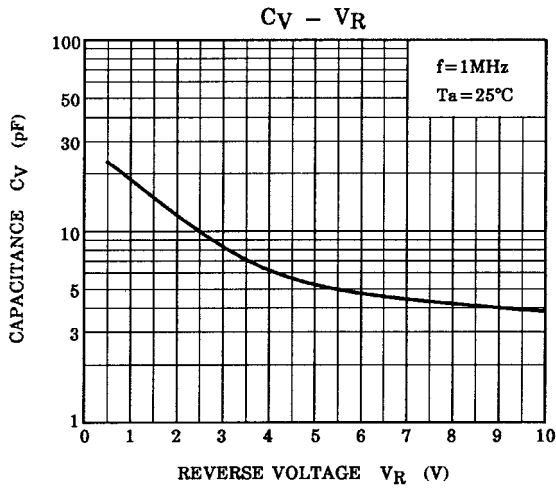
### Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Reverse voltage	$V_R$	$I_R = 1 \mu A$	10	—	—	V
Reverse current	$I_R$	$V_R = 10 V$	—	—	3	nA
Capacitance	$C_{1V}$	$V_R = 1 V, f = 1 MHz$	17.3	18.3	19.3	pF
Capacitance	$C_{4V}$	$V_R = 4 V, f = 1 MHz$	5.3	6.1	6.6	pF
Capacitance ratio	$C_{1V} / C_{4V}$	—	2.8	3	—	—
Series resistance	$r_s$	$V_R = 1 V, f = 470 MHz$	—	0.27	0.32	$\Omega$

### Marking



Start of commercial production  
1997-03



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

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