

TOSHIBA DIODE SILICON EPITAXIAL PLANAR TYPE

1SV323

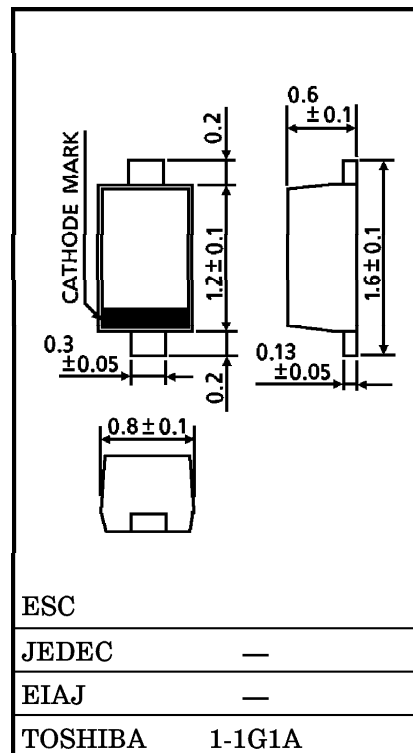
TCXO/VCO

- High Capacitance Ratio : $C_{1V}/C_{4V} = 4.3$ (Typ.)
- Low Series Resistance : $r_s = 0.4 \Omega$ (Typ.)
- Useful for Small Size Tuner.

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}	$-55 \sim 125$	$^\circ\text{C}$

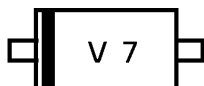
Unit in mm

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}	$V_R = 1 \text{ V}, f = 1 \text{ MHz}$	26.5	—	29.5	pF
Capacitance	C_{4V}	$V_R = 4 \text{ V}, f = 1 \text{ MHz}$	6.0	—	7.1	pF
Capacitance Ratio	C_{1V}/C_{4V}	—	4.0	4.3	—	—
Series Resistance	r_s	$V_R = 4 \text{ V}, f = 100 \text{ MHz}$	—	0.4	0.8	Ω

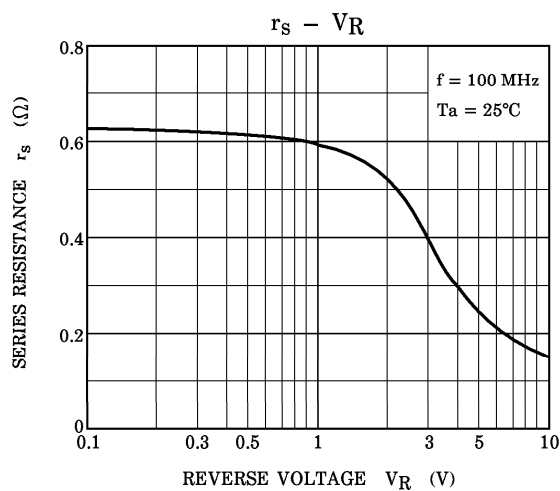
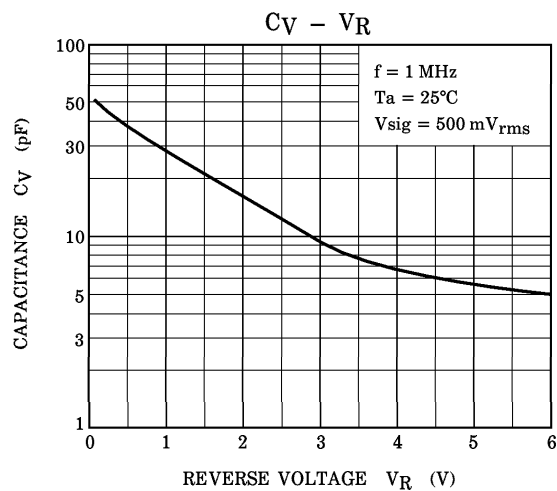
* Signal level when capacitance is measured : $V_{sig} = 500 \text{ mV}_{rms}$

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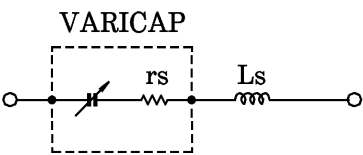
SPICE PARAMETER

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 = 0.1~3 GHz
REVERSE VOLTAGE RANGE	: V _R = 1~4 V

PARAMETER

I _S	=	1.668E - 15
N	=	1.02
B _V	=	10
I _{BV}	=	1.00E - 04
R _S	=	0.35
C _{J0}	=	5.787E - 11
V _J	=	2.595
M	=	2.379

L _s	=	5.00E - 10



- (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 = 4 V and f = 100 MHz.
If another value is needed, please refer to R_S - V_R curve in this data sheets.