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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

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Keep safety first in your circuit designs!

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Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of nonflammable material or (iii) prevention against any malfunction or mishap.

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HVC306C

Variable Capacitance Diode for VHF tuner



ADE-208-1600A (Z)

Rev.1
Jan. 2003

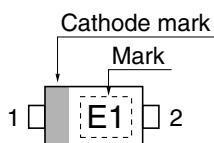
Features

- High capacitance ratio ($n = 11.0\text{min}$).
- Low series resistance and good C-V linearity.
- Ultra small Flat Package (UFP) is suitable for surface mount design.

Ordering Information

Type No.	Laser Mark	Package Code
HVC306C	E1	UFP

Pin Arrangement



1. Cathode
2. Anode

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Reverse voltage	V_R	34	V
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C

Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse current	I_{R1}	—	—	10	nA	$V_R = 32\text{ V}$
	I_{R2}	—	—	100		$V_R = 32\text{ V}$, Ta = 60°C
Capacitance	C_2	29.5	—	34.0	pF	$V_R = 2\text{ V}$, f = 1 MHz
	C_{25}	2.57	—	2.90		$V_R = 25\text{ V}$, f = 1 MHz
Capacitance ratio	n	11.0	—	—	—	C_2/C_{25}
Series resistance	r_s	—	—	0.75	Ω	$V_R = 5\text{ V}$, f = 470 MHz
Matching error	$\Delta C/C^{*1}$	—	—	2.0	%	$V_R = 2\text{ to }25\text{ V}$, f = 1 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,

$$\Delta C/C = \frac{(C_{\text{max}} - C_{\text{min}})}{C_{\text{min}}} \times 100 (\%)$$

Main Characteristic

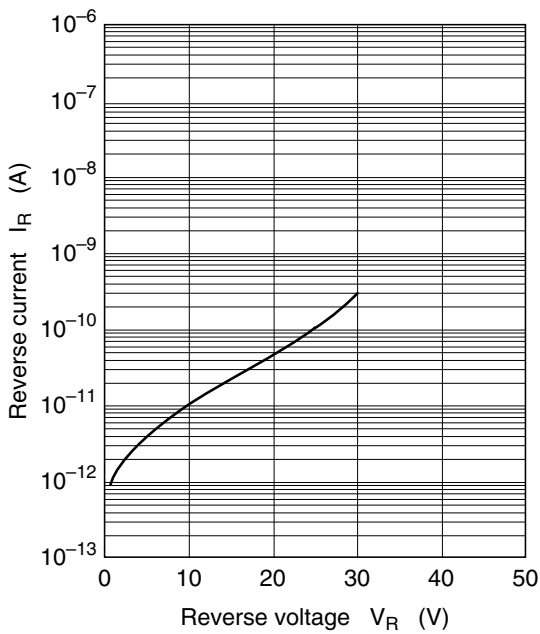


Fig.1 Reverse current vs. Reverse voltage

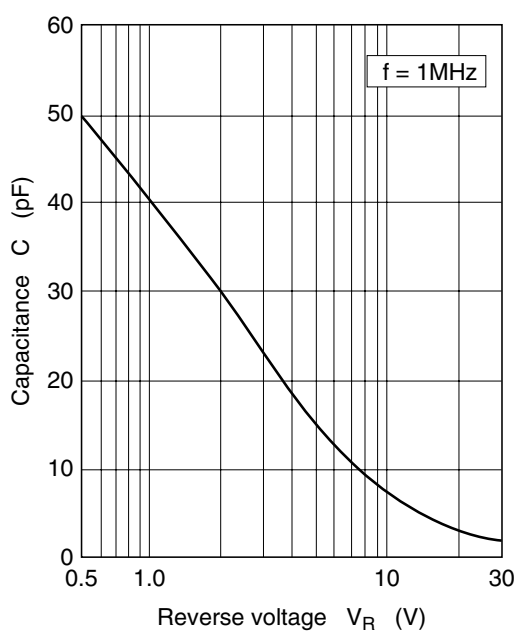


Fig.2 Capacitance vs. Reverse voltage

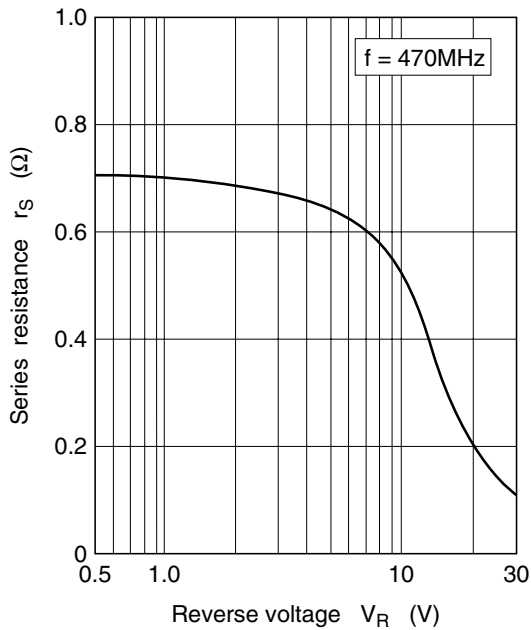


Fig.3 Series resistance vs. Reverse voltage

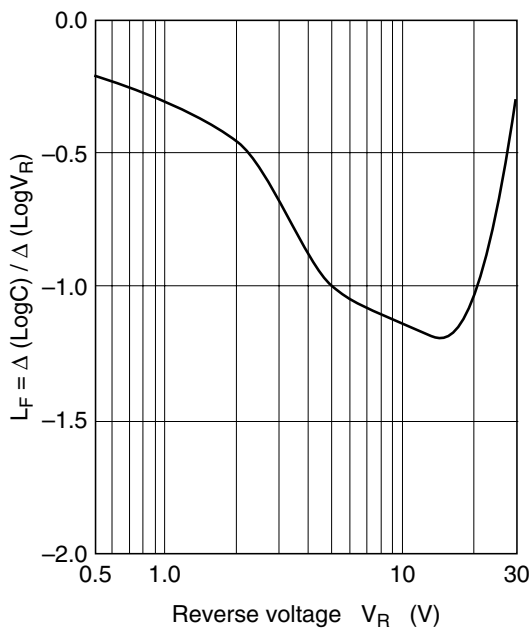
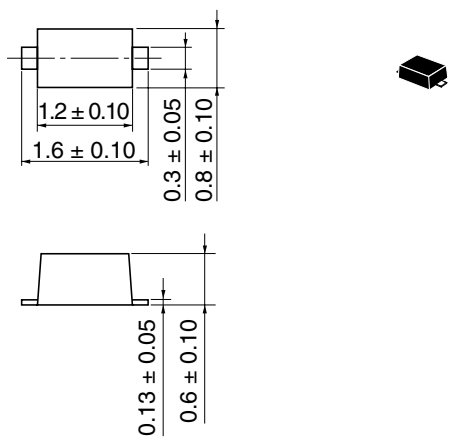


Fig.4 Linearity factor vs. Reverse voltage

Package Dimensions

As of July, 2002
Unit: mm



Hitachi Code	UFP
JEDEC	—
JEITA	Conforms
Mass (reference value)	0.0016 g

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