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# HVC300B

Variable Capacitance Diode for VHF tuner

# HITACHI

ADE-208-603 (Z)

Rev. 0  
Dec. 1998

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## Features

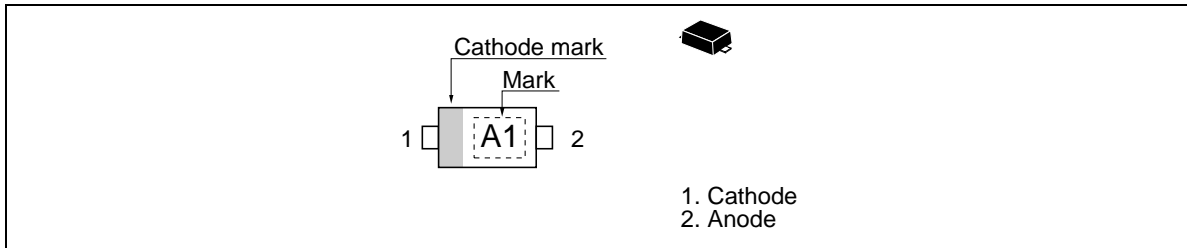
- Low matching error. ( $\Delta C/C = 2.0\%$  max)
- High capacitance ratio. ( $n = 17.0$  min)
- Low series resistance. ( $r_s = 1.1\Omega$  max)
- Ultra small Flat Package (UFP) is suitable for surface mount design.

## Ordering Information

Type No.	Laser Mark	Package Code
HVC300B	A1	UFP

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## Outline



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## HVC300B

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### Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Peak reverse voltage	$V_{RM}^{*1}$	35	V
Reverse voltage	$V_R$	34	V
Junction temperature	Tj	125	°C
Storage temperature	Tstg	-55 to +125	°C

Note 1. RL=10KΩ

### Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse current	$I_{R1}$	—	—	10	nA	$V_R = 32V$
	$I_{R2}$	—	—	100		$V_R = 32V, Ta = 60°C$
Capacitance	$C_2$	47.0	—	53.0	pF	$V_R = 2V, f = 1MHz$
	$C_{25}$	2.65	—	3.0		$V_R = 25V, f = 1MHz$
Capacitance ratio	n	17.0	—	—	—	$C_2/C_{25}$
Series resistance	$r_s$	—	—	1.1	Ω	$V_R = 5V, f = 470MHz$
Matching error	$\Delta C/C^{*1}$	—	—	2.0	%	$V_R = 2 \text{ to } 25V, f = 1 \text{ MHz}$

Note 1. C.C system (Continuous Connected taping system) enable to make any 10 pcs of  $\Delta C/C$  continuous in a reel, expect extention to another group.

Calculate Matching Error,

(Cmax-Cmin)

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

Main Characteristic

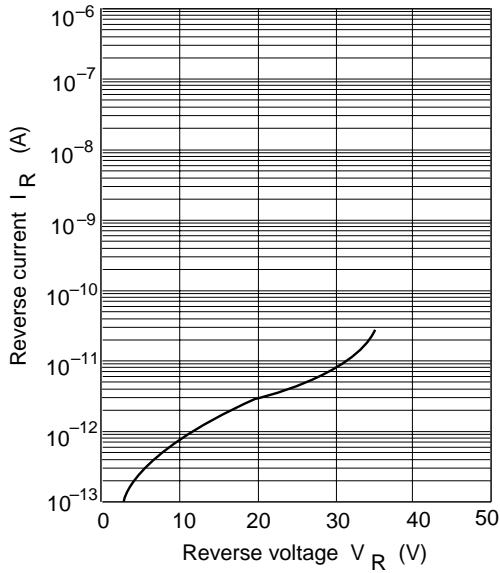


Fig.1 Reverse current Vs. Reverse voltage

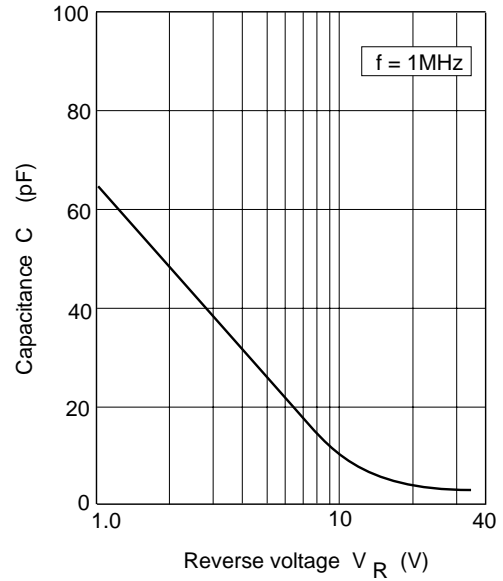


Fig.2 Capacitance Vs. Reverse voltage

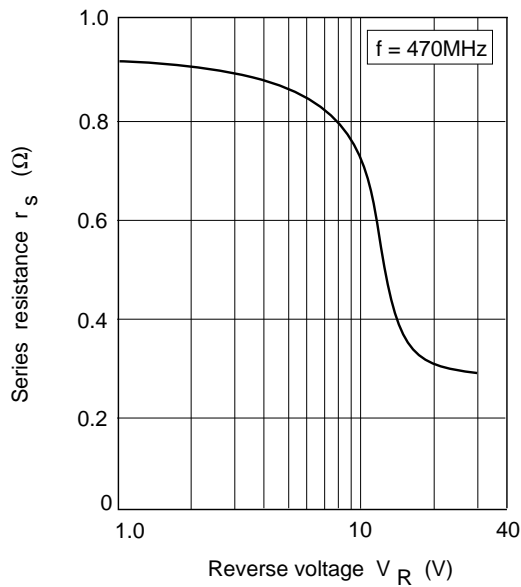


Fig.3 Series resistance Vs. Reverse voltage

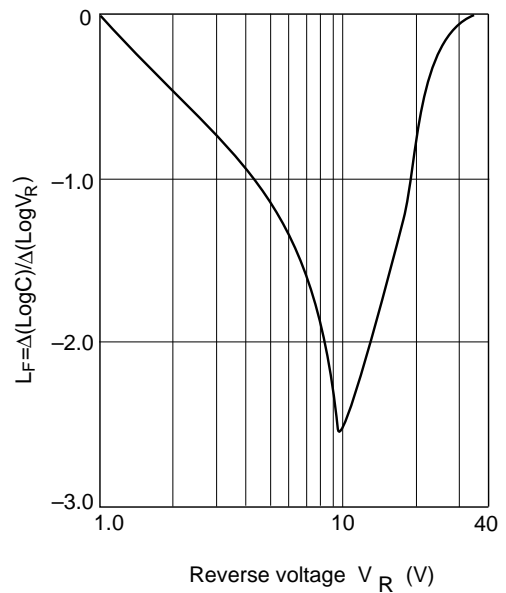
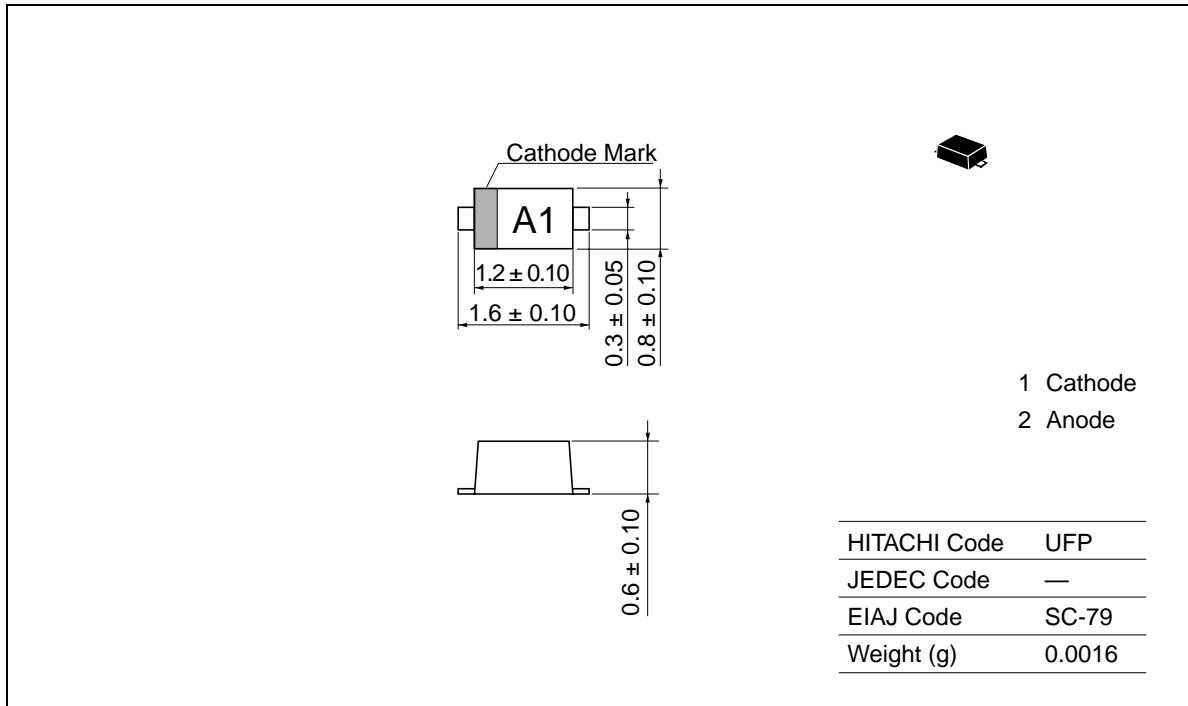


Fig.4 Linearity factor Vs. Reverse voltage

# HVC300B

## Package Dimensions

Unit : mm



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