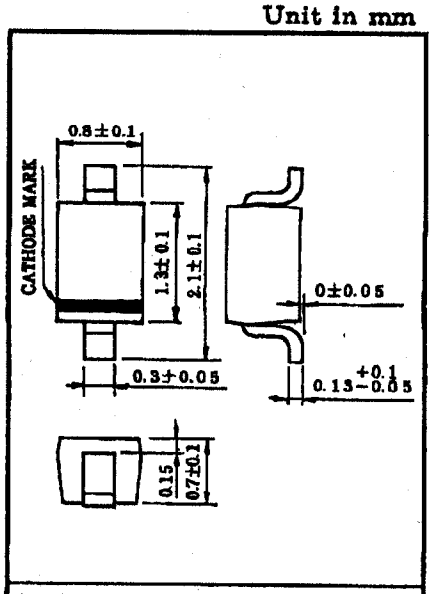
SEMICONDUCTOR
TOSHIBA
TECHNICAL DATA

TOSHIBA VARIABLE CAPACITANCE DIODE
1SV273
SILICON EPITAXIAL PLANAR TYPE

(1SV273)
VCO FOR UHF BAND RADIO

- High Capacitance Ratio : $C_{1V}/C_{4V}=2.0$ (Typ.)
- Low Series Resistance : $r_s=0.28\Omega$ (Typ.)
- Small Package

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	1-1F1A

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Reverse Voltage	V_R	10	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	$I_R=1\mu A$	10	—	—	V
Reverse Current	I_R	$V_R=10V$	—	—	3	nA
Capacitance	C_{1V}	$V_R=1V$, f=1MHz	15	16	17	pF
Capacitance	C_{4V}	$V_R=4V$, f=1MHz	7.3	8.0	8.7	pF
Capacitance Ratio	C_{1V}/C_{4V}	—	1.8	2.0	—	—
Series Resistance	r_s	$V_R=1V$, f=470MHz	—	0.28	0.5	Ω

MARKING

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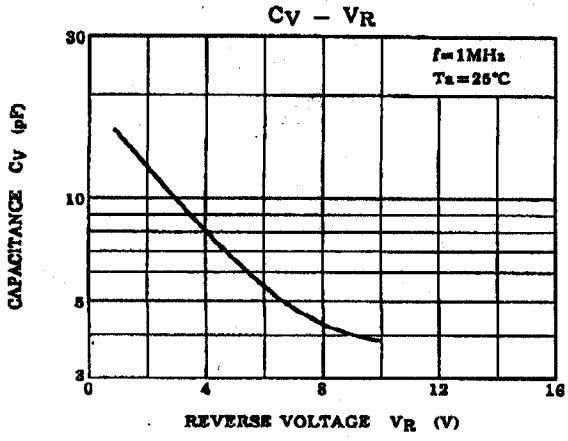
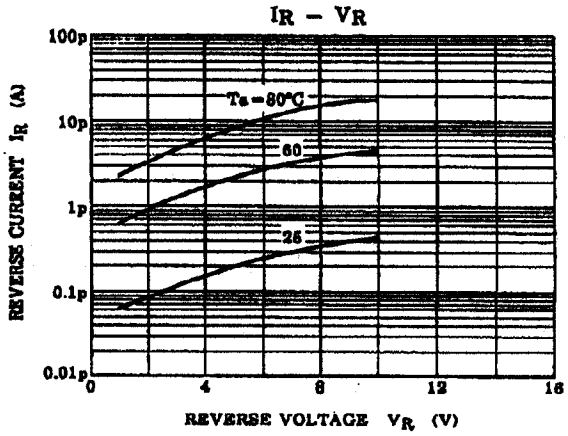
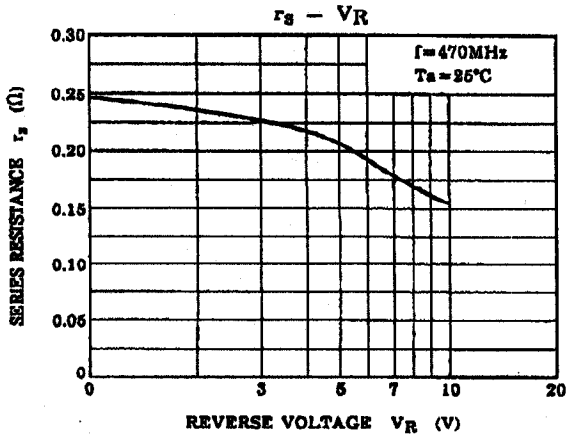
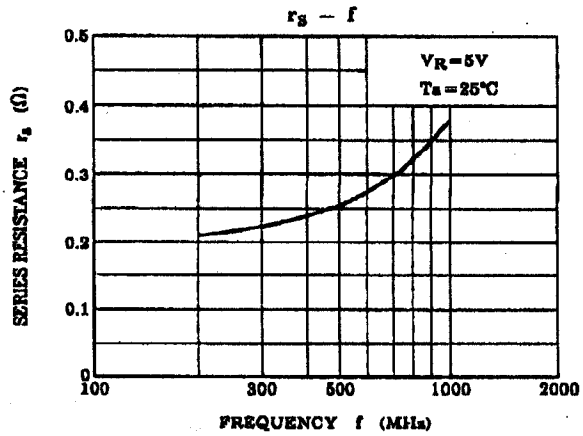
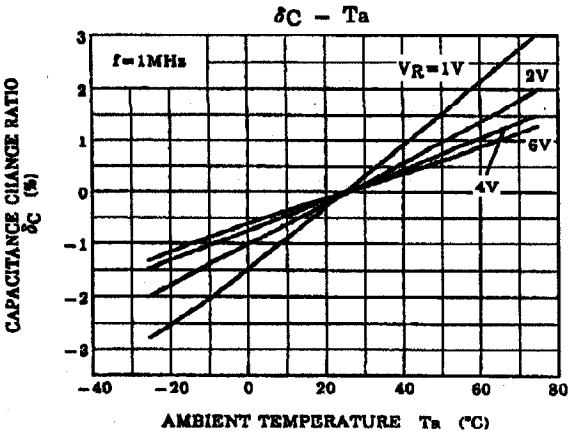
(1SV273)


Cv – VR
f=1MHz
Ta=25°C
CAPACITANCE Cv (pF)
30
10
5
3
0
4
8
12
16
REVERSE VOLTAGE VR (V)


IR – VR
Ta=80°C
60
25
REVERSE CURRENT IR (A)
100p
10p
1p
0.1p
0.01p
0
4
8
12
16
REVERSE VOLTAGE VR (V)


rs – VR
f=470MHz
Ta=25°C
SERIES RESISTANCE rs (Ω)
0.30
0.25
0.20
0.15
0.10
0.05
0
3
5
7
10
20
REVERSE VOLTAGE VR (V)


rs – f
VR=5V
Ta=25°C
SERIES RESISTANCE rs (Ω)
0.5
0.4
0.3
0.2
0.1
0
100
300
500
1000
2000
FREQUENCY f (MHz)


δC – Ta
f=1MHz
VR=1V
2V
6V
4V
CAPACITANCE CHANGE RATIO δC (%)
3
2
1
0
−1
−2
−3
−40
−20
0
20
40
60
80
AMBIENT TEMPERATURE Ta (°C)

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