TOSHIBA VARIABLE CAPACITANCE DIODE   SILICON EPITAXIAL PLANAR TYPE

1SV282

CATV TUNING

Unit in mm

- High Capacitance Ratio : $C_{2V}/C_{25V} = 12.5$ (TYP.)

- Low Series Resistance   : $r_S = 0.6\Omega$ (TYP.)

- Excellent C-V Characteristics, and Small Tracking Error.

- Useful for Small Size Tuner.

MAXIMUM RATINGS (Ta = 25°C)

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

JEDEC	—
EIAJ	—
TOSHIBA	1-1G1A
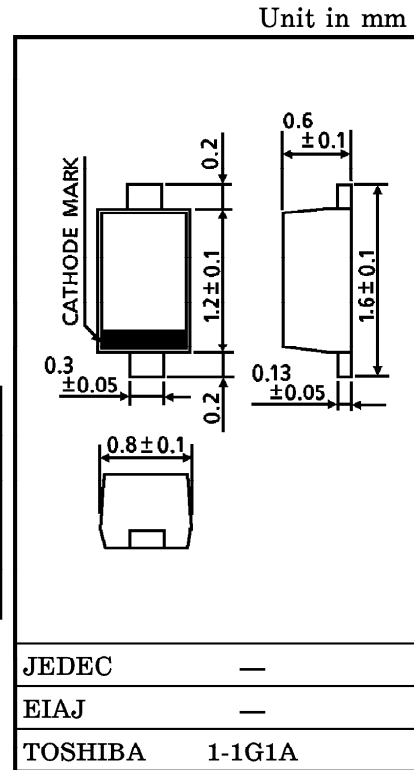
Weight : 0.0014g

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Reverse Voltage	V_R	$I_R = 1\mu A$	34	—	—	V
Reverse Current	I_R	$V_R = 32V$	—	—	10	nA
Capacitance	C_{2V}	$V_R = 2V$, f = 1MHz	33	—	38	pF
Capacitance	C_{25V}	$V_R = 25V$, f = 1MHz	2.6	—	3.0	pF
Capacitance Ratio	C_{2V}/C_{25V}	—	12.0	12.5	—	—
Capacitance Ratio	C_{25V}/C_{28V}	—	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%.

$$\frac{C\,(MAX.) - C\,(MIN.)}{C\,(MIN.)} \leqq 0.02$$
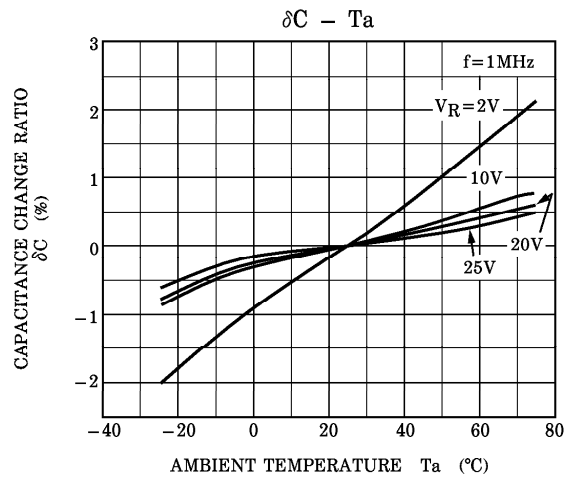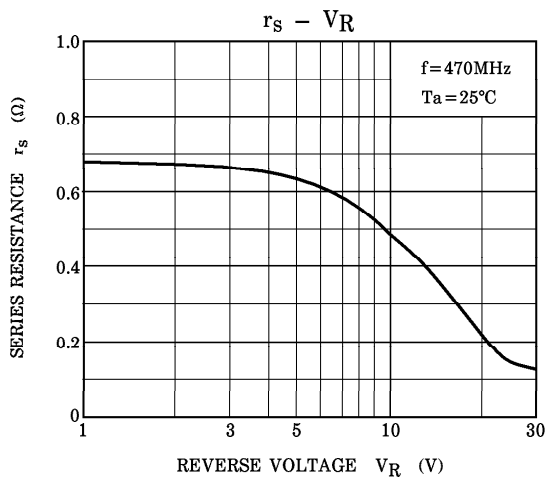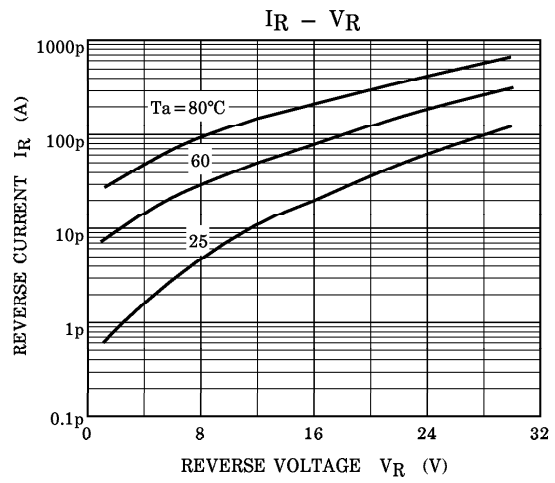
$$(V_R = 2 \sim 25V)$$

MARKING

T D

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$C_V - V_R$

f=1MHz
Ta=25℃

CAPACITANCE C_V (pF)

50
30
10
5
3
1

REVERSE VOLTAGE V_R (V)

0   10   20   30

$I_R - V_R$

Ta=80℃
60
25

REVERSE CURRENT I_R (A)

1000p
100p
10p
1p
0.1p

REVERSE VOLTAGE V_R (V)

0   8   16   24   32

$r_S - V_R$

f=470MHz
Ta=25℃

SERIES RESISTANCE r_S (Ω)

1.0
0.8
0.6
0.4
0.2
0

REVERSE VOLTAGE V_R (V)

1   3   5   10   30

$\delta C - Ta$

f=1MHz
V_R=2V
10V
20V
25V

CAPACITANCE CHANGE RATIO δC (%)

3
2
1
0
−1
−2

AMBIENT TEMPERATURE Ta (℃)

−40   −20   0   20   40   60   80

$$\text{NOTE}: \delta_C = \frac{C(Ta) - C(25)}{C(25)} \times 100$$