

To all our customers

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

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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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# HVM189S

Silicon Epitaxial Planar Pin Diode for High Frequency Attenuator



ADE-208-1502 (Z)

Rev.0  
Feb. 2002

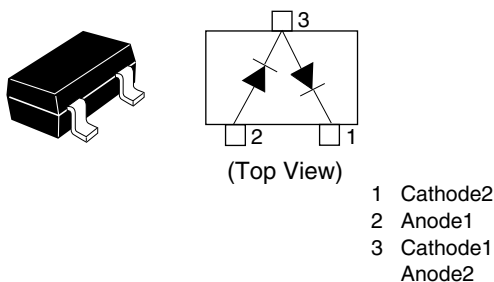
## Features

- Low series resistance. ( $r_f = 5.5$  max)
- MPAK package is suitable for high density surface mounting and high speed assembly.

## Ordering Information

| Type No. | Laser Mark | Package Code |
|----------|------------|--------------|
| HVM189S  | H9         | MPAK         |

## Pin Arrangement



## Absolute Maximum Ratings

(Ta = 25°C)

| Item                 | Symbol    | Value       | Unit |
|----------------------|-----------|-------------|------|
| Reverse voltage      | $V_R$     | 60          | V    |
| Forward current      | $I_F$     | 50          | mA   |
| Power dissipation    | $P_d$ *1  | 100         | mW   |
| Junction temperature | $T_j$     | 125         | °C   |
| Storage temperature  | $T_{stg}$ | -55 to +125 | °C   |

Note: 1. Per one device.

## Electrical Characteristics

(Ta = 25°C)

| Item               | Symbol | Min | Typ | Max | Unit     | Test Condition                                                         |
|--------------------|--------|-----|-----|-----|----------|------------------------------------------------------------------------|
| Reverse current    | $I_R$  | —   | —   | 100 | nA       | $V_R = 60$ V                                                           |
| Forward voltage    | $V_F$  | —   | —   | 1.0 | V        | $I_F = 10$ mA                                                          |
| Capacitance        | C      | 1.4 | —   | 1.8 | pF       | $V_R = 0$ V, $f = 1$ MHz                                               |
| Forward resistance | $r_f$  | —   | —   | 5.5 | $\Omega$ | $I_F = 10$ mA, $f = 100$ MHz                                           |
| ESD-Capability *1  | —      | 200 | —   | —   | V        | C= 200 pF, R= 0 $\Omega$ , Both forward and reverse direction 1 pulse. |

Note: 1. Failure criterion ;  $I_R \geq 100$  nA at  $V_R = 60$  V.

## Main Characteristic

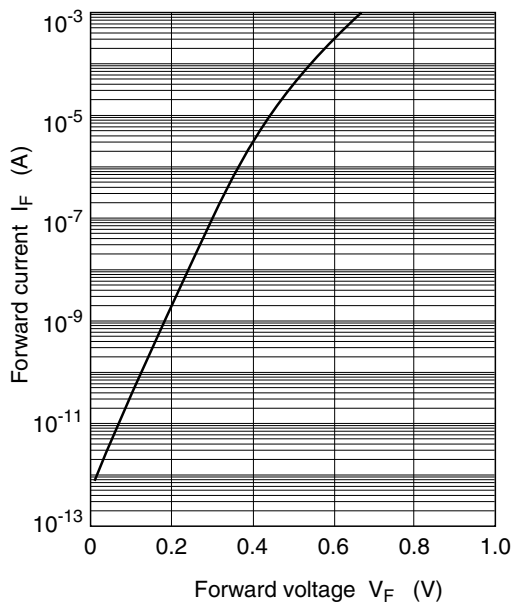


Fig.1 Forward current vs. Forward voltage

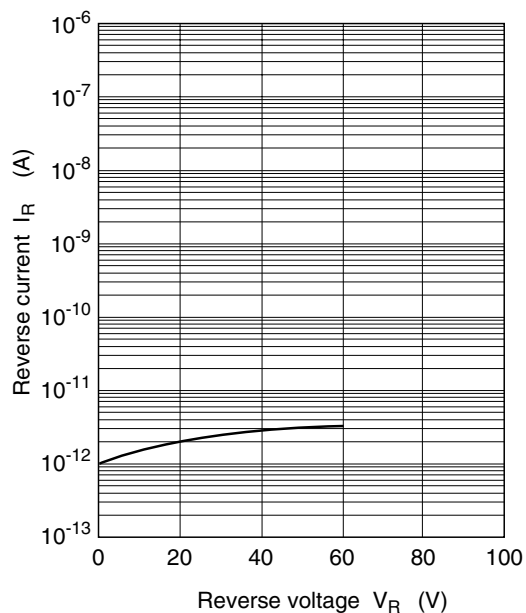


Fig.2 Reverse current vs. Reverse voltage

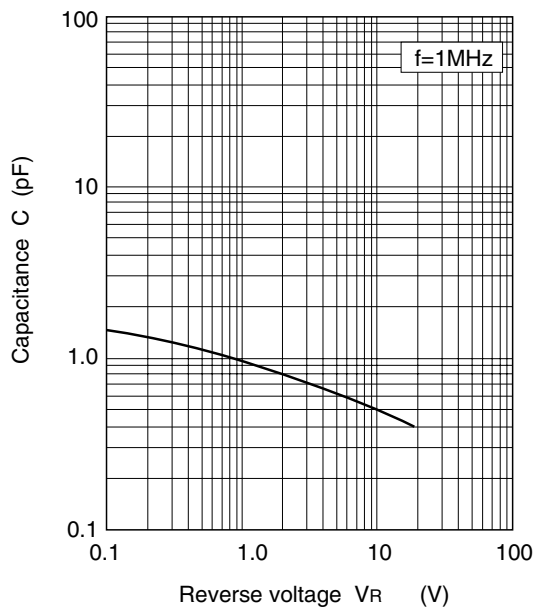


Fig.3 Capacitance vs. Reverse voltage

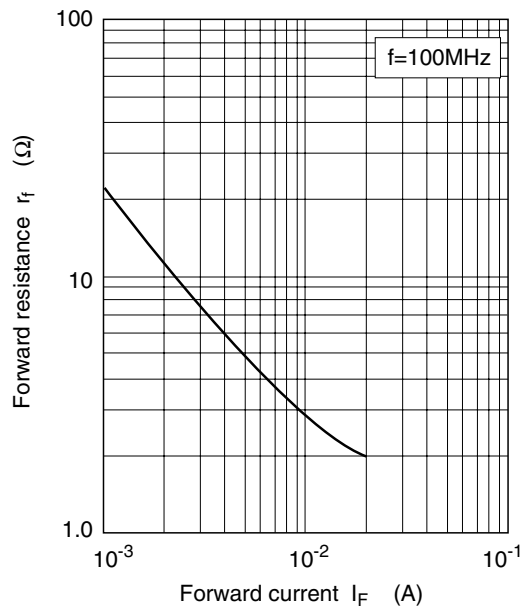
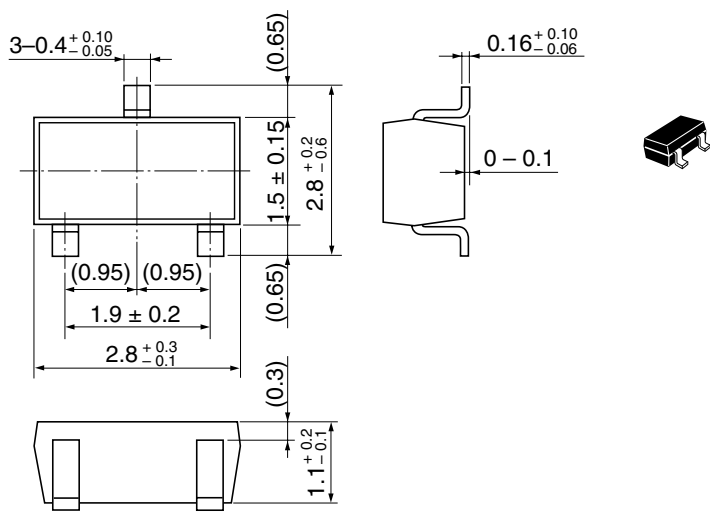


Fig.4 Forward resistance vs. Forward current

Package Dimensions

As of July, 2001  
Unit: mm



|                        |          |
|------------------------|----------|
| Hitachi Code           | MPAK     |
| JEDEC                  | —        |
| JEITA                  | Conforms |
| Mass (reference value) | 0.011 g  |

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