

To all our customers

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

## Cautions

Keep safety first in your circuit designs!

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Remember to give due consideration to safety when making your circuit designs, with appropriate measures such as (i) placement of substitutive, auxiliary circuits, (ii) use of nonflammable material or (iii) prevention against any malfunction or mishap.

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# HVL145

## Silicon Epitaxial Planar Pin Diode for High Frequency Switching



ADE-208-1497 (Z)

Rev.0  
Oct. 2002

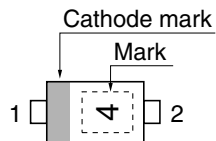
### Features

- Low capacitance. ( $C = 0.45 \text{ pF max}$ )
- Low forward resistance. ( $r_f = 1.8 \Omega \text{ max}$ )
- Extremely small Flat Package (EFP) is suitable for surface mount design.

### Ordering Information

| Type No. | Laser Mark | Package Code |
|----------|------------|--------------|
| HVL145   | 4          | EFP          |

### Pin Arrangement



1. Cathode
2. Anode

**Absolute Maximum Ratings**

(Ta = 25°C)

| Item                 | Symbol | Value       | Unit |
|----------------------|--------|-------------|------|
| Reverse voltage      | $V_R$  | 60          | V    |
| Forward current      | $I_F$  | 50          | mA   |
| Power dissipation    | Pd     | 100         | 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                                                           |
|------------------------------|--------|-----|-----|------|----------|--------------------------------------------------------------------------|
| Forward voltage              | $V_F$  | —   | —   | 0.9  | V        | $I_F = 2 \text{ mA}$                                                     |
| Reverse current              | $I_R$  | —   | —   | 100  | nA       | $V_R = 60 \text{ V}$                                                     |
| Capacitance                  | C      | —   | —   | 0.45 | pF       | $V_R = 1 \text{ V}$ , $f = 1 \text{ MHz}$                                |
| Forward resistance           | $r_f$  | —   | —   | 1.8  | $\Omega$ | $I_F = 10 \text{ mA}$ , $f = 100 \text{ MHz}$                            |
| ESD-Capability <sup>*1</sup> | —      | 100 | —   | —    | V        | C = 200 pF, R = 0 $\Omega$ , Both forward and reverse direction 1 pulse. |

Notes: 1. Failure criterion ;  $I_R \geq 100 \text{ nA}$  at  $V_R = 60 \text{ V}$   
2. Please do not use the soldering iron due to avoid high stress to the EFP package.  
3. The material of lead is exposed for cutting plane. Therefor, soldering nature of lead tip part is considered as unquestioned. Please kindly consider soldering nature.

Main Characteristic

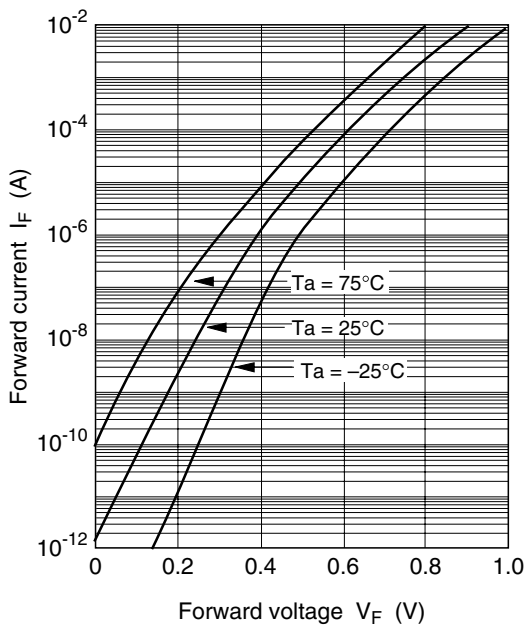


Fig.1 Forward current vs. Forward voltage

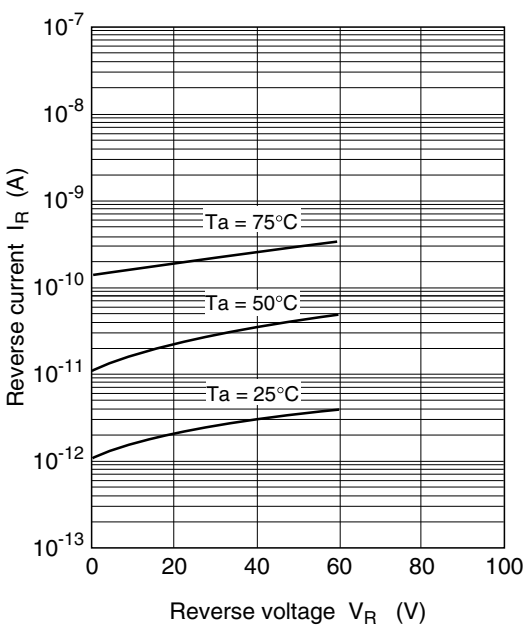


Fig.2 Reverse current vs. Reverse voltage

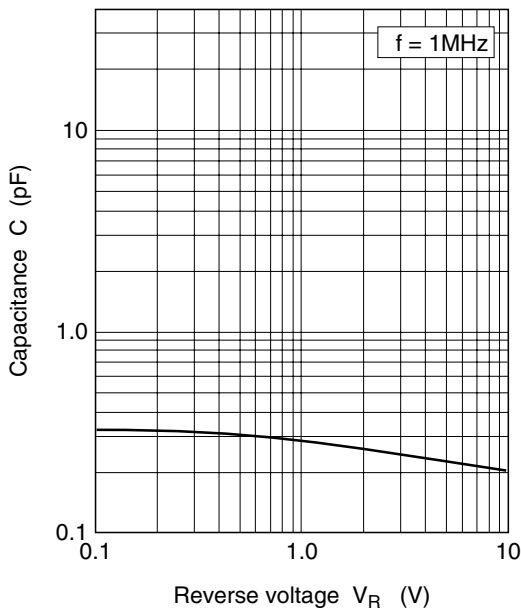


Fig.3 Capacitance vs. Reverse voltage

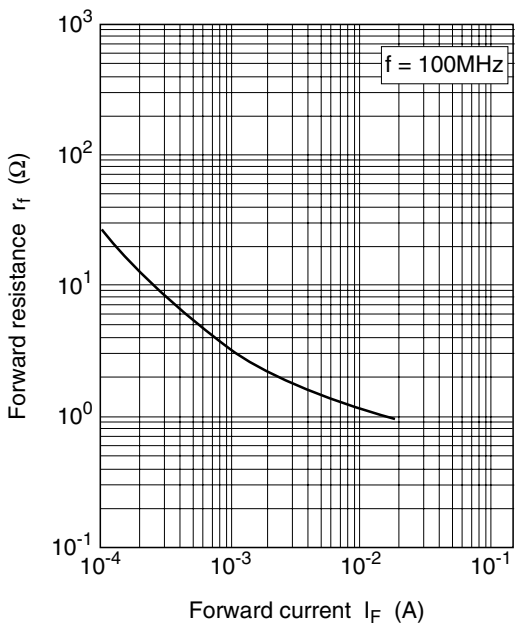


Fig.4 Forward resistance vs. Forward current

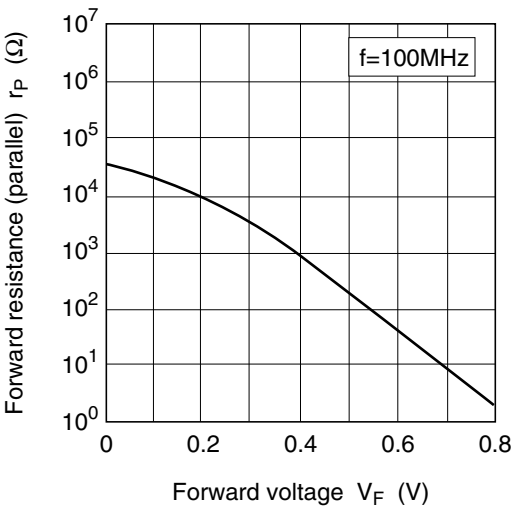
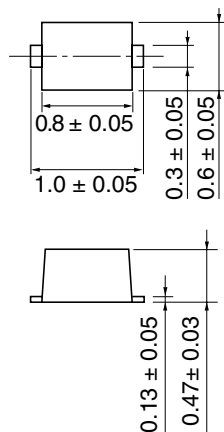


Fig.5 Forward resistance (parallel) vs. Forward voltage

## Package Dimensions

As of July, 2002

Unit: mm



|                        |          |
|------------------------|----------|
| Hitachi Code           | EFP      |
| JEDEC                  | —        |
| JEITA                  | —        |
| Mass (reference value) | 0.0007 g |

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