

## HVD133A

### Silicon Epitaxial Planar Pin Diode for Antenna Switching

REJ03G0171-0100Z  
Rev.1.00  
Jan.21.2004

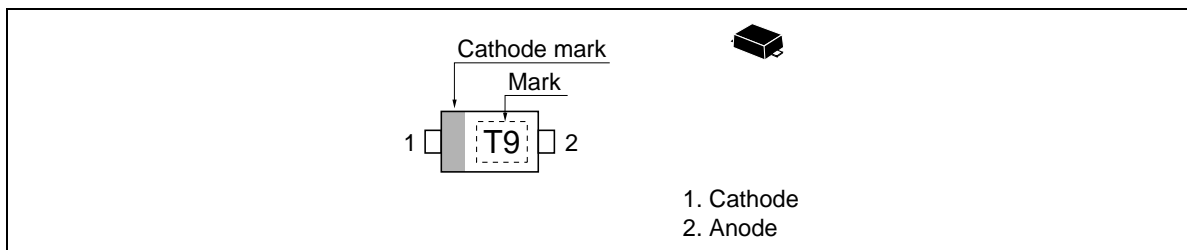
#### Features

- An optimal solution for antenna switching in mobile phones.
- Low capacitance. ( $C1 = 1.0 \text{ pF max}$ )
- Low forward resistance. ( $r_f = 0.7 \Omega \text{ max}$ )
- Super small Flat Package (SFP) is suitable for surface mount design.

#### Ordering Information

| Type No. | Laser Mark | Package Code |
|----------|------------|--------------|
| HVD133A  | T9         | SFP          |

#### Pin Arrangement



**Absolute Maximum Ratings**

(Ta = 25°C)

| Item                 | Symbol           | Value       | Unit |
|----------------------|------------------|-------------|------|
| Reverse voltage      | V <sub>R</sub>   | 30          | V    |
| Power dissipation    | P <sub>d</sub>   | 150         | mW   |
| 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 voltage    | V <sub>R</sub> | 30  | —    | —    | V    | I <sub>R</sub> = 1 μA              |
| Reverse current    | I <sub>R</sub> | —   | —    | 100  | nA   | V <sub>R</sub> = 25 V              |
| Forward voltage    | V <sub>F</sub> | —   | —    | 0.85 | V    | I <sub>F</sub> = 2 mA              |
| Capacitance        | C <sub>1</sub> | —   | —    | 1.00 | pF   | V <sub>R</sub> = 1 V, f = 1 MHz    |
|                    | C <sub>6</sub> | —   | —    | 0.90 |      | V <sub>R</sub> = 6 V, f = 1 MHz    |
| Forward resistance | r <sub>f</sub> | —   | 0.55 | 0.70 | Ω    | I <sub>F</sub> = 2 mA, f = 100 MHz |

Note: Please do not use the soldering iron due to avoid high stress to the SFP package.

Main Characteristic

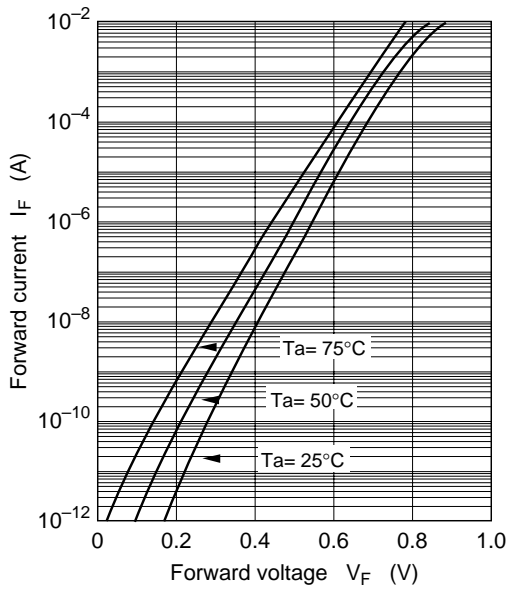


Fig.1 Forward current vs. Forward voltage

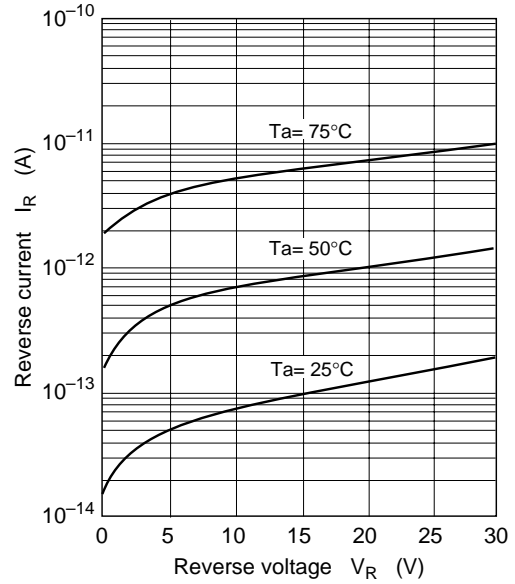


Fig.2 Reverse current vs. Reverse voltage

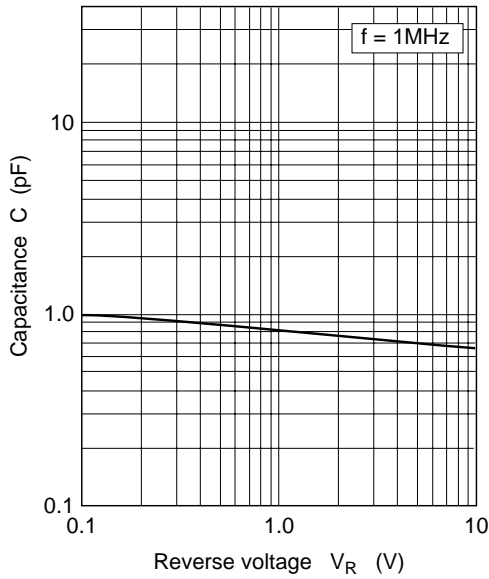


Fig.3 Capacitance vs. Reverse voltage

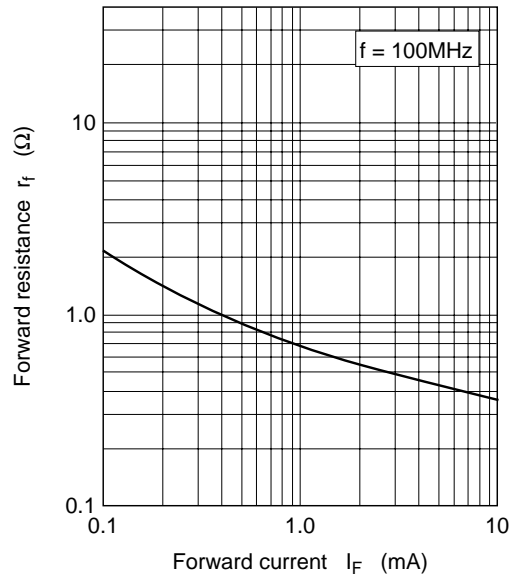
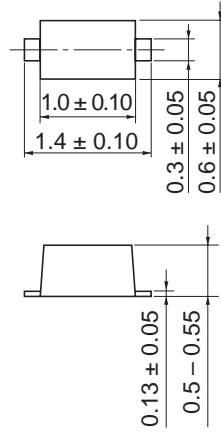


Fig.4 Forward resistance vs. Forward current

Package Dimensions

As of January, 2003  
Unit: mm



|                        |          |
|------------------------|----------|
| Package Code           | SFP      |
| JEDEC                  | —        |
| JEITA                  | —        |
| Mass (reference value) | 0.0010 g |

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