

TOSHIBA VARIABLE CAPACITANCE DIODE SILICON EPITAXIAL PLANAR TYPE

**1SV102**

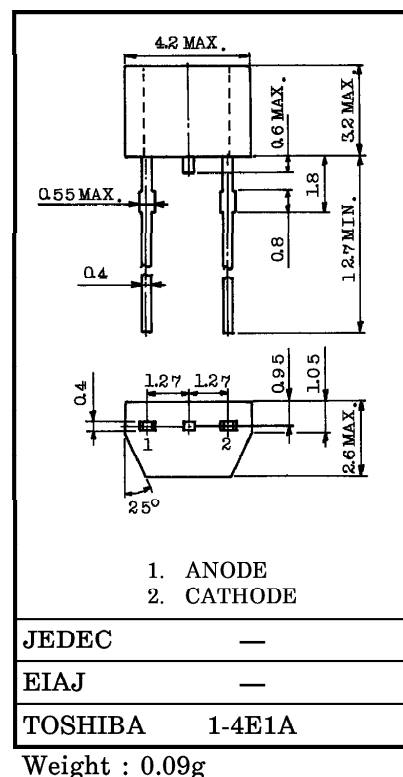
AM RADIO BAND TUNING APPLICATIONS.

Unit in mm

- High Capacitance Ratio :  $C_{2V}/C_{25V}=23$  (Typ.)
- High Q :  $Q=400$  (Typ.)
- Small Package.

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Reverse Voltage	$V_R$	30	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	$V_R$	$I_R = 10\mu\text{A}$	30	—	—	V
Reverse Current	$I_R$	$V_R = 30\text{V}$	—	—	50	nA
Capacitance	$C_{2V}$	$V_R = 2\text{V}, f = 1\text{MHz}$	360	—	460	pF
Capacitance	$C_{25V}$	$V_R = 25\text{V}, f = 1\text{MHz}$	15	—	21	pF
Capacitance Ratio	$C_{2V}/C_{25V}$	—	20	23	—	
Figure of Merit	Q	$V_R = 2\text{V}, f = 1\text{MHz}$	200	400	—	

Note: Available in matched group for capacitance to 3.0%.

$$\frac{C(\text{Max.}) - C(\text{Min.})}{C(\text{Min.})} \leq 0.03 \quad (V_R = 2\text{V}-25\text{V})$$

and capacitance is classified as Table 1.

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Table 1 : Capacitance Data  
 TEST CONDITION : f = 1MHz, Ta = 25°C

Unit : pF

No.	C <sub>2V</sub>	C <sub>10V</sub>	C <sub>20V</sub>	C <sub>25V</sub>
1	363.9~374.8	75.67~77.93	17.41~17.93	15.34~15.80
2	372.9~384.0	77.53~79.85	17.83~18.36	15.72~16.19
3	382.0~393.4	79.45~81.83	18.26~18.80	16.10~16.58
4	391.4~403.1	81.42~83.86	18.70~19.26	16.48~16.97
5	401.1~413.1	83.44~85.94	19.16~19.73	16.87~17.37
6	411.0~423.3	85.50~88.06	19.63~20.21	17.27~17.78
7	421.1~433.7	87.61~90.23	20.10~20.70	17.68~18.21
8	431.5~444.4	89.77~92.46	20.58~21.19	18.11~18.65
9	442.0~455.2	91.98~94.73	21.07~21.70	18.55~19.10
10		94.25~97.07	21.58~22.22	19.00~19.57
11		96.57~99.46	22.10~22.76	19.47~20.05
12		98.96~101.92	22.64~23.31	19.95~20.54
13		101.40~104.44	23.19~23.88	
14		103.92~107.03	23.76~24.47	
15		106.49~109.68	24.33~25.05	
16		109.12~112.39	24.91~25.65	
17		111.82~115.17	25.51~26.27	
18		114.59~118.02	26.13~26.91	
19			26.77~27.57	

- (1) This table is not selection guide, which means only to show the data.  
 (2) The number on the vinyl package (on the label in the vinyl package) is to show the capacitance data at each voltage in a matched group.

EXAMPLE: 4 - 3 - 2 - 1  
 (C<sub>2V</sub>) (C<sub>10V</sub>) (C<sub>20V</sub>) (C<sub>25V</sub>)

- (3) The absolute capacitance value is in  $\pm 0.5\%$

