TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

1SV305

VCO for VHF Band Radio

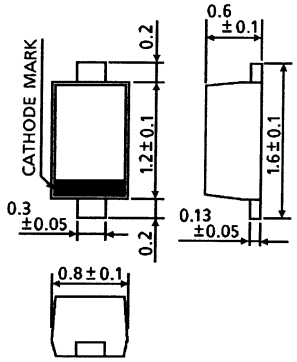
- Small package
- High capacitance ratio: C_{1V} / C_{4V} = 3.0 (typ.)
- Low series resistance: r_s = 0.27 Ω (typ.)

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).

Unit: mm



ESC

JEDEC	—
JEITA	—
TOSHIBA	1-1G1A

Weight: 0.0014 g (typ.)

Electrical Characteristics (Ta = 25°C)

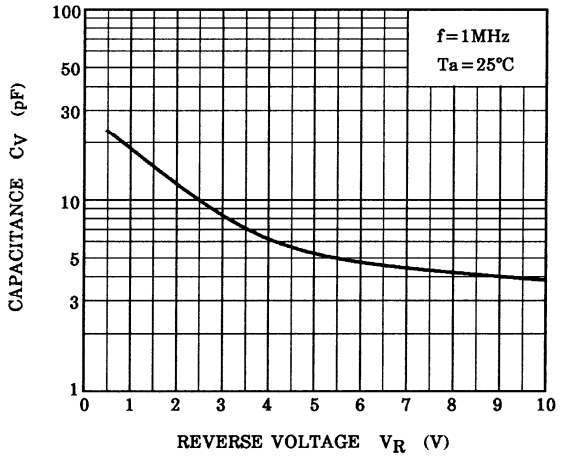
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Reverse voltage	V_R	I_R = 1 μA	10	—	—	V
Reverse current	I_R	V_R = 10 V	—	—	3	nA
Capacitance	C_{1V}	V_R = 1 V, f = 1 MHz	17.3	18.3	19.3	pF
Capacitance	C_{4V}	V_R = 4 V, f = 1 MHz	5.3	6.1	6.6	pF
Capacitance ratio	C_{1V} / C_{4V}	—	2.8	3	—	—
Series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

Marking

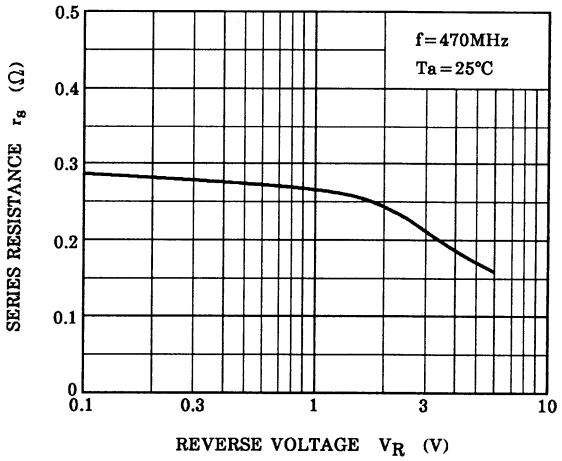


Start of commercial production
1997-03

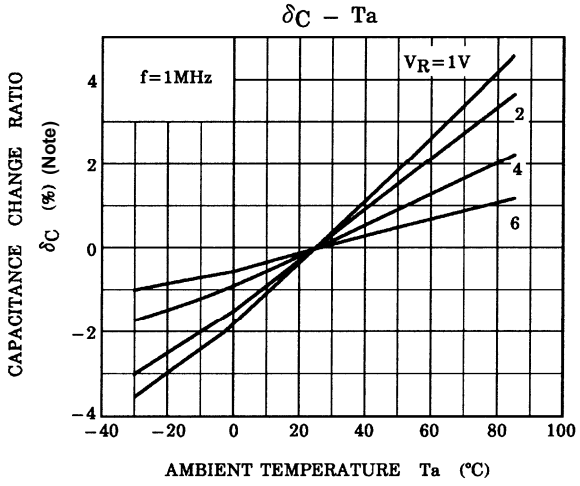
$C_V - V_R$



$r_S - V_R$



$\delta C - Ta$



Note: $\delta_C = \dfrac{C\ (Ta) - C\ (25)}{C\ (25)} \times 100\ \ (\%)$

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