TOSHIBA Variable Capacitance Diode Silicon Epitaxial Planar Type

1SV228

Electronic Tuning Applications of FM Receivers

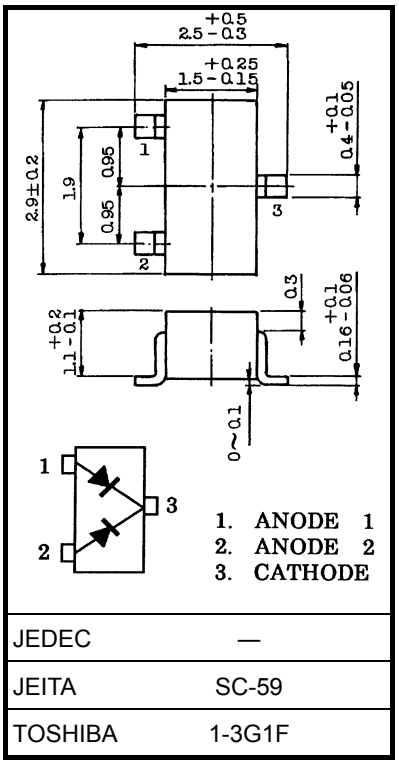
- Low r_S: r_S = 0.3 Ω (typ.)
- Small package

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Reverse voltage	V_R	15	V
Junction temperature	T_j	125	°C
Storage temperature	T_{stg}	−55~125	°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).

Unit: mm



JEDEC	—
JEITA	SC-59
TOSHIBA	1-3G1F

Weight: 0.013 g (typ.)

Electrical Characteristics (Ta = 25°C)

Characteristics	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		—	—	10	nA
Capacitance	$C_{3\ V}$	V_R = 3 V, f = 1 MHz	(Note 1)	28.5	30.5	32.5	pF
Capacitance	$C_{8\ V}$	V_R = 8 V, f = 1 MHz	(Note 1)	11.7	12.7	13.7	pF
Capacitance ratio	$C_{3\ V}/C_{8\ V}$	—	(Note 1)	2.1	—	2.6	—
Series resistance	r_s	V_R = 3 V, f = 100 MHz	(Note 1)	—	0.3	0.5	Ω

Note 1: Characteristics between anode 1 and anode 2

Marking

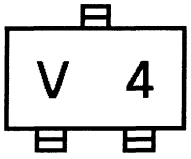


Table 1 Address Classification of Capacitance
Test Condition: f = 1 MHz, Ta = 25°C

No.	$C_{2\,V}$	$C_{3\,V}$	$C_{6\,V}$	$C_{8\,V}$
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

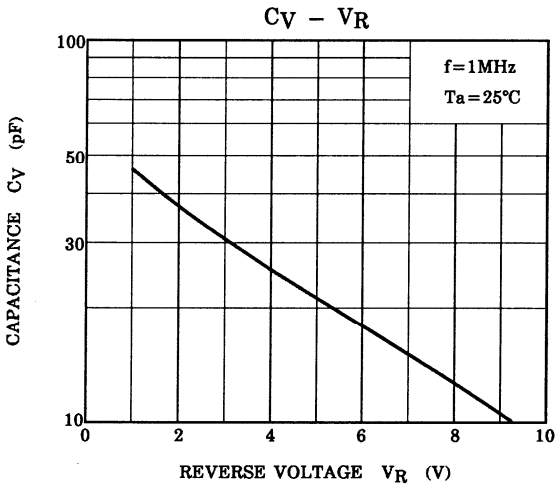
(1) Units are compounded in one package and are matched to 3%.

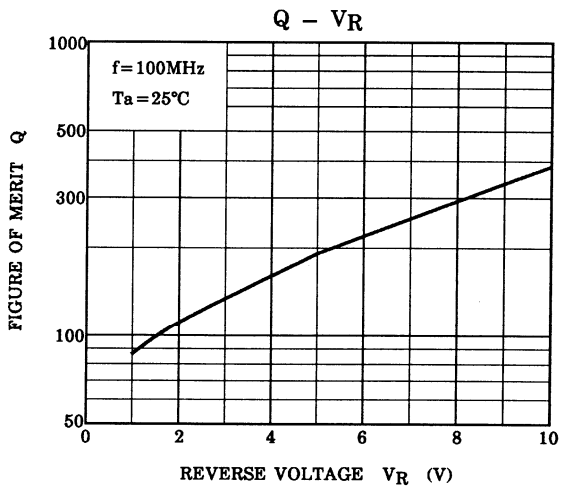
$$\frac{C\ (max) - C\ (min)}{C\ (min)} \leqq 0.03\ (V_R = 2\sim8\ V)$$

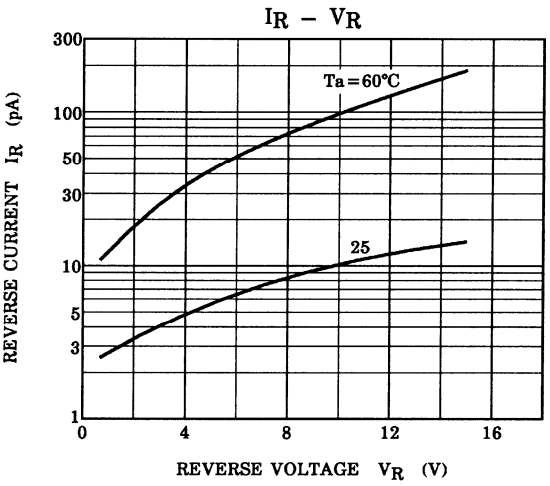
and capacitance is classified as Table 1.

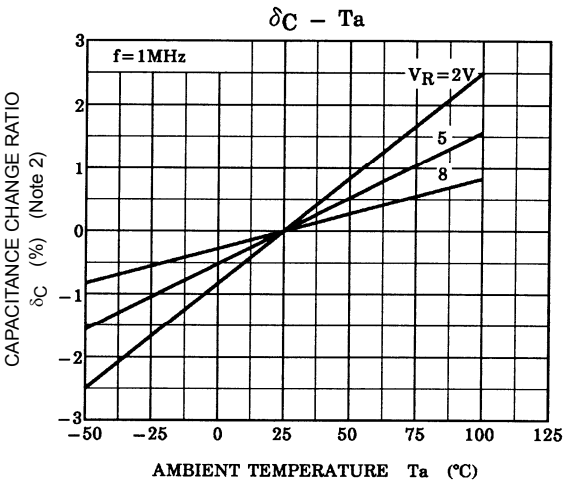
(2) $C_{2\,V}$, $C_{3\,V}$, $C_{6\,V}$, $C_{8\,V}$ are A1-A2 capacitance.

(3) The tolerance of address is ±1 address.









Note 2: $\delta_C = \dfrac{C\ (Ta) - C\ (25)}{C\ (25)} \times 100\ \ (\%)$

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