

To all our customers

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Renesas Technology Corp.  
Customer Support Dept.  
April 1, 2003

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# HVD136

## Silicon Epitaxial Trench Pin Diode for Antenna Switching



ADE-208-949 (Z)

Rev. 0  
Jul. 2000

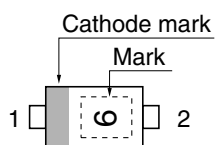
### Features

- Adopting the trench structure improves low capacitance. ( $C = 0.45 \text{ pF max}$ )
- Low forward resistance. ( $r_f = 2.5 \text{ } \Omega \text{ max}$ )
- Low operation current.
- Super small Flat Package (SFP) is suitable for surface mount design.

### Ordering Information

| Type No. | Laser Mark | Package Code |
|----------|------------|--------------|
| HVD136   | 6          | SFP          |

### Outline



1. Cathode  
2. Anode

## Absolute Maximum Ratings

(Ta = 25°C)

| Item                 | Symbol   | Value       | Unit |
|----------------------|----------|-------------|------|
| Peak reverse voltage | $V_{RM}$ | 65          | V    |
| Reverse voltage      | $V_R$    | 60          | V    |
| Forward current      | $I_F$    | 100         | mA   |
| Power dissipation    | Pd       | 150         | mW   |
| Junction temperature | Tj       | 125         | °C   |
| Storage temperature  | Tstg     | -55 to +125 | °C   |

## Electrical Characteristics

(Ta = 25°C)

| Item               | Symbol | Min | Typ | Max  | Unit | Test Condition                                                   |
|--------------------|--------|-----|-----|------|------|------------------------------------------------------------------|
| Reverse current    | $I_R$  | —   | —   | 0.1  | μA   | $V_R = 60$ V                                                     |
| Forward voltage    | $V_F$  | —   | —   | 0.9  | V    | $I_F = 2$ mA                                                     |
| Capacitance        | C      | —   | —   | 0.45 | pF   | $V_R = 1$ V, $f = 1$ MHz                                         |
| Forward resistance | $r_i$  | —   | —   | 2.5  | Ω    | $I_F = 2$ mA, $f = 100$ MHz                                      |
| ESD-Capability *1  | —      | 100 | —   | —    | V    | C = 200 pF, R = 0 Ω, Both forward and reverse direction 1 pulse. |

Notes : 1. Failure criterion ;  $I_R > 100$  nA at  $V_R = 60$  V

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

## Main Characteristic

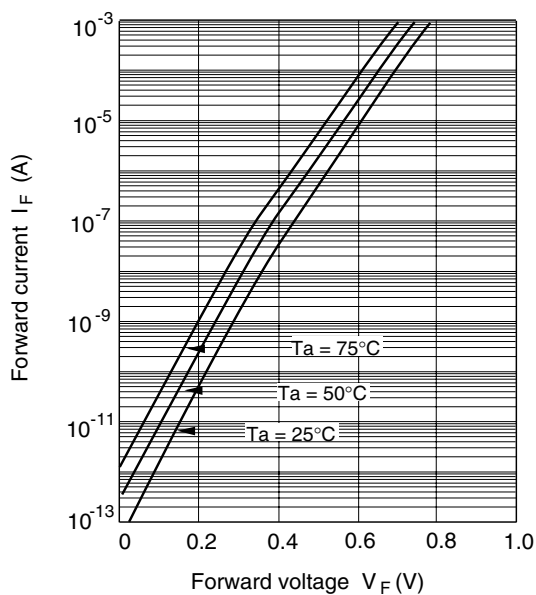


Fig.1 Forward current Vs. Forward voltage

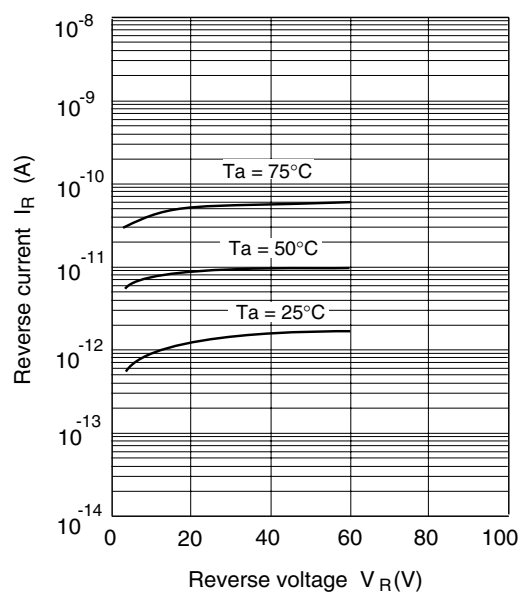


Fig.2 Reverse current Vs. Reverse voltage

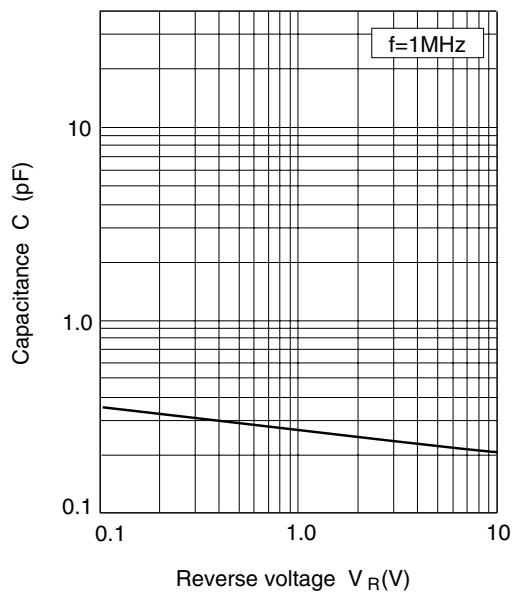


Fig.3 Capacitance Vs. Reverse voltage

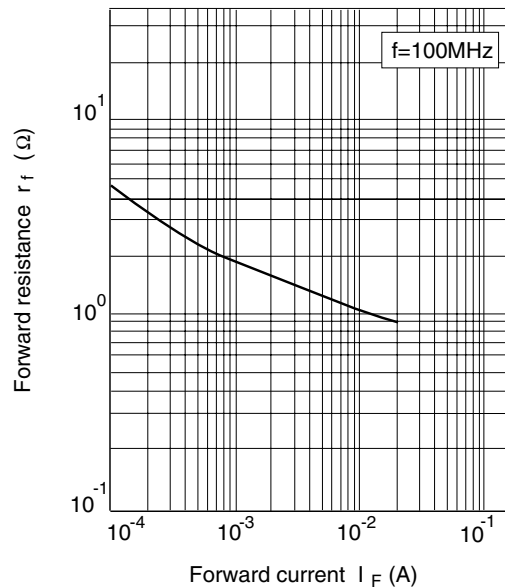


Fig.4 Forward resistance Vs. Forward current

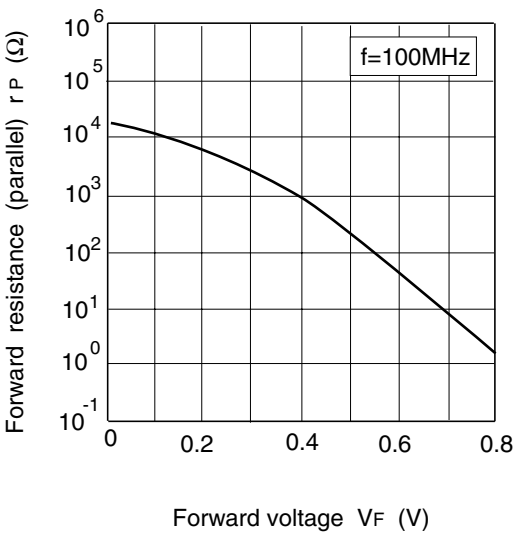
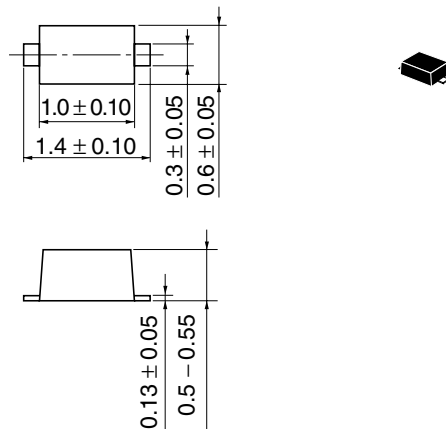


Fig.5 Forward resistance (parallel) Vs. Forward voltage

## Package Dimensions

Unit: mm



|                        |          |
|------------------------|----------|
| Hitachi Code           | SFP      |
| JEDEC                  | —        |
| EIAJ                   | —        |
| Mass (reference value) | 0.0010 g |

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