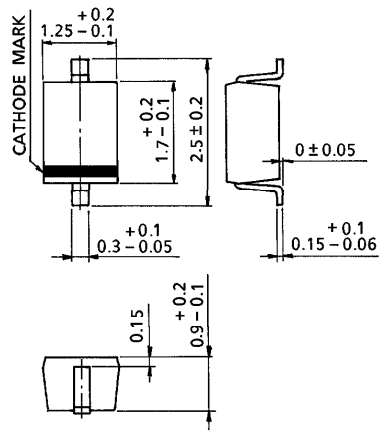
TOSHIBA VARIABLE CAPACITANCE DIODE SILICON EPITAXIAL PLANAR TYPE

1SV262

CATV TUNING

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	1-1E1A

Weight : 0.004g

- High Capacitance Ratio : C2V / C25V = 12.5 (Typ.)
- Low Series Resistance : rs = 0.6Ω (Typ.)
- Excellent C-V Characteristics, and Small Tracking Error.
- Small Package

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Reverse Voltage	V_R	34	V
Peak Reverse Voltage	V_{RM}	36 (R_L = 10kΩ)	V
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reverse Voltage	V_R	I_R = 1μA	34	—	—	V
Reverse Current	I_R	V_R = 32V	—	—	10	nA
Capacitance	C2V	V_R = 2V, f = 1MHz	33	35.5	38	pF
Capacitance	C25V	V_R = 25V, f = 1MHz	2.6	2.85	3.0	pF
Capacitance Ratio	C2V / C25V	—	12.0	12.5	—	—
Capacitance Ratio	C25V / C28V	—	1.03	—	—	—
Series Resistance	r_s	V_R = 5V, f = 470MHz	—	0.6	0.8	Ω

(Note 1) : Available in matched group for capacitance to 2.0%.

$$\frac{C\,(Max.) - C\,(Min.)}{C\,(Min.)} \leqq 0.02 \quad (VR = 2 \sim 25V)$$

MARKING

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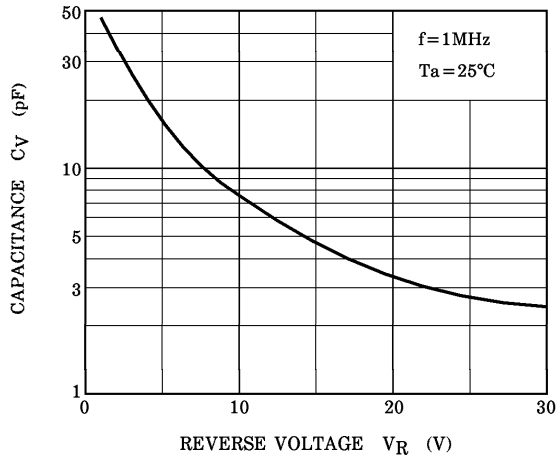
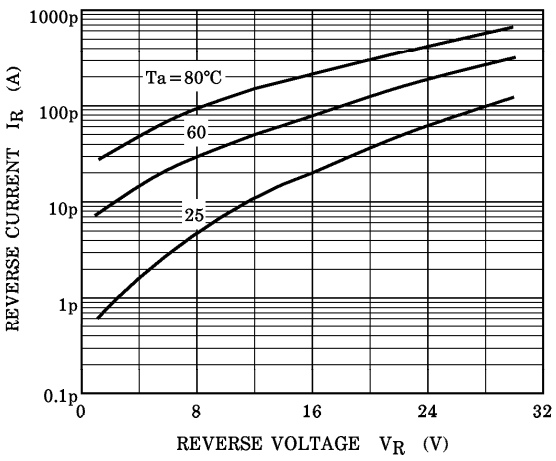
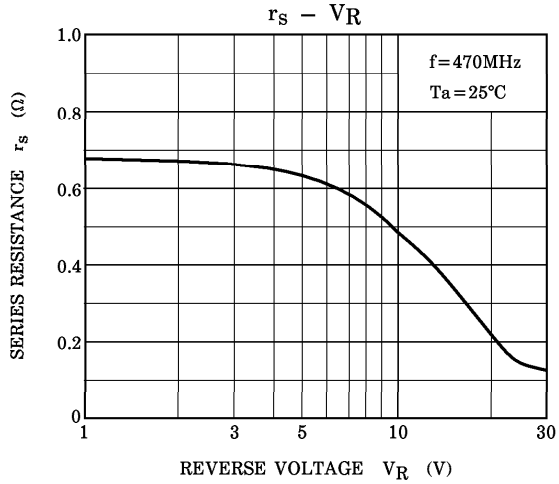
$C_V - V_R$



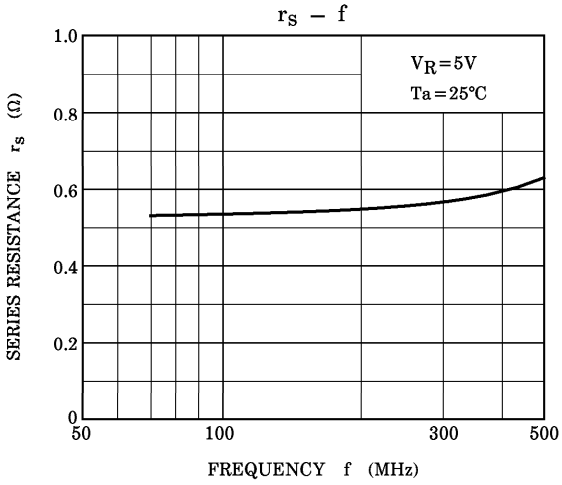
$I_R - V_R$



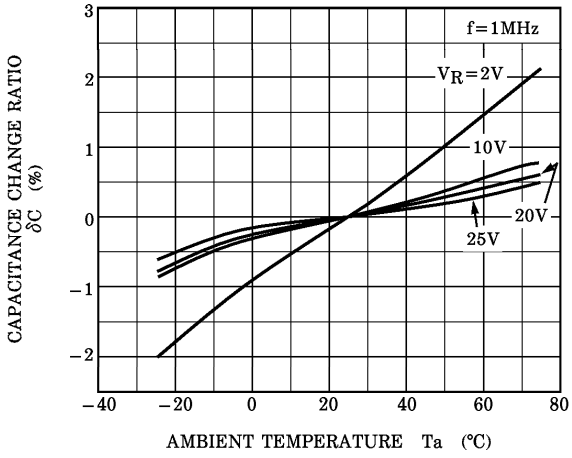
$r_S - V_R$



$r_S - f$



$\delta C - Ta$



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SPICE PARAMETER

SPICE MODEL : BERKLEY SPICE.2G.6 DIODE MODEL

DATA FORMAT : MODEL FORMAT

SPICE SYMBOL : I_S (A), R_S (Ω), N (−), CJ0 (F), V_J (V), M (−), B_V (V), I_{BV} (A)

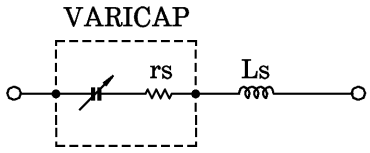
FREQUENCY RANGE : f = 0.1~3 GHz

REVERSE VOLTAGE RANGE : V_R = 2~25 V

AMBIENT TEMPERATURE : Ta = 27°C

PARAMETER

I_S	=	6.356E − 15
N	=	1.058
B_V	=	34
I_{BV}	=	1.00E − 04
R_S	=	0.6
CJ0	=	8.577E − 11
V_J	=	2.208
M	=	1.396
Ls	=	1.00E − 09



(Note 1) : These parameters from I_S to M mean die characteristic.
Actually device has lead inductance so Ls is necessary for simulation.
And please use default value except above parameters.

(Note 2) : R_S shows the value at the condition of V_R = 5 V and f = 470 MHz.
If another value is needed, please refer to R_S – V_R curve in this data sheets.