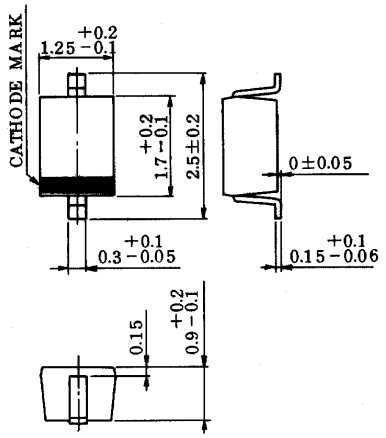
TOSHIBA VARIABLE CAPACITANCE DIODE SILICON EPITAXIAL PLANAR TYPE

1SV277

VCO FOR UHF BAND RADIO

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	1-1E1A

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

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Reverse Voltage	V_R	10	V
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

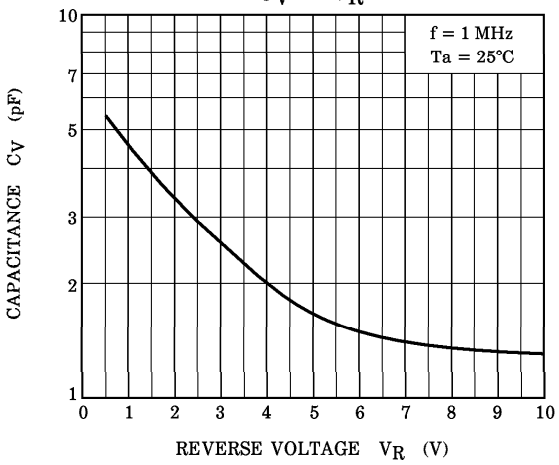
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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

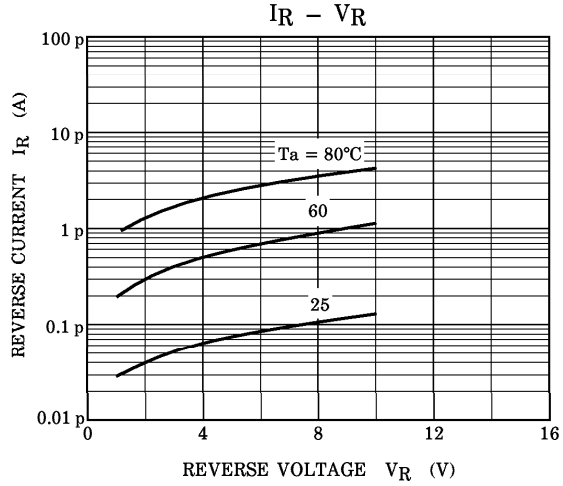
MARKING

961001EAA2

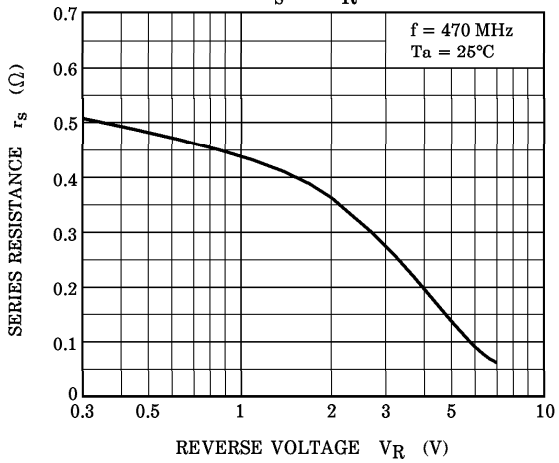
$C_V - V_R$



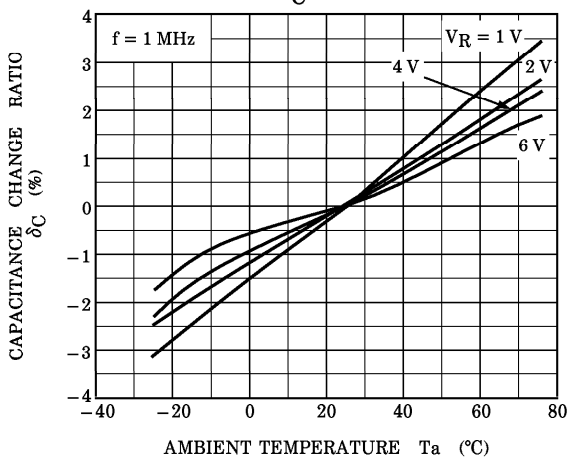
$I_R - V_R$



$r_S - V_R$



$\delta C - Ta$



SPICE PARAMETER

SPICE MODEL : BERKLEY SPICE.2G.6 DIODE MODEL

DATA FORMAT : MODEL FORMAT

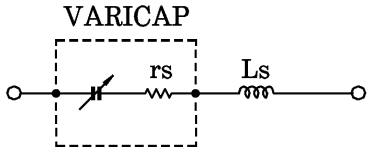
SPICE SYMBOL : I_S (A), R_S (Ω), N (–), CJ0 (F), V_J (V), M (–), B_V (V), I_{BV} (A)

FREQUENCY RANGE : f = 0.1~3 GHz

REVERSE VOLTAGE RANGE : V_R = 1~4 V

PARAMETER

I_S	=	4.174E – 16
N	=	1.037
B_V	=	10
I_{BV}	=	1.00E – 04
R_S	=	0.42
CJ0	=	6.900E – 12
V_J	=	2.6
M	=	1.3
– – – – – – – – – –		
Ls	=	1.00E – 09



(Note 1) : These parameters from I_S to M mean die characteristic.
Actually device has lead inductance so Ls 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.