

# HVC417C

## Variable Capacitance Diode for tuner

REJ03G0518-0100  
(Previous: ADE-208-1433)  
Rev.1.00  
Feb 17, 2005

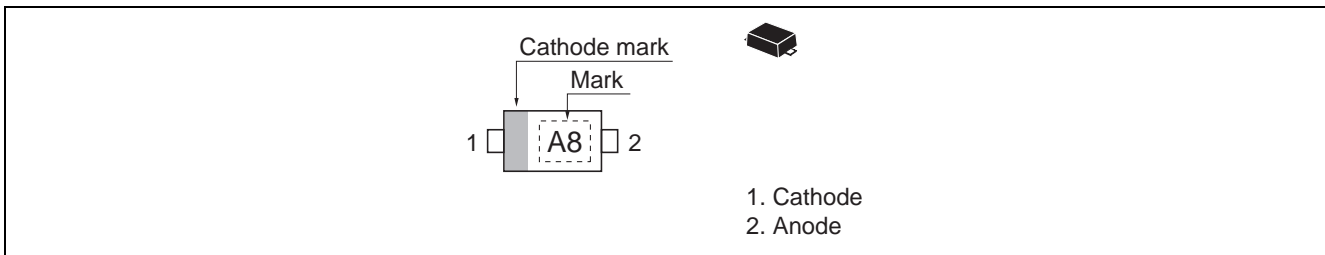
### Features

- High capacitance ratio. (n = 13.00 min)
- Ultra small Flat Lead Package (UFP) is suitable for surface mount design.

### Ordering Information

| Type No. | Laser Mark | Renesas Code | Previous Code |
|----------|------------|--------------|---------------|
| HVC417C  | A8         | PWSF0002ZA-A | UFP           |

### Pin Arrangement



## Absolute Maximum Ratings

(Ta = 25°C)

| Item                 | Symbol           | Value       | Unit |
|----------------------|------------------|-------------|------|
| Reverse voltage      | V <sub>R</sub>   | 30          | V    |
| Junction temperature | T <sub>j</sub>   | 125         | °C   |
| Storage temperature  | T <sub>stg</sub> | -55 to +125 | °C   |

## Electrical Characteristics

(Ta = 25°C)

| Item              | Symbol          | Min   | Typ | Max  | Unit | Test Condition                        |
|-------------------|-----------------|-------|-----|------|------|---------------------------------------|
| Reverse current   | I <sub>R1</sub> | —     | —   | 10   | nA   | V <sub>R</sub> = 25 V                 |
|                   | I <sub>R2</sub> | —     | —   | 100  |      | V <sub>R</sub> = 25 V, Ta = 60°C      |
| Capacitance       | C <sub>1</sub>  | 7.80  | —   | 9.40 | pF   | V <sub>R</sub> = 1 V, f = 1 MHz       |
|                   | C <sub>25</sub> | 0.50  | —   | 0.60 |      | V <sub>R</sub> = 25V, f = 1 MHz       |
| Capacitance ratio | n               | 13.00 | —   | —    | —    | C <sub>1</sub> / C <sub>25</sub>      |
| Series resistance | r <sub>s</sub>  | —     | —   | 1.50 | Ω    | V <sub>R</sub> = 5 V, f = 470 MHz     |
| Matching error    | ΔC/C *1         | —     | —   | 6.00 | %    | V <sub>R</sub> = 1 to 25 V, f = 1 MHz |

Note: 1. C.C system (Continuous Connected taping system) enable to make any 10 pcs of ΔC/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

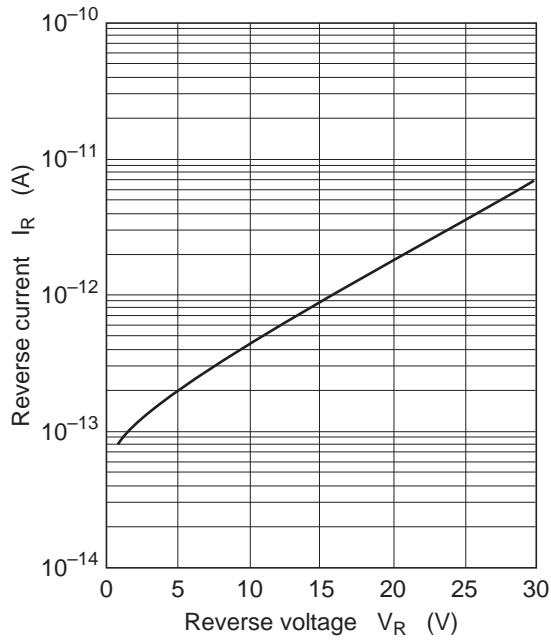


Fig.1 Reverse current vs. Reverse voltage

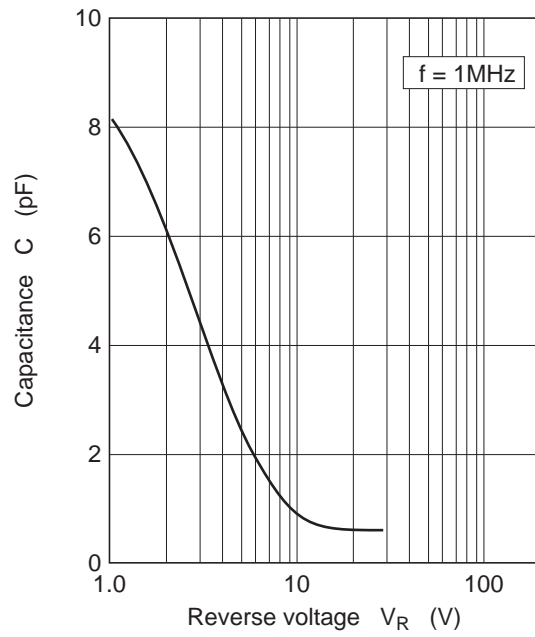


Fig.2 Capacitance vs. Reverse voltage

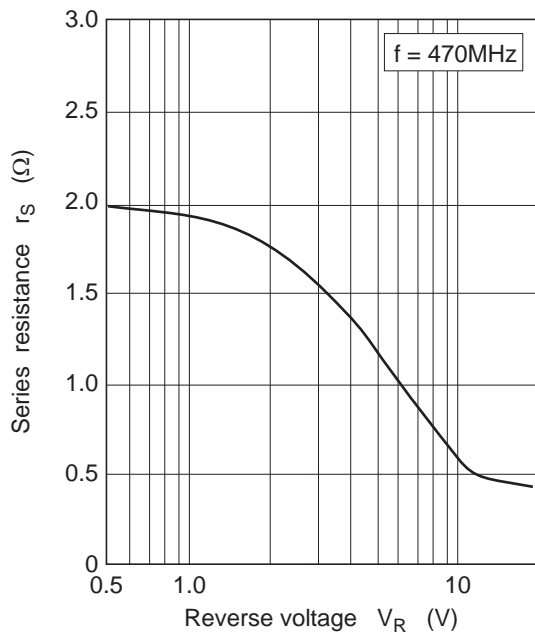


Fig.3 Series resistance vs. Reverse voltage

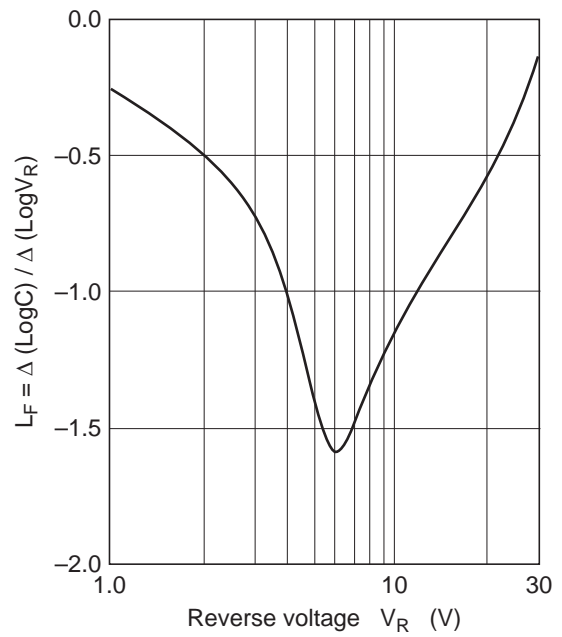
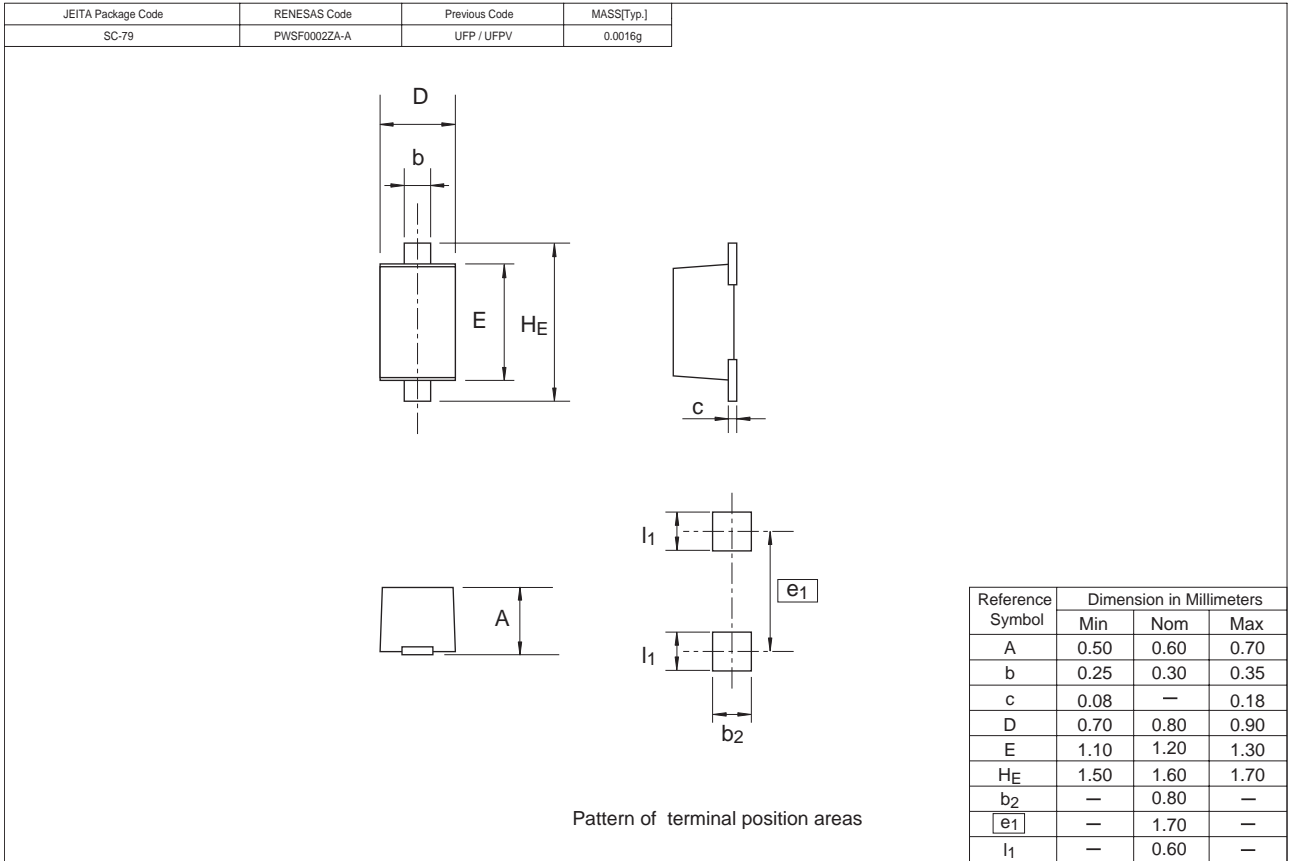


Fig.4 Linearity factor vs. Reverse voltage

Package Dimensions



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