

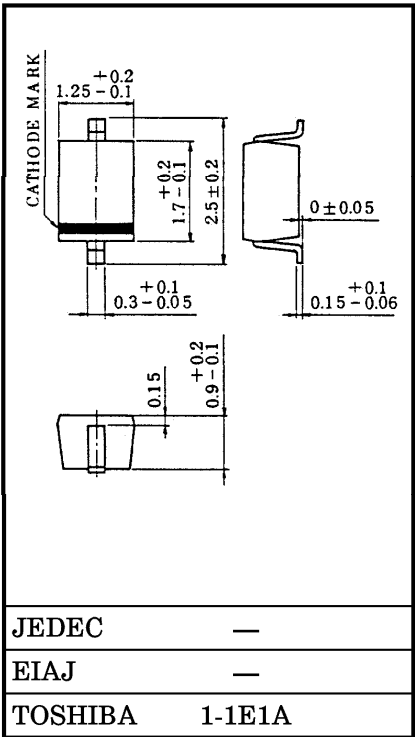
TOSHIBA VARIABLE CAPACITANCE DIODE SILICON EPITAXIAL PLANAR TYPE

1SV239

VCO FOR UHF RADIO

- Ultra Low Series Resistance : $r_s=0.44\Omega$ (Typ.)
- Useful for Small Size Set

Unit in mm



Weight : 0.004g

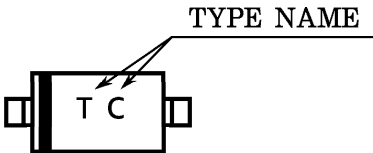
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Reverse Voltage	V_R	15	V
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	-55~125	°C

ELECTRICAL CHARACTERISTIC (Ta = 25°C)

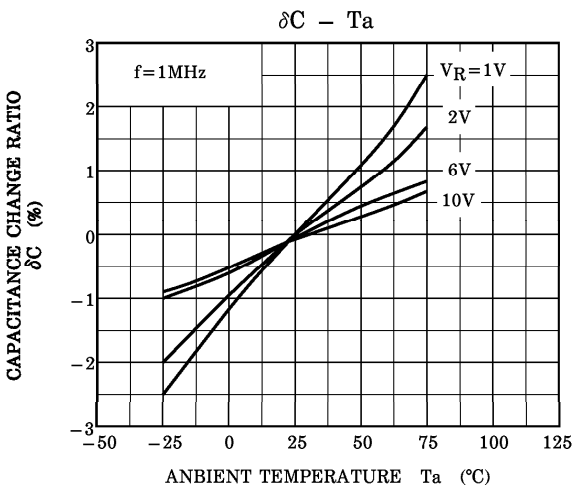
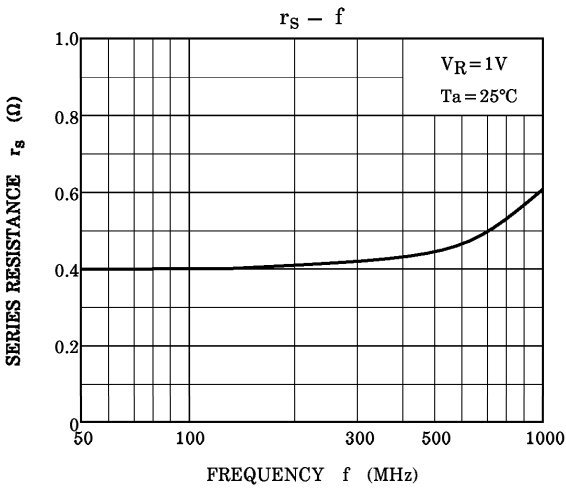
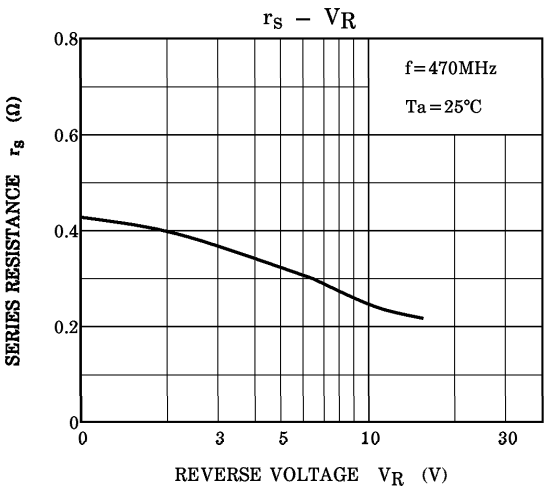
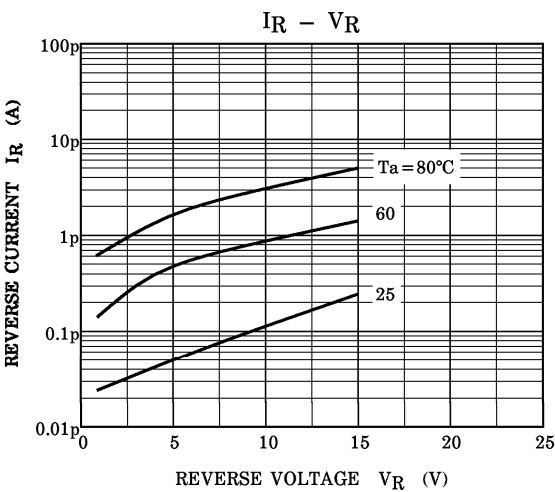
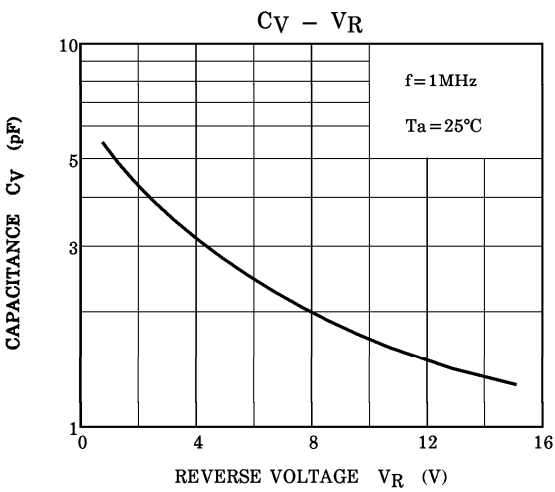
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reverse Voltage	V_R	$I_R=1\mu A$	15	—	—	V
Reverse Current	I_R	$V_R=15V$	—	—	3	nA
Capacitance	C_{2V}	$V_R=2V, f=1MHz$	3.8	4.25	4.7	pF
Capacitance	C_{10V}	$V_R=10V, f=1MHz$	1.5	1.75	2.0	pF
Capacitance Ratio	C_{2V}/C_{10V}	—	2.0	2.4	—	
Series Resistance	r_s	$V_R=1V, f=470MHz$	—	0.44	0.6	Ω

Marking



961001EAA2

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

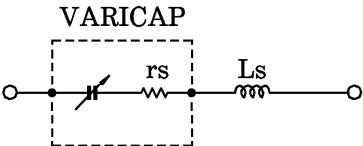
SPICE PARAMETER

SPICE MODEL : BERKLEY SPICE.2G.6 DIODE MODEL
DATA FORMAT : MODEL FORMAT
SPICE SYMBOL : I_S (A), R_S (Ω), N (-), $CJ0$ (F), V_J (V), M (-), B_V (V), I_{BV} (A)
FREQUENCY RANGE : $f = 0.1 \sim 3$ GHz
REVERSE VOLTAGE RANGE : $V_R = 2 \sim 10$ V

PARAMETER

$I_S = 5.381E - 16$
 $N = 1.037$
 $B_V = 15$
 $I_{BV} = 1.00E - 06$
 $R_S = 0.44$
 $CJ0 = 6.890E - 12$
 $V_J = 3.272$
 $M = 0.9812$

 $L_s = 1.00E - 09$



- (Note 1) : These parameters from I_S to M mean die characteristic.
Actually device has lead inductance so L_s is necessary for simulation.
And please use default value except above parameters.
- (Note 2) : R_S shows the value at the condition of $V_R = 1$ V and $f = 470$ MHz.
If another value is needed, please refer to $R_S - V_R$ curve in this data sheets.