

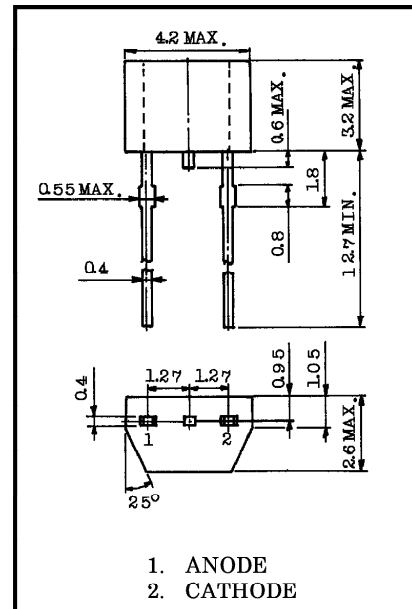
TOSHIBA VARIABLE CAPACITANCE DIODE SILICON EPITAXIAL PLANAR TYPE

# 1SV101

FM TUNER APPLICATIONS.

Unit in mm

- High Capacitance Ratio :  $C_{3V} / C_{9V} = 2.0 \sim 2.7$
- Low Series Resistance :  $r_s = 0.3 \Omega$  (Typ.)
- Small Package.
- Low Tuning Voltage Range : 3V-9V



JEDEC	—
EIAJ	—
TOSHIBA	1-4E1A

Weight : 0.9g

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 CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reverse Voltage	$V_R$	$I_R = 10 \mu A$	15	—	—	V
Reverse Current	$I_R$	$V_R = 15V$	—	—	10	nA
Capacitance	$C_{3V}$	$V_R = 3V, f = 1MHz$	28	—	32	pF
Capacitance	$C_{9V}$	$V_R = 9V, f = 1MHz$	12	—	14	pF
Capacitance Ratio	$C_{3V} / C_{9V}$	—	2.0	—	2.7	
Series Resistance	$r_s$	$C = 30pF, f = 50MHz$	—	0.3	0.5	$\Omega$

Note: Units are compounded in one package and are matched to 3%.

$$\frac{C(\text{Max.}) - C(\text{Min.})}{C(\text{Min.})} \leq 0.03 \quad (V_R = 3V-9V)$$

and capacitance is classified as Table 1.

961001EAA2

● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

● The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.

● The information contained herein is subject to change without notice.

Table 1 : Address classification of capacitance  
 TEST CONDITION : f = 1MHz, Ta = 25°C

Unit : pF

No.	C <sub>3V</sub>	C <sub>5V</sub>	C <sub>7V</sub>	C <sub>9V</sub>
1	28.20~29.04	20.50~21.11	15.65~16.11	12.066~12.427
2	28.85~29.71	20.97~21.59	16.01~16.49	12.343~12.713
3	29.51~30.39	21.44~22.08	16.38~16.87	12.627~13.005
4	30.19~31.09	21.94~22.59	16.76~17.26	12.917~13.304
5	30.89~31.81	22.45~23.12	17.15~17.66	13.214~13.610
6		22.97~23.65	17.54~18.06	13.518~13.923
7		23.49~24.19	17.94~18.47	

- (1) The capacitance value of address classification is shown with confidence to at least ±0.5% accuracy.
- (2) The address is specified in the compounded package (or label).

Example      4 - 3 - 2 - 1  
 (C<sub>3V</sub>) (C<sub>5V</sub>) (C<sub>7V</sub>) (C<sub>9V</sub>)

