

To all our customers

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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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HVU306C

Variable Capacitance Diode for VHF tuner

RENESAS

ADE-208-1601A (Z)

Rev.1
Jan. 2003

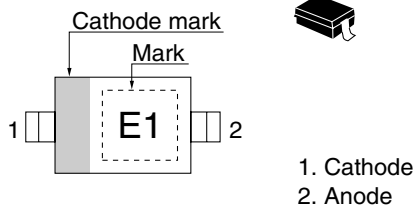
Features

- 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
HVU306C	E1	URP

Pin Arrangement



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		$V_R = 32\text{ V}, T_a = 60^\circ\text{C}$
Capacitance	C_2	29.5	—	34.0	pF	$V_R = 2\text{ V}, f = 1\text{ MHz}$
	C_{25}	2.57	—	2.90		$V_R = 25\text{ V}, f = 1\text{ MHz}$
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,

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

Main Characteristic

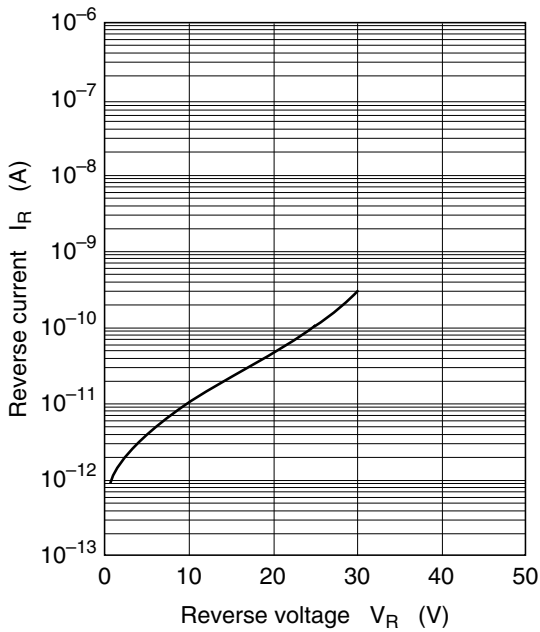


Fig.1 Reverse current vs. Reverse voltage

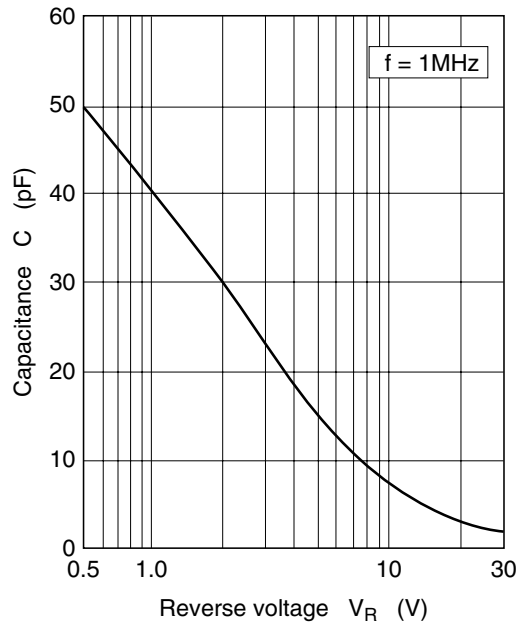


Fig.2 Capacitance vs. Reverse voltage

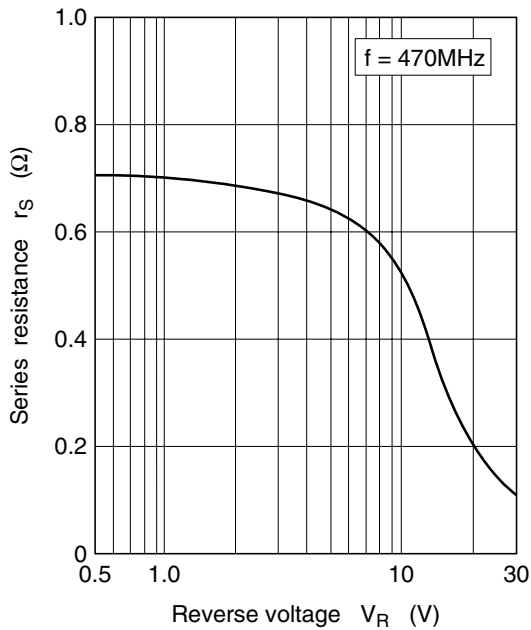


Fig.3 Series resistance vs. Reverse voltage

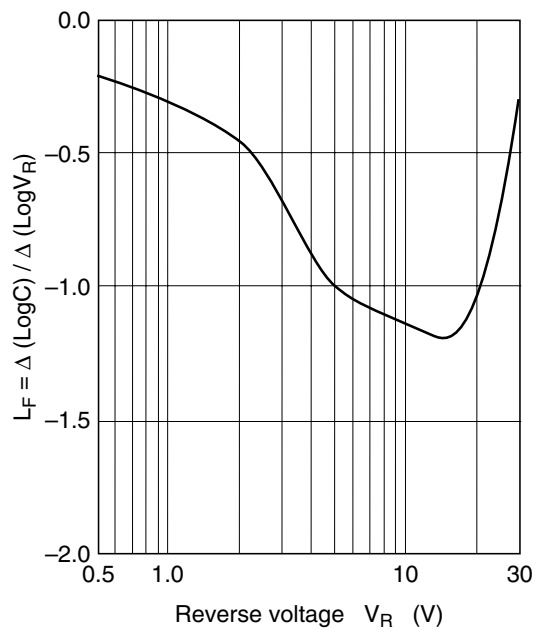
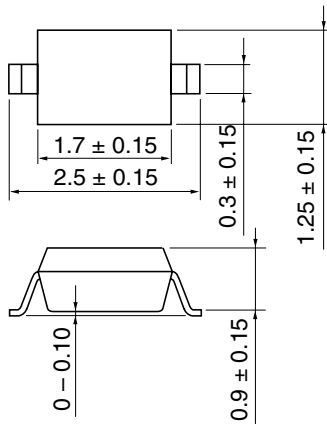


Fig.4 Linearity factor vs. Reverse voltage

Package Dimensions

As of July, 2002
Unit: mm



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

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Sales Offices

HITACHI

Hitachi, Ltd.

Semiconductor & Integrated Circuits
 Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
 Tel: <03> 3270-2111 Fax: <03> 3270-5109

URL <http://www.hitachisemiconductor.com/>

For further information write to:

Hitachi Semiconductor
 (America) Inc.
 179 East Tasman Drive
 San Jose, CA 95134
 Tel: <1> (408) 433-1990
 Fax: <1> (408) 433-0223

Hitachi Europe Ltd.
 Electronic Components Group
 Whitebrook Park
 Lower Cookham Road
 Maidenhead
 Berkshire SL6 8YA, United Kingdom
 Tel: <44> (1628) 585000
 Fax: <44> (1628) 778322

Hitachi Europe GmbH
 Electronic Components Group
 Dornacher Str 3
 D-85622 Feldkirchen
 Postfach 201, D-85619 Feldkirchen
 Germany
 Tel: <49> (89) 9 9180-0
 Fax: <49> (89) 9 29 30 00

Hitachi Asia Ltd.
 Hitachi Tower
 16 Collyer Quay #20-00
 Singapore 049318
 Tel : <65>-6538-6533/6538-8577
 Fax : <65>-6538-6933/6538-3877
 URL : <http://semiconductor.hitachi.com.sg>

Hitachi Asia Ltd.
 (Taipei Branch Office)
 4/F, No. 167, Tun Hwa North Road
 Hung-Kuo Building
 Taipei (105), Taiwan
 Tel : <886>-(2)-2718-3666
 Fax : <886>-(2)-2718-8180
 Telex : 23222 HAS-TP
 URL : <http://semiconductor.hitachi.com.tw>

Hitachi Asia (Hong Kong) Ltd.
 Group III (Electronic Components)
 7/F., North Tower
 World Finance Centre,
 Harbour City, Canton Road
 Tsim Sha Tsui, Kowloon Hong Kong
 Tel : <852>-2735-9218
 Fax : <852>-2730-0281
 URL : <http://semiconductor.hitachi.com.hk>

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 Colophon 7.0



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