

# HVC300A

## Variable Capacitance Diode for VHF tuner

# HITACHI

Rev. 0  
Nov. 1995

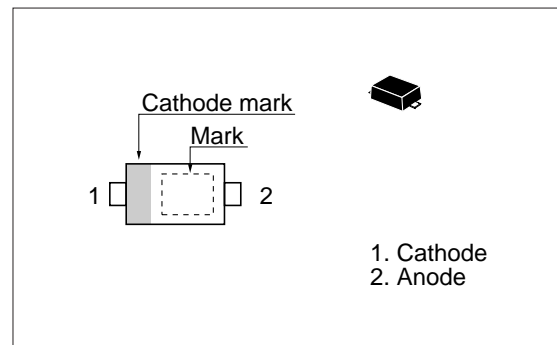
### Features

- High capacitance ratio ( $n=14.5$ min) and suitable for wide band tuner.
- Ultra small Flat Package (UFP) is suitable for surface mount design.
- Low series resistance and good C-V linearity.

### Ordering Information

Type No.	Laser Mark	Package Code
HVC300A	0	UFP

### Outline



### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

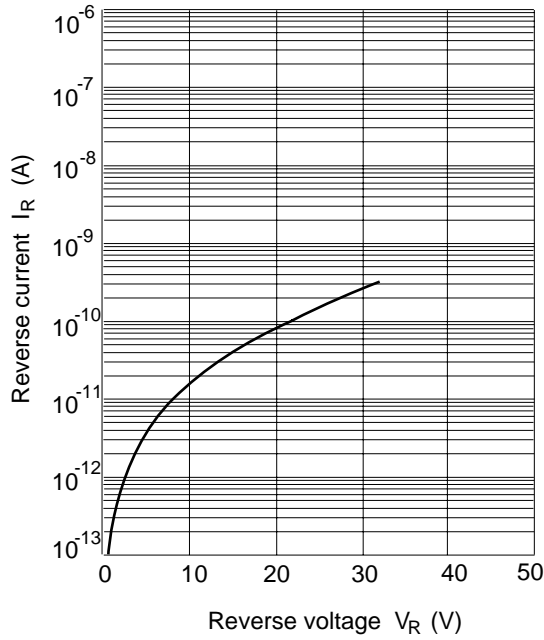
Item	Symbol	Value	Unit
Reverse voltage	$V_R$	32	V
Junction temperature	$T_j$	125	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +125	$^\circ\text{C}$

### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

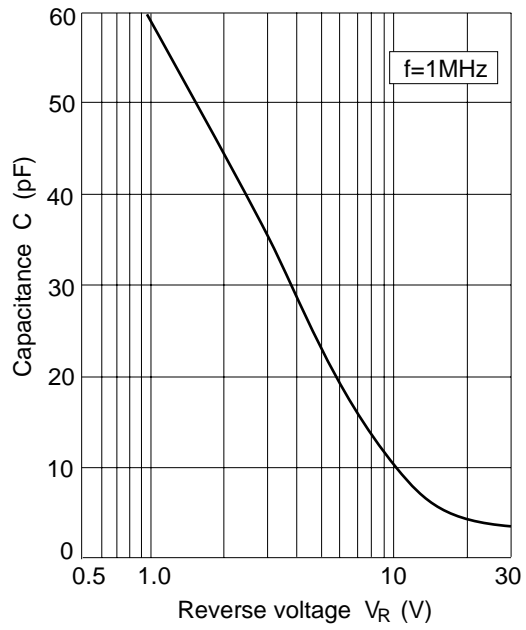
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse current	$I_{R1}$	—	—	10	nA	$V_R = 30\text{ V}$
	$I_{R2}$	—	—	100		$V_R = 30\text{ V}, T_a = 60^\circ\text{C}$
Capacitance	$C_2$	39.5	—	47.4	pF	$V_R = 2\text{ V}, f = 1\text{ MHz}$
	$C_{25}$	2.60	—	3.03		$V_R = 25\text{ V}, f = 1\text{ MHz}$
	$\Delta C/C^*$	—	—	2.0		%
Capacitance ratio	$n$	14.5	—	—	—	$C_2 / C_{25}$
Series resistance	$r_s$	—	—	1.10	$\Omega$	$V_R = 5\text{ V}, f = 470\text{ MHz}$

\* A set of HVC300A is of uniform C-V characteristics.  
Measure max. value and min. value of capacitance.  
Calculate Matching Error,  $\Delta C/C = \frac{(C_{\text{max}} - C_{\text{min}})}{C_{\text{min}}} \times 100 (\%)$

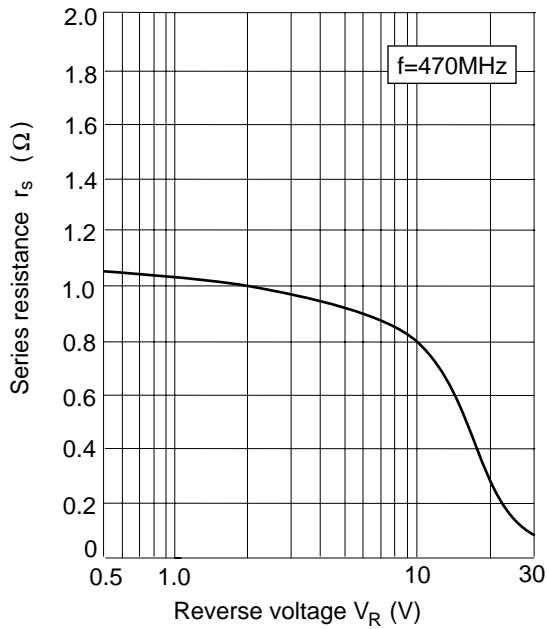
\*\* Each group shall uniform a multiple of 4 diodes.



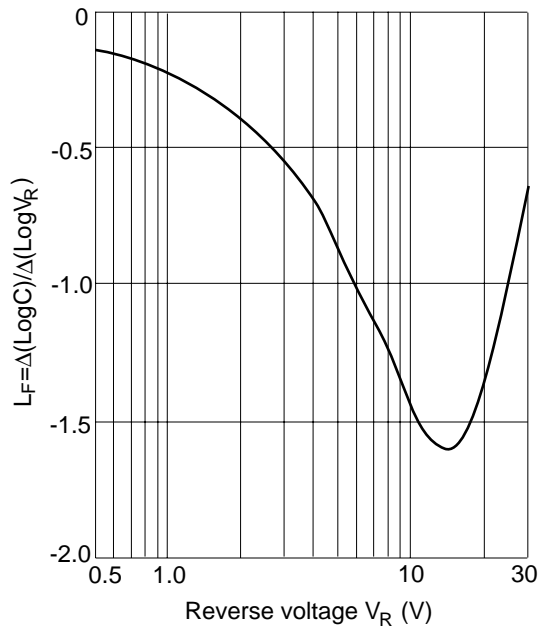
**Fig.1 Reverse current Vs. Reverse voltage**



**Fig.2 Capacitance Vs. Reverse voltage**



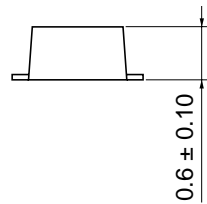
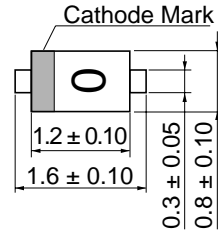
**Fig.3 Series resistance Vs. Reverse voltage**



**Fig.4 Linearity factor Vs. Reverse voltage**

Package Dimensions

Unit: mm



- 1 Cathode
- 2 Anode

HITACHI Code	UFP
JEDEC Code	—
EIAJ Code	SC-79
Weight (g)	0.0016