

To our customers,

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## Old Company Name in Catalogs and Other Documents

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April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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# HVU300C

## Variable Capacitance Diode for VHF tuner

REJ03G0520-0100  
(Previous: ADE-208-1631)  
Rev.1.00  
Feb 23, 2005

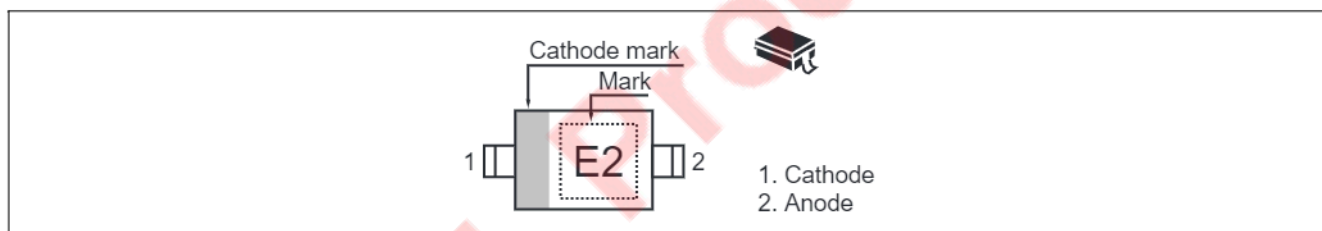
### Features

- 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 Name | Package Code<br>(Previous Code) |
|----------|------------|--------------|---------------------------------|
| HVU300C  | E2         | URP          | PTSP0002ZA-A<br>(URP)           |

### Pin Arrangement



## 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 | $T_j$         | 150         | °C   |
| Storage temperature  | $T_{stg}$     | -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  | $\Omega$ | $V_R = 5\text{ V}, f = 470\text{ MHz}$            |
| 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

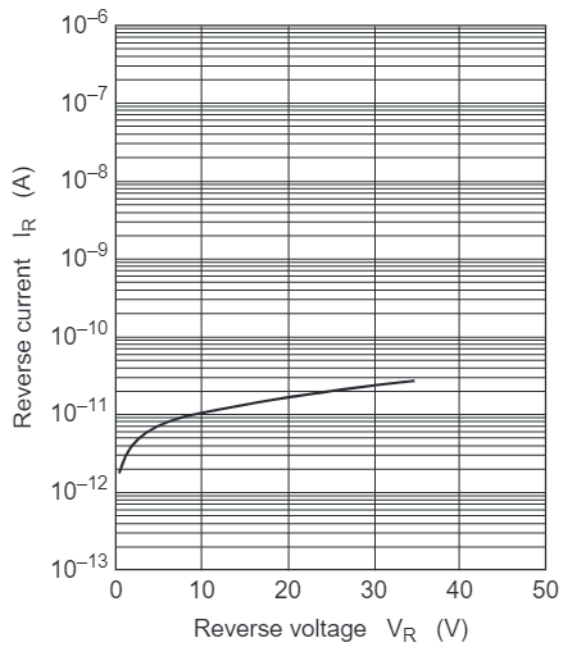


Fig.1 Reverse current vs. Reverse voltage

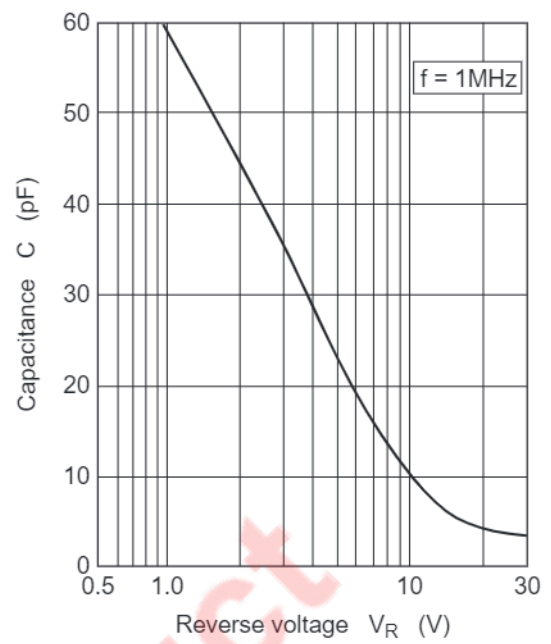


Fig.2 Capacitance vs. Reverse voltage

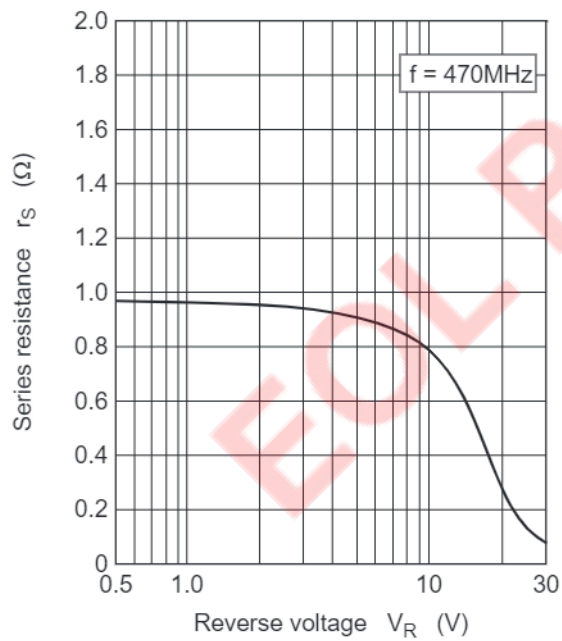


Fig.3 Series resistance vs. Reverse voltage

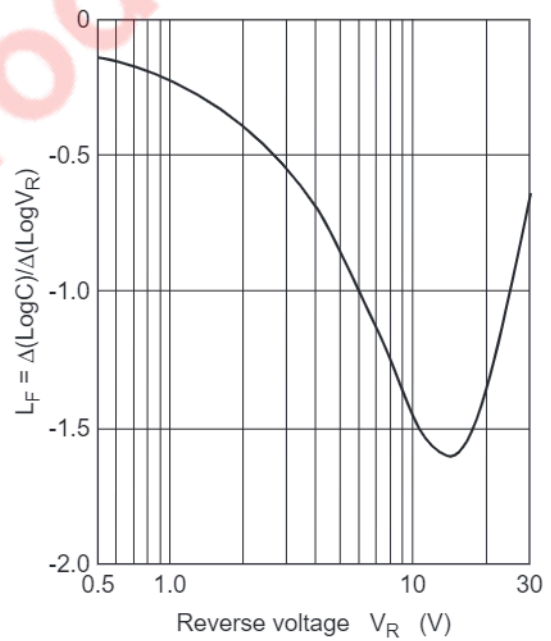
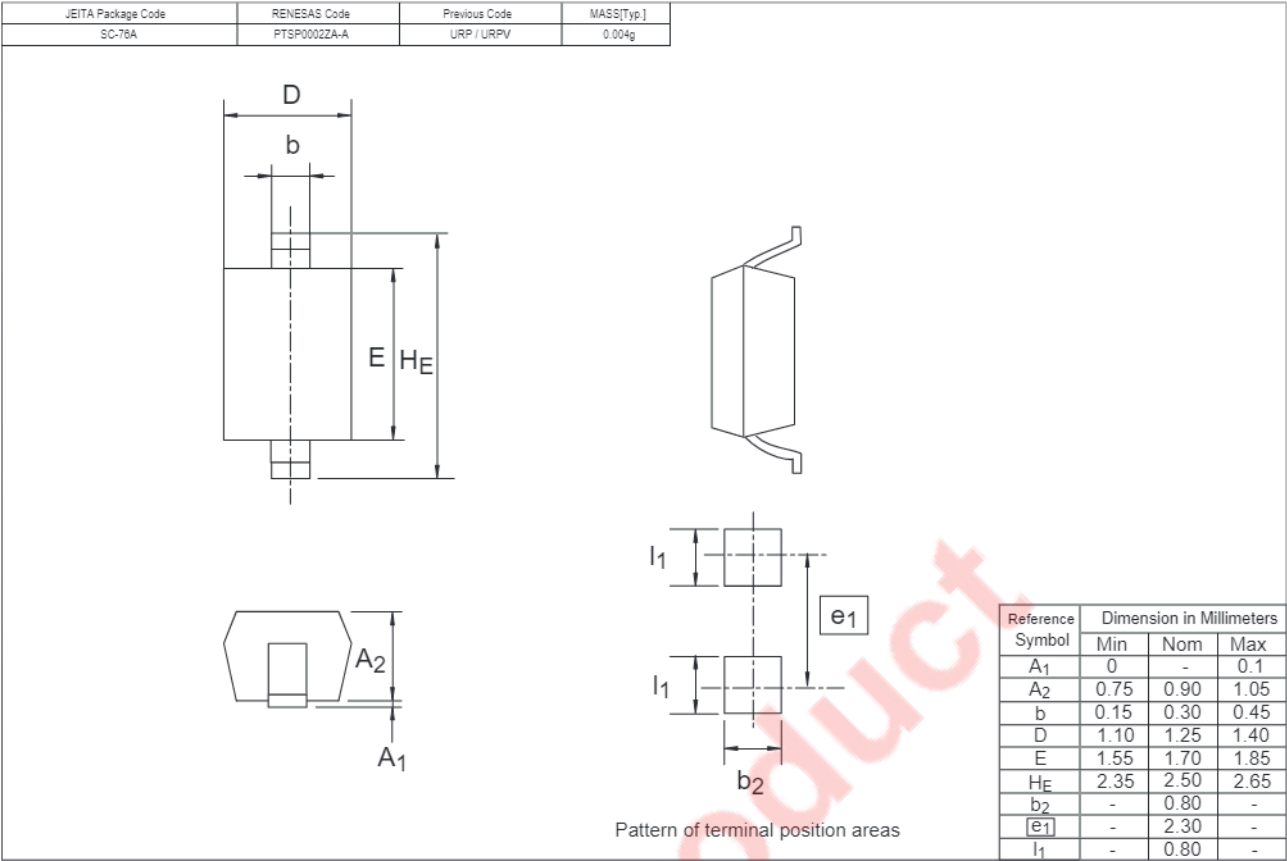


Fig.4 Linearity factor vs. Reverse voltage

Package Dimensions





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