HVR100
Variable Capacitance Diode for AM tuner

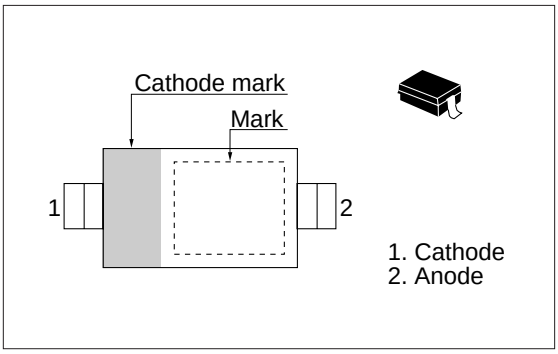
HITACHI

Rev. 4
Oct. 1995

Features

- High capacitance ratio. (n =16.0 min)
- High figure of merit. (Q =200 min)
- To be usable at low voltagee.
- Small Resin Package (SRP) is suitable for surface mount design.

Outline



Ordering Information

Type No.	Laser Mark	Package Code
HVR100	2	SRP

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Value	Unit
Reverse voltage	V_R	15	V
Junction temperature	T_j	125	°C
Storage temperature	T_{stg}	-55 to +125	°C

Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse voltage	V_R	15	—	—	V	I_R = 10 µA
Reverse current	I_R	—	—	100	nA	V_R = 9 V
Capacitance	C_1	421.5	—	524.6	pF	V_R = 1 V , f = 1 MHz
	C_3	182.0	—	275.7		V_R = 3 V , f = 1 MHz
	C_5	73.2	—	121.4		V_R = 5 V , f = 1 MHz
	C_6	42.2	—	72.2		V_R = 6 V , f = 1 MHz
	C_7	26.2	—	41.6		V_R = 7 V , f = 1 MHz
	C_8	20.4	—	28.2		V_R = 8 V , f = 1 MHz
Capacitance ratio	n	16.0	—	—	—	C_1 / C_8
Figure of merit	Q	200	—	—	—	C = 450pF , f = 1 MHz
Matching error	ΔC/C*	—	—	3.0	%	V_R = 1~8V
ESD-Capability	—	80	—	—	V	*C=200pF, Both forward and reverse direction 1 pulse.

* Failure Criterion ; I_R ≥100nA at V_R = 9V

** A set of HVR100 is of uniform C-V characteristics.
Measure max. value and min. value of capacitance at each bias point of V_R=1V through 8V.
Calculate Matching Error,

$$\Delta C/C = \frac{(Cmax-Cmin)}{Cmin} \times 100\ (\%)$$

***Each group shall uniform a multiple of 3 diodes.

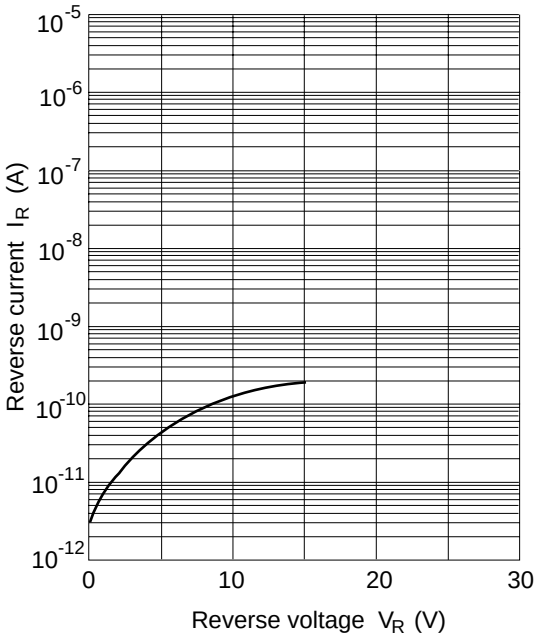


Fig.1 Reverse current Vs. Reverse voltage

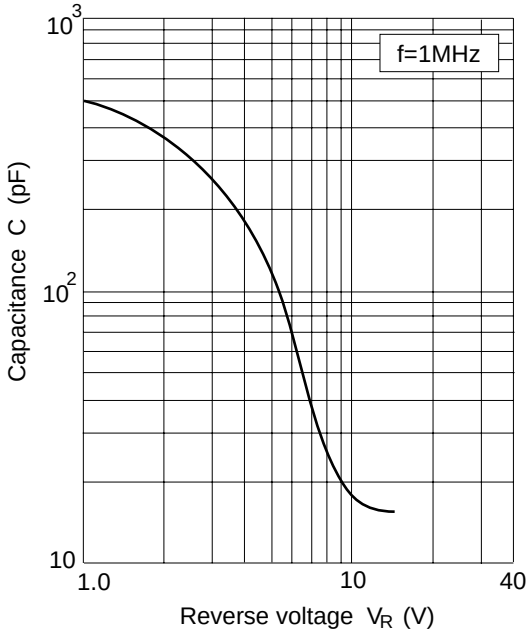
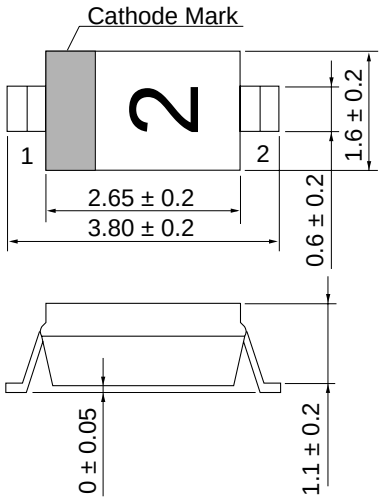


Fig.2 Capacitance Vs. Reverse voltage

Package Dimensions

Unit: mm



1 Cathode
2 Anode

HITACHI Code	SRP
JEDEC Code	—
EIAJ Code	—
Weight (g)	0.010