

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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HVU300C

Variable Capacitance Diode for VHF tuner



ADE-208-1631 (Z)

Rev.0
Feb. 2003

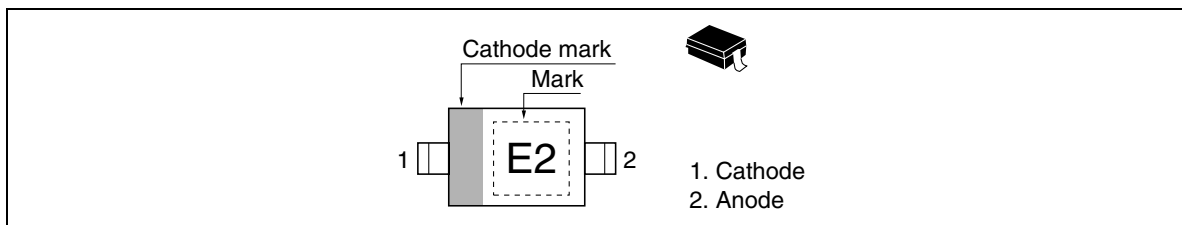
Features

- High capacitance ratio ($n = 14.5$ min) and suitable for wide band tuner.
- 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 |
|----------|------------|--------------|
| HVU300C | E2 | URP |

Pin Arrangement



HVU300C

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 | 150 | °C |
| Storage temperature | Tstg | -55 to +150 | °C |

Note: 1. $R_L = 10\text{ k}\Omega$

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 | 39.5 | — | 47.0 | pF | $V_R = 2\text{ V}, f = 1\text{ MHz}$ |
| | C_{25} | 2.6 | — | 3.0 | | $V_R = 25\text{ V}, f = 1\text{ MHz}$ |
| Capacitance ratio | n | 14.5 | — | — | — | C_2 / C_{25} |
| Series resistance | r_s | — | — | 1.1 | 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

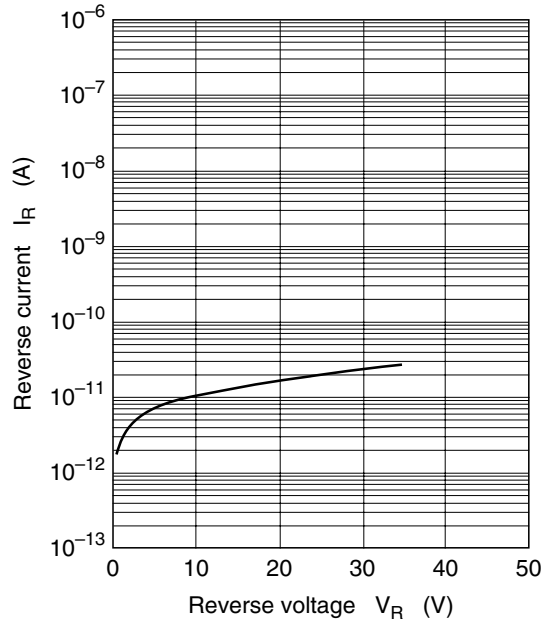


Fig.1 Reverse current vs. Reverse voltage

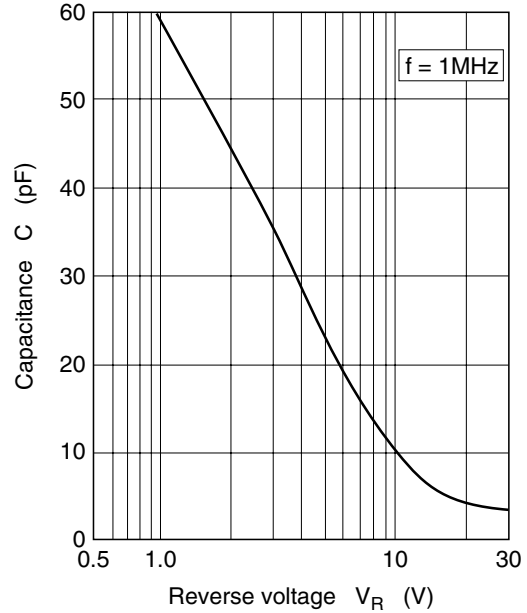


Fig.2 Capacitance vs. Reverse voltage

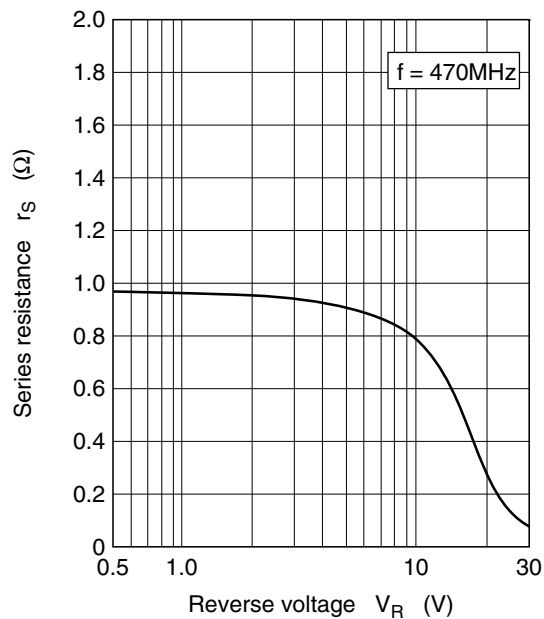


Fig.3 Series resistance vs. Reverse voltage

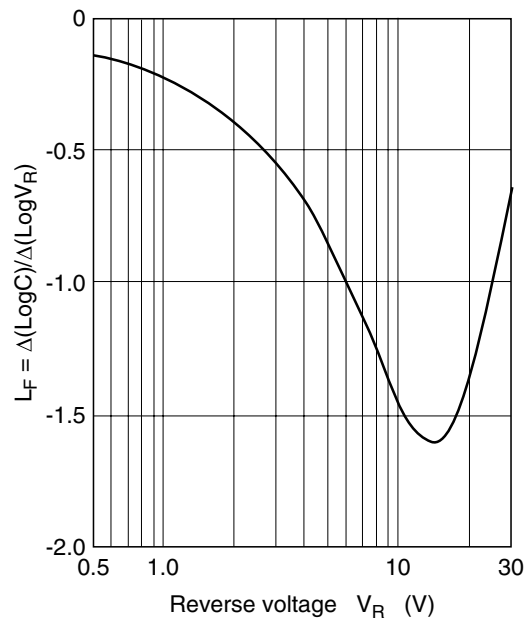
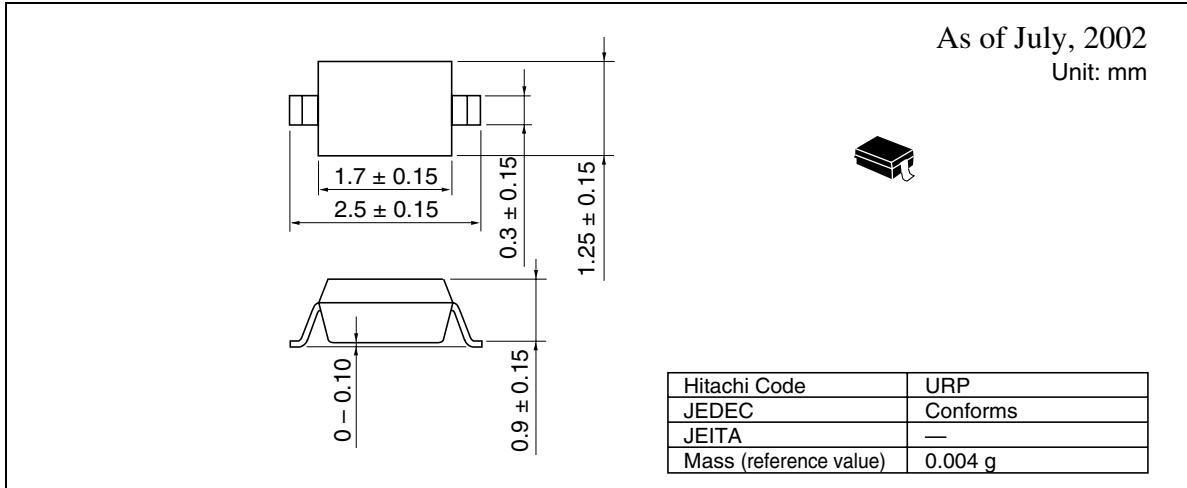


Fig.4 Linearity factor vs. Reverse voltage

HVU300C

Package Dimensions



Renesas Technology Corp. Sales Strategic Planning Div. Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan

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