

# HVU359

## Variable Capacitance Diode for VCO

REJ03G0507-0500  
(Previous: ADE-208-023D)  
Rev.5.00  
Jan 28, 2005

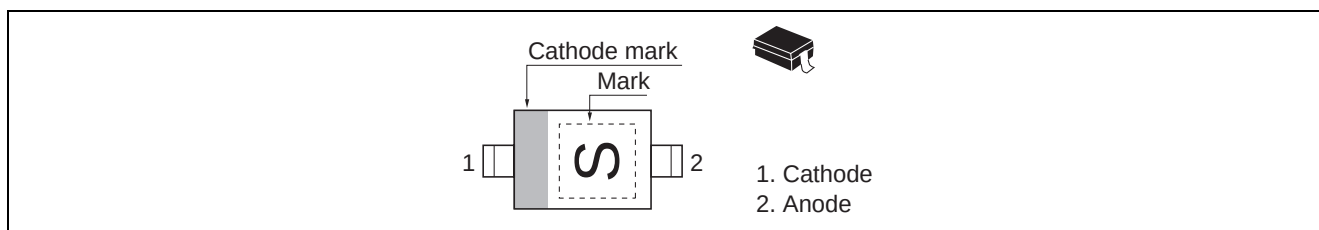
### Features

- High capacitance ratio and good C-V linearity.
- To be usable at low voltage.
- Ultra small Resin Package (URP) is suitable for surface mount design.

### Ordering Information

| Type No. | Laser Mark | Renesas Code | Previous Code |
|----------|------------|--------------|---------------|
| HVU359   | S          | PTSP0002ZA-A | URP           |

### Pin Arrangement



## Absolute Maximum Ratings

(Ta = 25°C)

| Item                 | Symbol    | Value       | Unit |
|----------------------|-----------|-------------|------|
| Reverse voltage      | $V_R$     | 15          | 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       | $V_R = 10\text{ V}$                                                                 |
|                   | $I_{R2}$ | —    | —   | 100  |          | $V_R = 10\text{ V}$ , $T_a = 60^\circ\text{C}$                                      |
| Capacitance       | $C_1$    | 24.8 | —   | 29.8 | pF       | $V_R = 1\text{ V}$ , $f = 1\text{ MHz}$                                             |
|                   | $C_4$    | 6.0  | —   | 8.3  |          | $V_R = 4\text{ V}$ , $f = 1\text{ MHz}$                                             |
| Capacitance ratio | n        | 3.0  | —   | —    | —        | $C_1/C_4$                                                                           |
| Series resistance | $r_s$    | —    | —   | 1.5  | $\Omega$ | $V_R = 4\text{ V}$ , $f = 100\text{ MHz}$                                           |
| ESD-Capability *1 | —        | 200  | —   | —    | V        | $C = 200\text{ pF}$ , $R = 0\ \Omega$ , Both forward and reverse direction 1 pulse. |

Note: 1. Failure criterion ;  $I_R \geq 20\text{ nA}$  at  $V_R = 10\text{ V}$

Main Characteristic

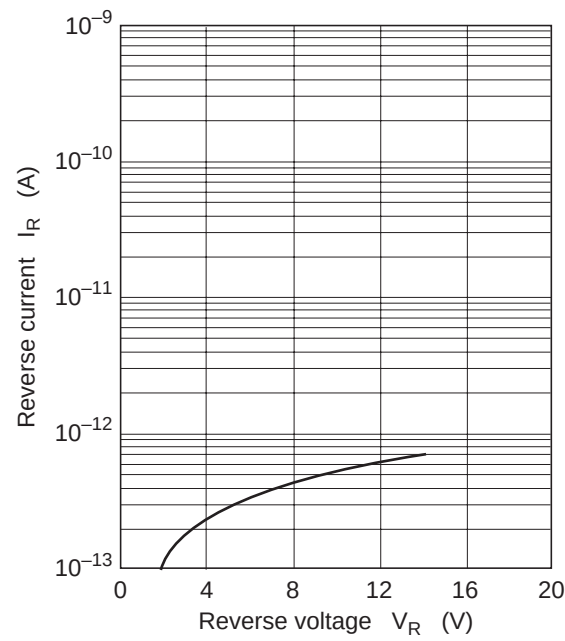


Fig.1 Reverse Current vs. Reverse Voltage

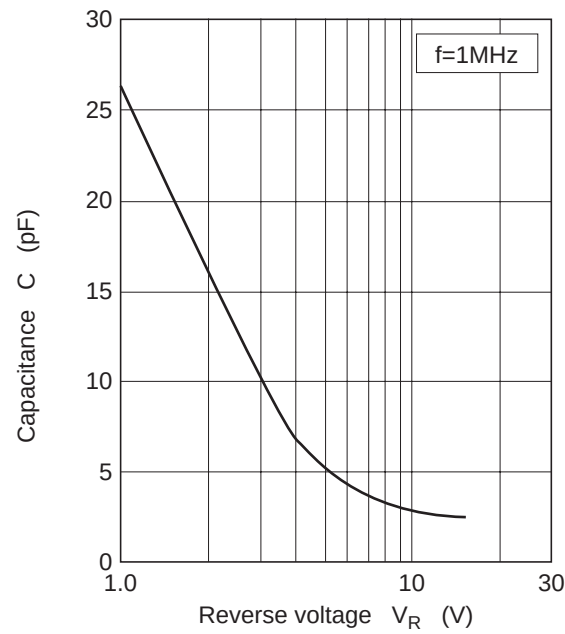
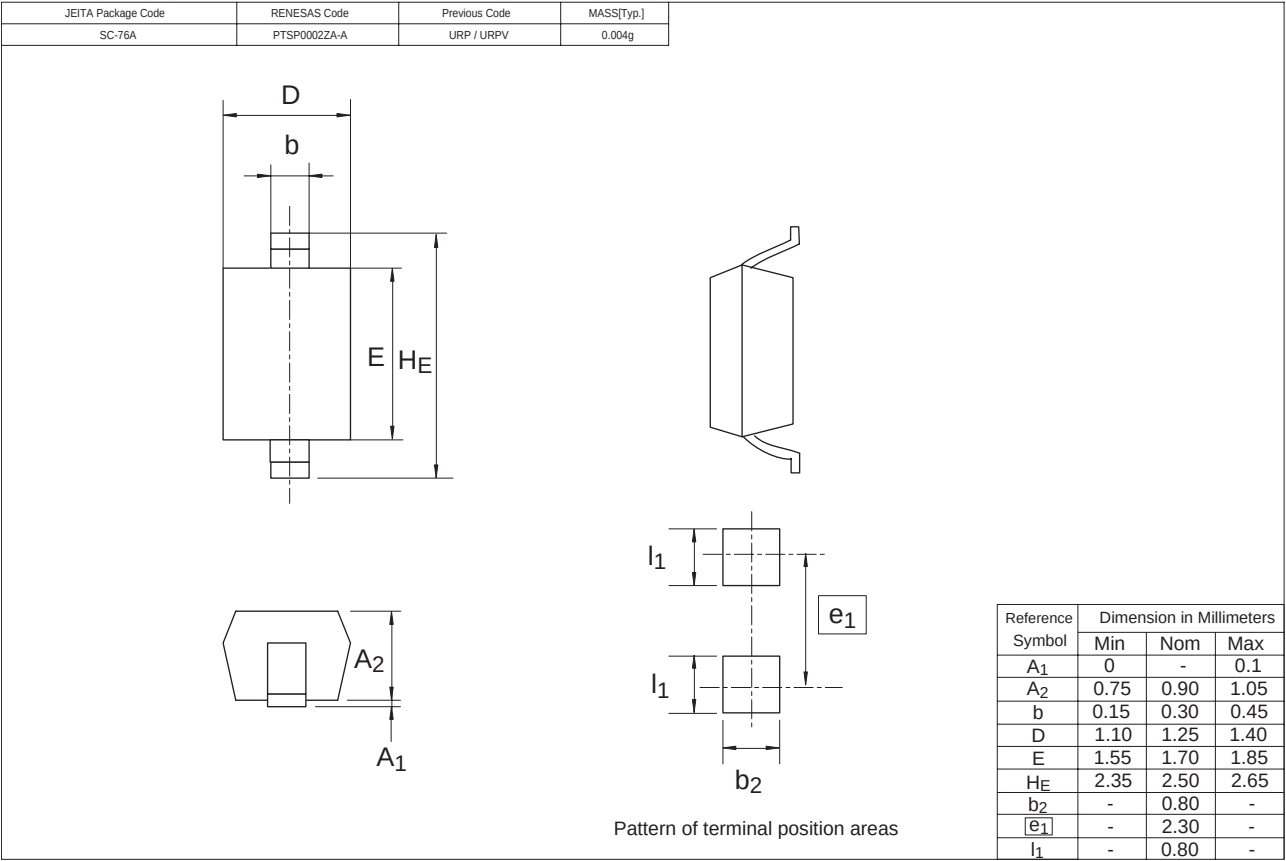


Fig.2 Capacitance vs. Reverse Voltage

Package Dimensions



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450 Holger Way, San Jose, CA 95134-1368, U.S.A  
Tel: <1> (408) 382-7500, Fax: <1> (408) 382-7501

#### **Renesas Technology Europe Limited**

Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K.  
Tel: <44> (1628) 585-100, Fax: <44> (1628) 585-900

#### **Renesas Technology Hong Kong Ltd.**

7th Floor, North Tower, World Finance Centre, Harbour City, 1 Canton Road, Tsimshatsui, Kowloon, Hong Kong  
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#### **Renesas Technology Taiwan Co., Ltd.**

10th Floor, No.99, Fushing North Road, Taipei, Taiwan  
Tel: <886> (2) 2715-2888, Fax: <886> (2) 2713-2999

#### **Renesas Technology (Shanghai) Co., Ltd.**

Unit2607 Ruijing Building, No.205 Maoming Road (S), Shanghai 200020, China  
Tel: <86> (21) 6472-1001, Fax: <86> (21) 6415-2952

#### **Renesas Technology Singapore Pte. Ltd.**

1 Harbour Front Avenue, #06-10, Keppel Bay Tower, Singapore 098632  
Tel: <65> 6213-0200, Fax: <65> 6278-8001