

TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

## 1SV305

VCO for VHF Band Radio

Unit: mm

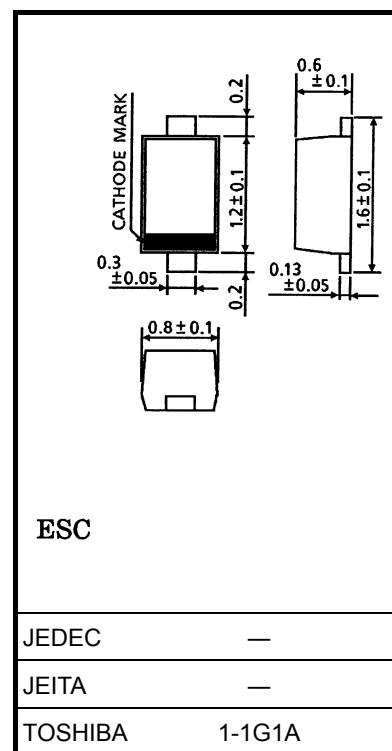
- Small package
- High capacitance ratio:  $C_{1V} / C_{4V} = 3.0$  (typ.)
- Low series resistance:  $r_s = 0.27 \Omega$  (typ.)

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

Characteristics	Symbol	Rating	Unit
Reverse voltage	$V_R$	10	V
Junction temperature	$T_j$	125	$^\circ\text{C}$
Storage temperature range	$T_{\text{stg}}$	-55 to 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).



Weight: 0.0014 g (typ.)

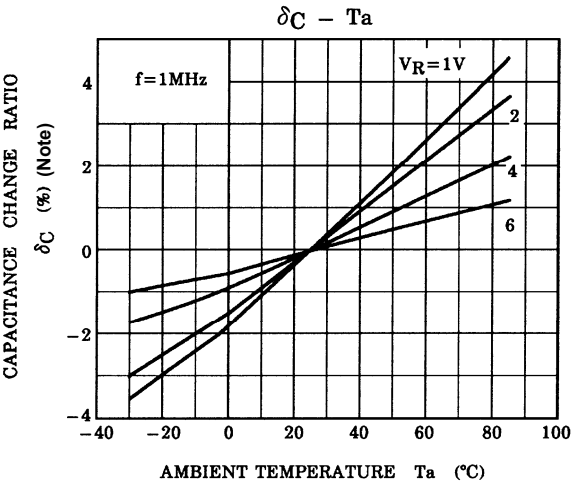
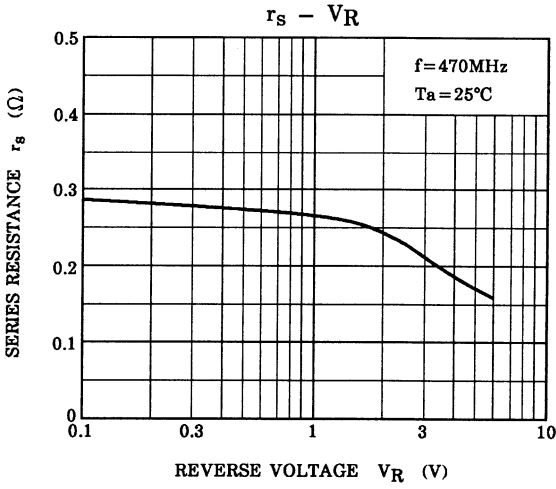
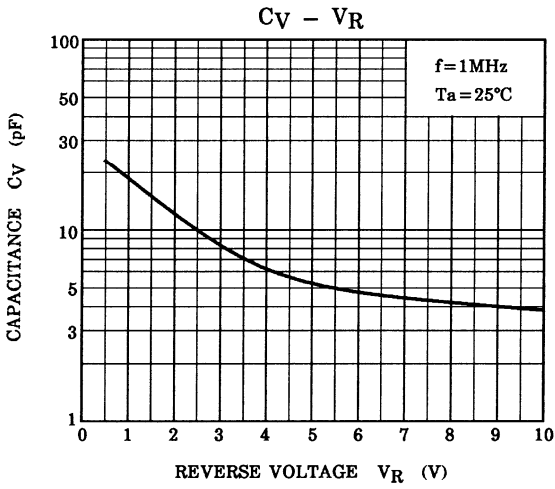
Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

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