

TOSHIBA

1SV149

TOSHIBA VARIABLE CAPACITANCE DIODE SILICON EPITAXIAL PLANAR TYPE

1SV149

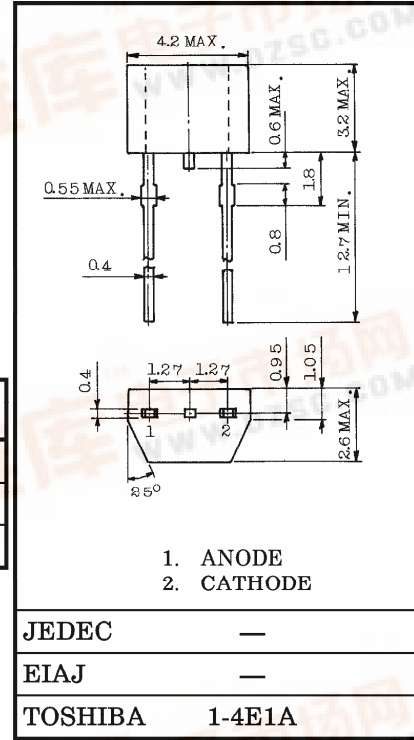
AM RADIO BAND TUNING APPLICATIONS.

Unit in mm

- High Capacitance Ratio : $C_{1V} / C_{8V} = 15$ (Min.)
- High Q : $Q = 200$ (Min.)
- Small Package
- Low Voltage Operation : 1V-8V

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Reverse Voltage	V_R	15	V
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55~125	$^\circ\text{C}$



ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

Weight : 0.09g

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reverse Voltage	V_R	$I_R = 10\mu\text{A}$	15	—	—	V
Reverse Current	I_R	$V_R = 15\text{V}$	—	—	50	nA
Capacitance	C_{1V}	$V_R = 1\text{V}, f = 1\text{MHz}$	435	—	540	pF
Capacitance	C_{8V}	$V_R = 8\text{V}, f = 1\text{MHz}$	19.9	—	30.0	pF
Capacitance Ratio	C_{1V} / C_{8V}	—	15.0	19.5	—	—
Figure of Merit	Q	$V_R = 1\text{V}, f = 1\text{MHz}$	200	—	—	—

Note : Available in matched group for capacitance to 2.5%.

$$\frac{C(\text{Max.}) - C(\text{Min.})}{C(\text{Min.})} \leq 0.025 \quad (V_R = 1\text{V} \sim 8\text{V})$$

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 _{1V}	C _{3V}	C _{5V}	C _{8V}
1	438.0 ~ 448.9	140.00 ~ 143.51	55.00 ~ 56.37	20.00 ~ 20.50
2	446.7 ~ 457.9	142.81 ~ 146.38	56.09 ~ 57.49	20.40 ~ 20.91
3	455.7 ~ 467.0	145.66 ~ 149.31	57.21 ~ 58.64	20.81 ~ 21.33
4	464.8 ~ 476.3	148.57 ~ 152.29	58.36 ~ 59.81	21.23 ~ 21.76
5	474.1 ~ 485.9	151.55 ~ 155.34	59.53 ~ 61.01	21.66 ~ 22.19
6	483.5 ~ 495.6	154.58 ~ 158.45	60.71 ~ 62.23	22.09 ~ 22.63
7	493.2 ~ 505.5	157.67 ~ 161.6	61.93 ~ 63.47	22.53 ~ 23.08
8	503.1 ~ 515.6	160.8 ~ 164.8	63.17 ~ 64.75	22.98 ~ 23.54
9	513.2 ~ 526.0	164.0 ~ 168.1	64.43 ~ 66.04	23.44 ~ 24.01
10	523.4 ~ 536.5	167.3 ~ 171.5	65.72 ~ 67.36	23.91 ~ 24.50
11		170.7 ~ 174.9	67.04 ~ 68.71	24.38 ~ 24.99
12		174.1 ~ 178.4	68.37 ~ 70.08	24.87 ~ 25.49
13		177.6 ~ 182.0	69.74 ~ 71.48	25.37 ~ 26.00
14		181.2 ~ 185.6	71.14 ~ 72.92	25.88 ~ 26.52
15		184.8 ~ 189.3	72.56 ~ 74.37	26.40 ~ 27.05
16		188.5 ~ 193.1	74.01 ~ 75.85	26.93 ~ 27.59
17		192.3 ~ 197.0	75.49 ~ 77.37	27.47 ~ 28.15
18		196.2 ~ 201.0	76.99 ~ 78.91	28.01 ~ 28.71
19		200.0 ~ 205.0	78.53 ~ 80.49	28.57 ~ 29.28
20		204.0 ~ 209.1	80.09 ~ 82.10	29.14 ~ 29.86
21		208.1 ~ 213.3	81.70 ~ 83.74	
22		212.3 ~ 217.6	83.34 ~ 85.42	
23		216.6 ~ 221.9	85.00 ~ 87.12	
24		220.9 ~ 226.3	86.70 ~ 88.87	
25		225.3 ~ 230.8	88.43 ~ 90.64	
26		229.8 ~ 235.4	90.20 ~ 92.46	
27		234.4 ~ 240.1	92.00 ~ 94.30	
28		239.1 ~ 245.0	93.84 ~ 96.18	
29		243.8 ~ 249.9	95.72 ~ 98.11	
30			97.63 ~ 100.07	
31			99.59 ~ 102.08	
32			101.58 ~ 104.12	

- (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_{1V}) (C_{3V}) (C_{5V}) (C_{8V})
- (3) The absolute capacitance value is in ±0.5%.
- (4) C_{8V} Classification
 A : Address No.1~7
 B : Address No.8~14
 C : Address No.14~20

