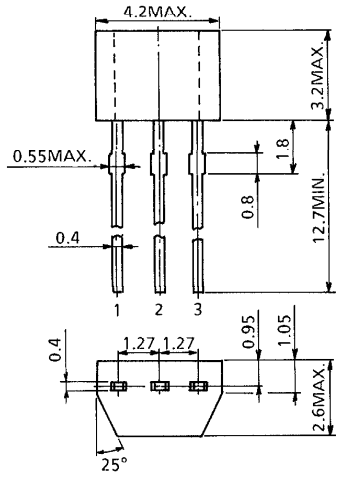
TOSHIBA VARIABLE CAPACITANCE DIODE SILICON EPITAXIAL PLANAR TYPE

1SV147

FM RADIO BAND TUNING APPLICATIONS

Unit in mm

- Low r_s : r_s = 0.3 Ω (Typ.)
- Small Package



1. ANODE 1
2. CATHODE 1, 2
3. ANODE 2

JEDEC	—
EIAJ	—
TOSHIBA	1-4E2A

Weight : 0.13 g

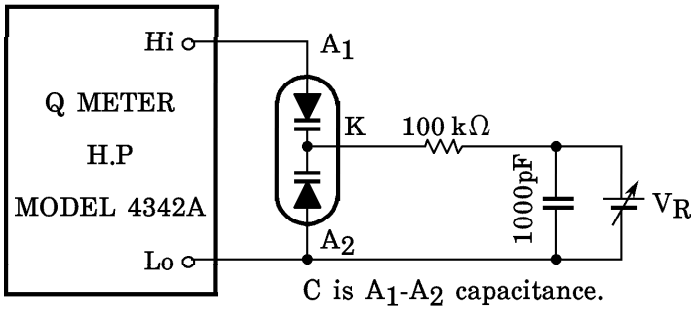
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Reverse Voltage	V_R	15	V
Junction Temperature	T_j	125	°C
Storage Temperature	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 μA	15	—	—	V
Reverse Current	I_R	V_R = 15 V	—	—	50	nA
Capacitance	C_{3V}	V_R = 3 V, f = 1 MHz	28.5	—	32.5	pF
Capacitance	C_{8V}	V_R = 8 V, f = 1 MHz	11.7	—	13.7	pF
Capacitance Ratio	C_{3V}/C_{8V}	—	2.1	—	2.6	—
Series Resistance	r_s	C = 30 pF, f = 50 MHz (Note)	—	0.3	0.5	Ω

(Note) : r_s test circuit



C is A_1-A_2 capacitance.

000707EAA2

Table 1: Capacitance Data

TEST CONDITION (f = 1 MHz, Ta = 25°C)

No.	C_{2V}	C_{3V}	C_{6V}	C_{8V}
1	34.70 ~ 35.74	28.60 ~ 29.45	16.80 ~ 17.30	11.72 ~ 12.07
2	35.56 ~ 36.62	29.31 ~ 30.18	17.21 ~ 17.72	12.01 ~ 12.37
3	36.44 ~ 37.53	30.03 ~ 30.93	17.63 ~ 18.15	12.31 ~ 12.67
4	37.35 ~ 38.47	30.77 ~ 31.69	18.06 ~ 18.60	12.61 ~ 12.98
5	38.27 ~ 39.41	31.53 ~ 32.47	18.50 ~ 19.05	12.92 ~ 13.30
6			18.95 ~ 19.51	13.23 ~ 13.62

(1) Available in matched group for capacitance to 3.0%.

$$\frac{C_{(Max.)} - C_{(Min.)}}{C_{(Min.)}} \leqq 0.03 \, (V_R = 2 \sim 8 \, V)$$

and capacitance is classified as Table 1.

(2) C_{2V}, C_{3V}, C_{6V} and C_{8V} are A_1-A_2 capacitance.

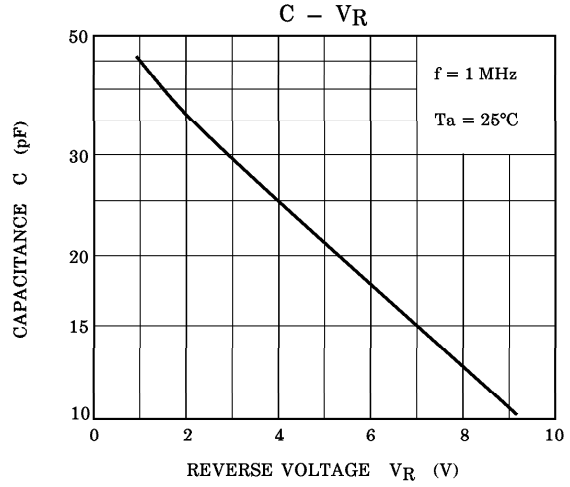
(3) This table is not selection guide, which means only to show the data.

(4) The number on the vinyl package (on the lable in the vinyl package) is to show the capacitance data at each voltage in a matched group.

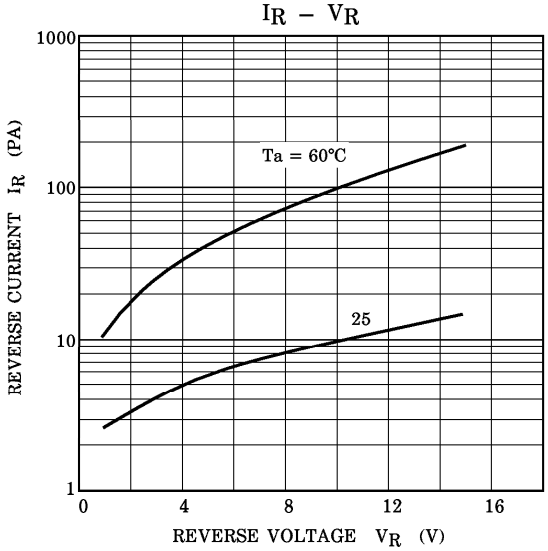
EXAMPLE: 5 – 4 – 3 – 2
(C_{2V}) (C_{3V}) (C_{6V}) (C_{8V})

(5) The absolute capacitance value is in ±0.5%.

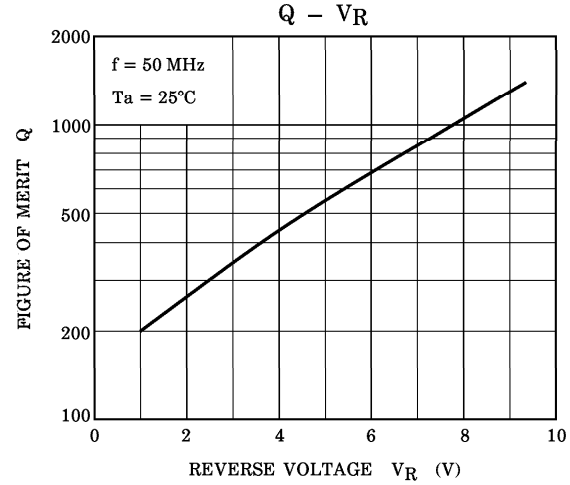
C – V_R



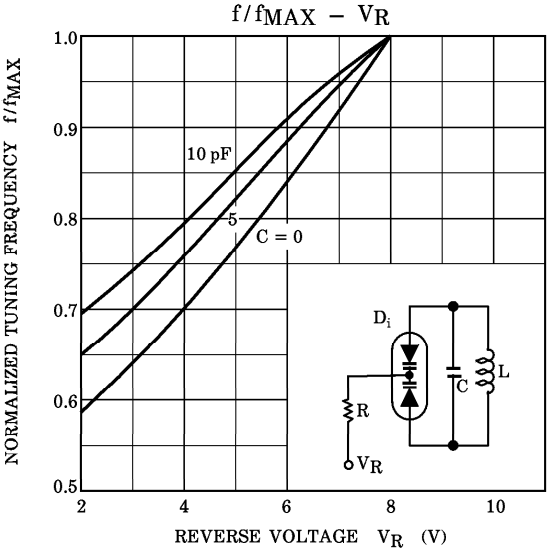
I_R – V_R



Q – V_R



f/f_{MAX} – V_R



δC (Temp.) / C (25) – Ta