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

Cautions

Keep safety first in your circuit designs!

1. Renesas Technology Corporation puts the maximum effort into making semiconductor products better and more reliable, but there is always the possibility that trouble may occur with them. Trouble with semiconductors may lead to personal injury, fire or property damage.

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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HVU306A

Variable Capacitance Diode for VHF tuner



ADE-208-045E (Z)

Rev.5
Oct. 2002

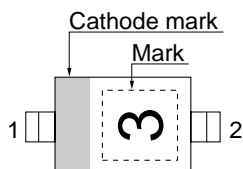
Features

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

Ordering Information

Type No.	Laser Mark	Package Code
HVU306A	3	URP

Pin Arrangement



1. Cathode
2. Anode

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Reverse voltage	V_R	32	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 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	29.3	—	34.2	pF	$V_R = 2\text{ V}$, $f = 1\text{ MHz}$
	C_{25}	2.57	—	2.92		$V_R = 25\text{ V}$, $f = 1\text{ MHz}$
Capacitance ratio	n	11.0	—	—	—	C_2/C_{25}
Series resistance	r_s	—	—	0.75	Ω	$V_R = 5\text{ V}$, $f = 470\text{ MHz}$
Matching error	$\Delta C/C^{*1}$	—	—	2.0	%	$V_R = 2\text{ to }25\text{ V}$, $f = 1\text{ MHz}$

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,

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

Main Characteristic

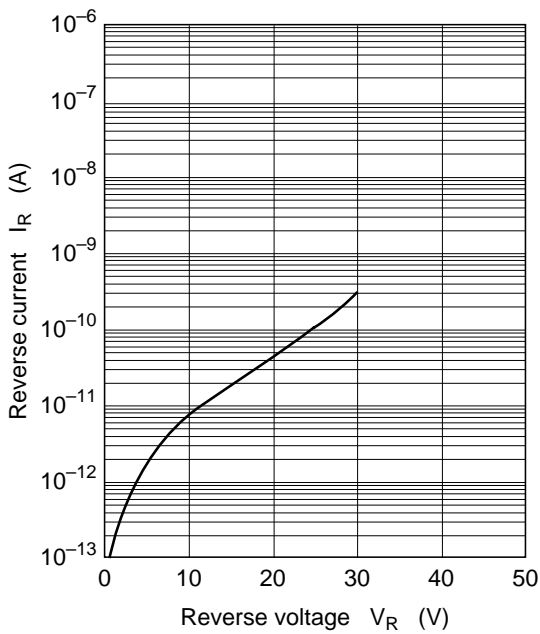


Fig.1 Reverse current vs. Reverse voltage

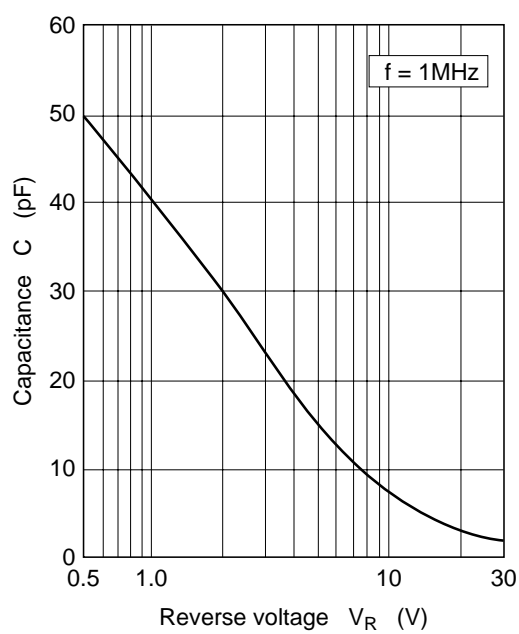


Fig.2 Capacitance vs. Reverse voltage

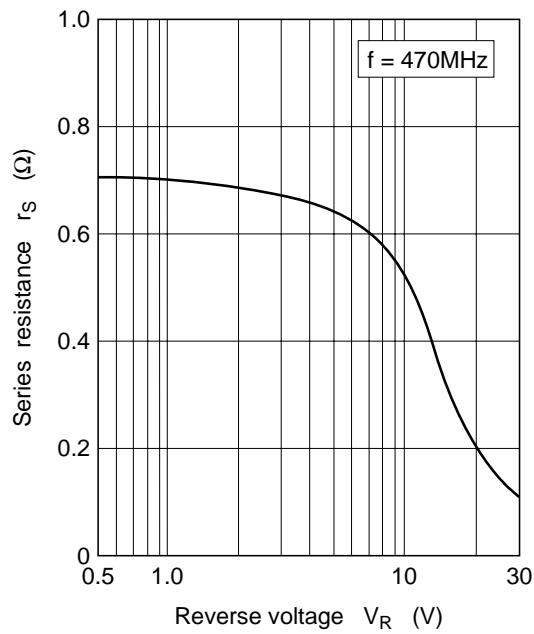


Fig.3 Series resistance vs. Reverse voltage

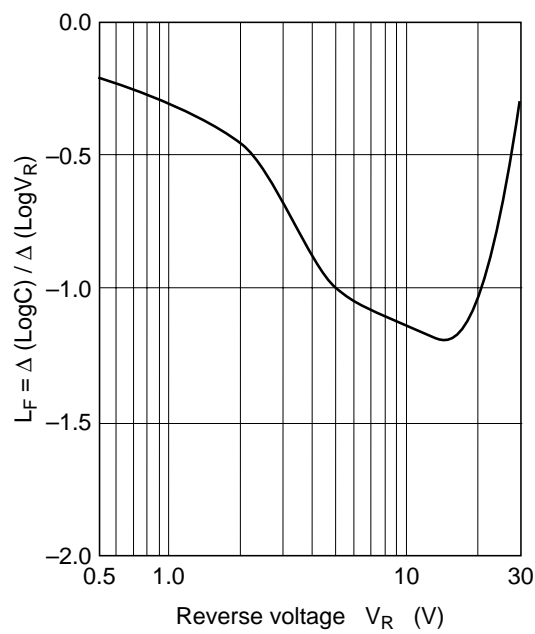
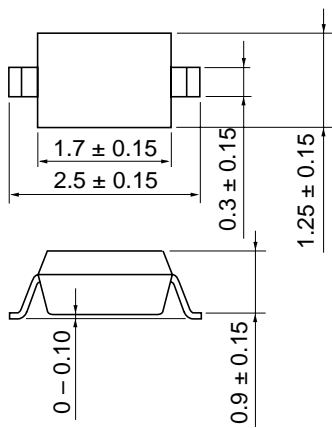


Fig.4 Linearity factor vs. Reverse voltage

Package Dimensions

As of July, 2002
Unit: mm



Hitachi Code	URP
JEDEC	Conforms
JEITA	—
Mass (reference value)	0.004 g

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