

TOSHIBA VARIABLE CAPACITANCE DIODE SILICON EPITAXIAL PLANAR TYPE

1SV277

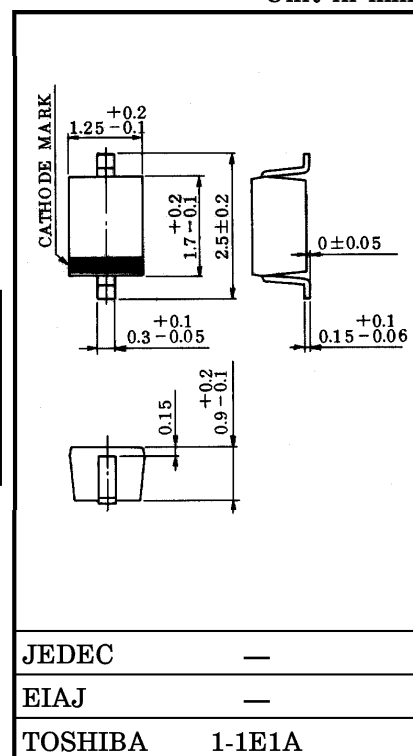
VCO FOR UHF BAND RADIO

Unit in mm

- High Capacitance Ratio : $C_{1V}/C_{4V}=2.3$ (Typ.)
- Low Series Resistance : $r_s=0.42\Omega$ (Typ.)
- Small Package

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Reverse Voltage	V_R	10	V
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-55\sim 125$	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

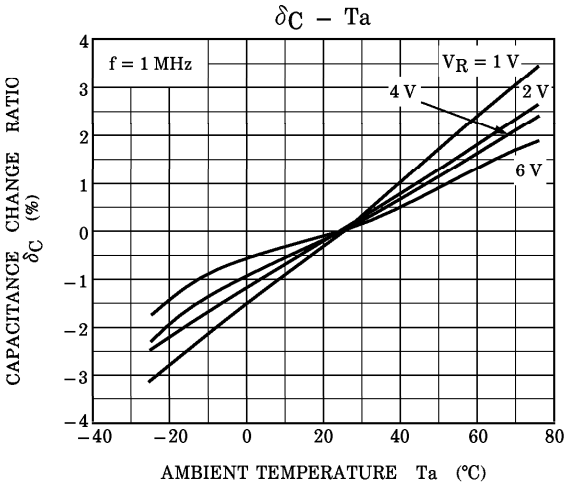
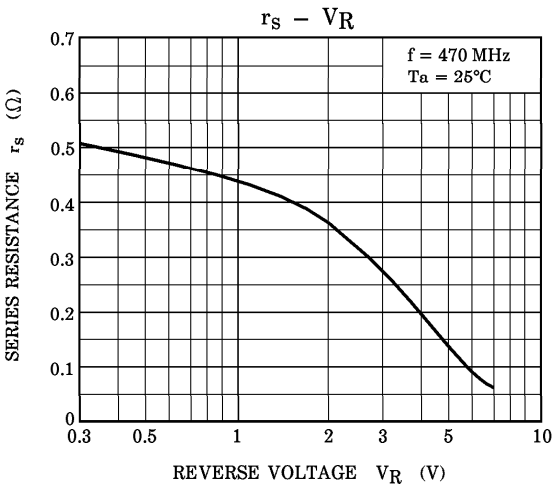
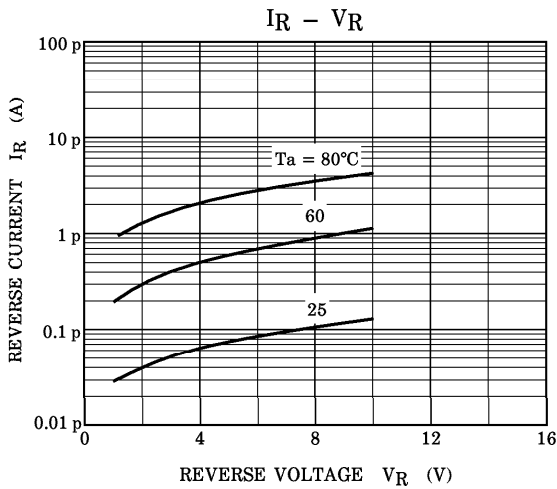
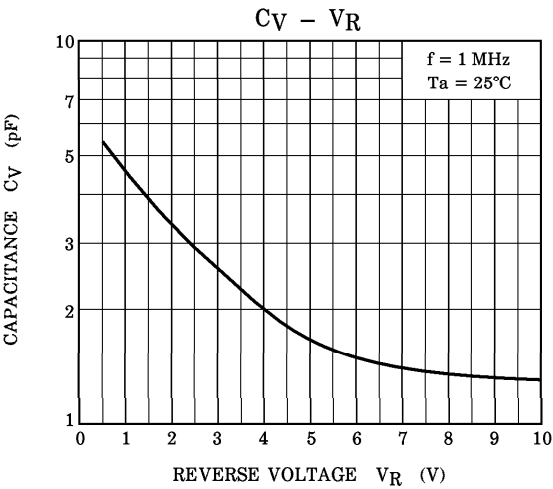
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reverse Voltage	V_R	$I_R = 1\mu\text{A}$	10	—	—	V
Reverse Current	I_R	$V_R = 10\text{V}$	—	—	3	nA
Capacitance	C_{1V}	$V_R = 1\text{V}, f = 1\text{MHz}$	4.0	4.5	4.9	pF
Capacitance	C_{4V}	$V_R = 4\text{V}, f = 1\text{MHz}$	1.85	2.0	2.35	pF
Capacitance Ratio	C_{1V}/C_{4V}	—	2.0	2.3	—	—
Series Resistance	r_s	$V_R = 1\text{V}, f = 470\text{MHz}$	—	0.42	0.55	Ω

MARKING



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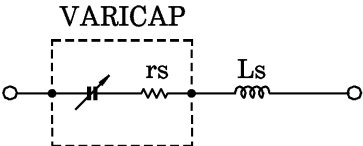
SPICE PARAMETER

SPICE MODEL : BERKLEY SPICE.2G.6 DIODE MODEL
DATA FORMAT : MODEL FORMAT
SPICE SYMBOL : I_S (A), R_S (Ω), N (-), C_{J0} (F), V_J (V), M (-), B_V (V), I_{BV} (A)
FREQUENCY RANGE : $f = 0.1 \sim 3$ GHz
REVERSE VOLTAGE RANGE : $V_R = 1 \sim 4$ V

PARAMETER

$I_S = 4.174E - 16$
 $N = 1.037$
 $B_V = 10$
 $I_{BV} = 1.00E - 04$
 $R_S = 0.42$
 $C_{J0} = 6.900E - 12$
 $V_J = 2.6$
 $M = 1.3$

 $L_s = 1.00E - 09$



- (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.