

TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

HN1V02H

AM Radio Band Tuning Applications

Unit: mm

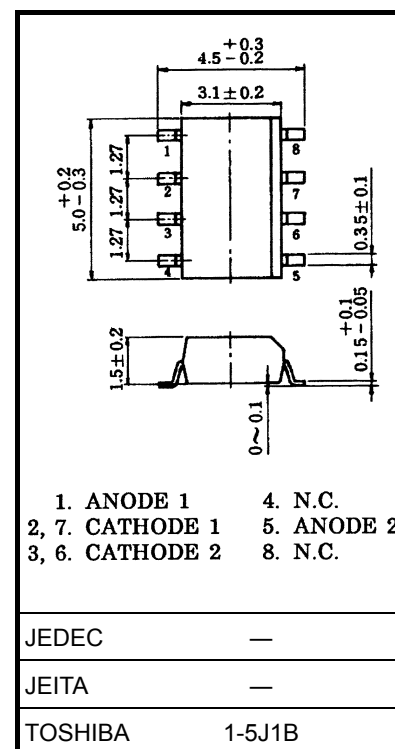
- High capacitance ratio: $C1\text{ V}/C8\text{ V} = 19.5$ (typ.)
- High Q: $Q = 200$ (min)
- Including two devices in FM8 package (flat pack mini 8 pin)
- Low voltage operation: $V_R = 1\sim 8\text{ V}$

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$) (D_1, D_2)

Characteristics	Symbol	Rating	Unit
Reverse voltage	V_R	16	V
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature range	T_{stg}	$-55\sim 125$	$^\circ\text{C}$

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).



Weight: 0.05 g (typ.)

Electrical Characteristics ($T_a = 25^\circ\text{C}$) (D_1, D_2)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Reverse voltage	V_R	$I_R = 10\text{ }\mu\text{A}$	16	—	—	V
Reverse current	I_R	$V_R = 16\text{ V}$	—	—	20	nA
Capacitance	$C1\text{ V}$	$V_R = 1\text{ V}, f = 1\text{ MHz}$	435	—	540	pF
Capacitance	$C3\text{ V}$	$V_R = 3\text{ V}, f = 1\text{ MHz}$	140	—	250	pF
Capacitance	$C5\text{ V}$	$V_R = 5\text{ V}, f = 1\text{ MHz}$	50.0	—	90.0	pF
Capacitance	$C8\text{ V}$	$V_R = 8\text{ V}, f = 1\text{ MHz}$	19.9	—	26.7	pF
Capacitance ratio	$C1\text{ V}/C8\text{ V}$	—	16.2	19.5	—	—
Figure of merit	Q	$V_R = 1\text{ V}, f = 1\text{ MHz}$	200	—	—	—

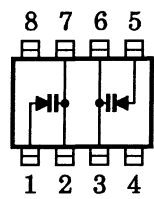
Note 1: Two devices in one package are matched for capacitance to 2.5%.

$$\frac{C(\text{max}) - C(\text{min})}{C(\text{min})} \leq 0.025 \quad (V_R = 1\sim 8\text{ V})$$

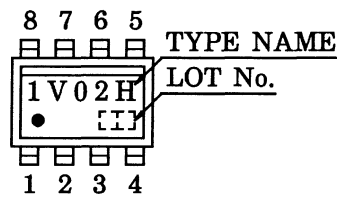
Note 2: $C8\text{ V}$ is divided into two classifications as follows.

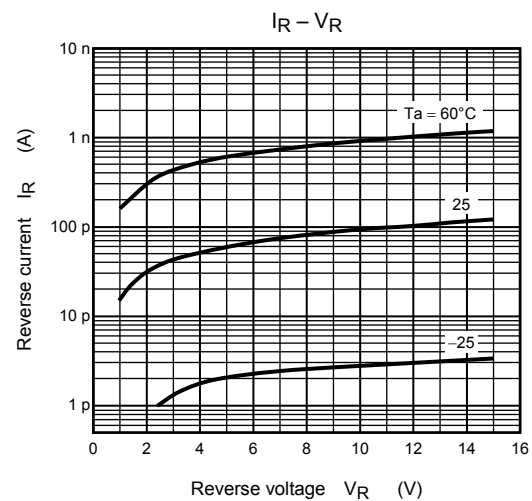
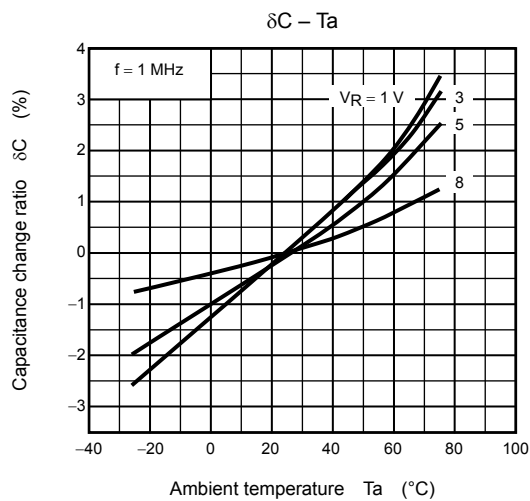
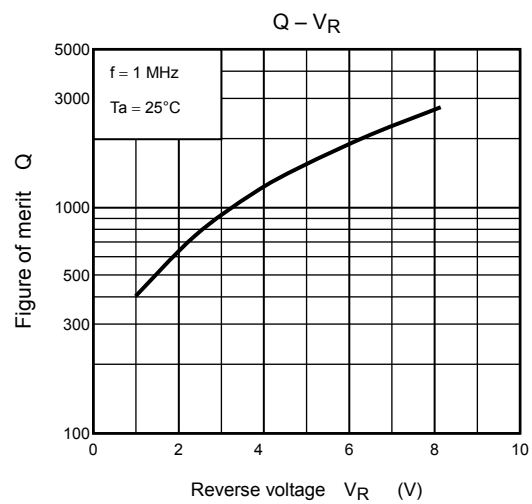
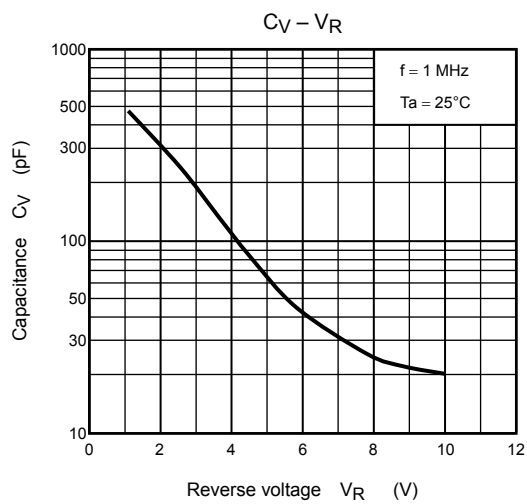
Classification	$C8\text{ V}$ (pF)
A	19.9~23.7
B	22.4~26.7

Pin Assignment (top view)



Marking





Note 3: $\delta C = \frac{C(T_a) - C(25)}{C(25)} \times 100 \text{ (%)}$

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