

TOSHIBA VARIABLE CAPACITANCE DIODE SILICON EPITAXIAL PLANAR TYPE

1SV286

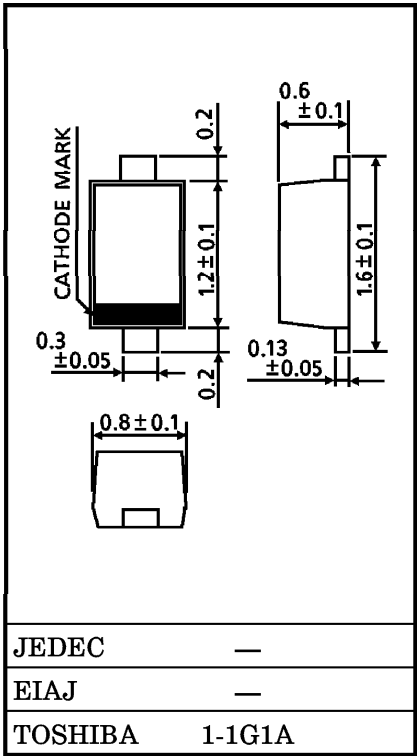
CATV CONVERTER 1'st OSC TUNING

Unit in mm

- High Capacitance Ratio : $C_{2V} / C_{20V} = 8.9$ (TYP.)
- Low Series Resistance : $r_s = 0.73 \Omega$ (TYP.)
- Useful for Small Size Tuner.

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Reverse Voltage	V_R	30	V
Peak Reverse Voltage	V_{RM}	35 ($R_L = 10k\Omega$)	V
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	-55~125	°C

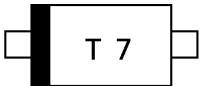


Weight : 0.0014g

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

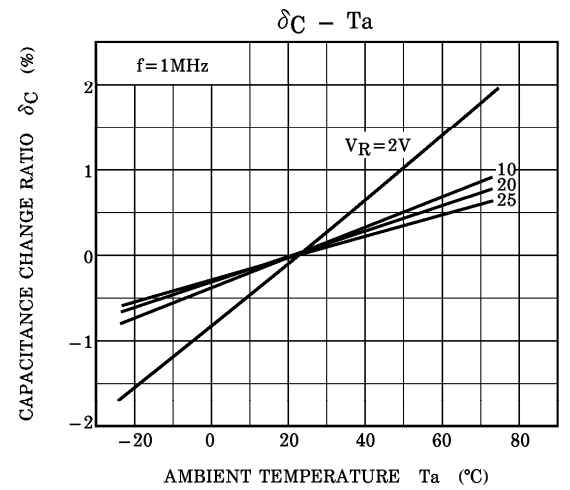
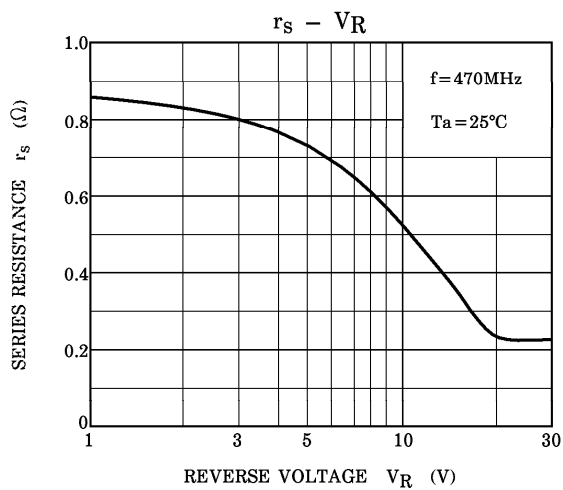
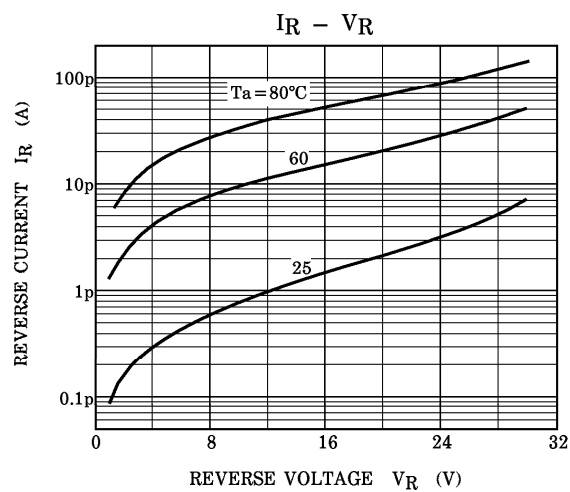
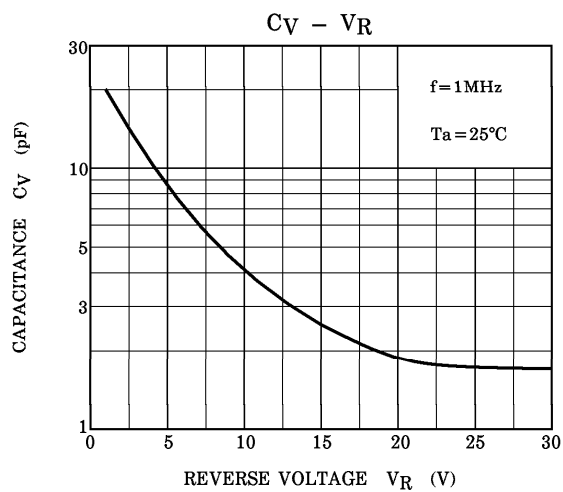
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reverse Voltage	V_R	$I_R = 1 \mu A$	30	—	—	V
Reverse Current	I_R	$V_R = 28V$	—	—	10	nA
Capacitance	C_{2V}	$V_R = 2V, f = 1MHz$	14.5	—	16.1	pF
Capacitance	C_{20V}	$V_R = 20V, f = 1MHz$	1.56	—	1.86	pF
Capacitance Ratio	C_{2V} / C_{20V}	—	7.8	8.9	—	—
Series Resistance	r_s	$V_R = 5V, f = 470MHz$	—	0.73	0.9	Ω

MARKING



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

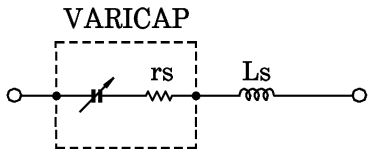
SPICE PARAMETER

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 : $V_R = 2 \sim 20$ V

PARAMETER

$I_S = 3.775E - 15$
 $N = 1.069$
 $B_V = 30$
 $I_{BV} = 1.00E - 06$
 $R_S = 0.73$
 $CJ0 = 2.755E - 11$
 $V_J = 6.236$
 $M = 1.998$

 $L_s = 5.00E - 10$



- (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 $V_R = 5$ V and $f = 470$ MHz.
If another value is needed, please refer to $R_S - V_R$ curve in this data sheets.