

# HVL142AM

## Silicon Epitaxial Planar Pin Diode for Antenna Switching

REJ03G0198-0200

Rev.2.00

Jan 19, 2006

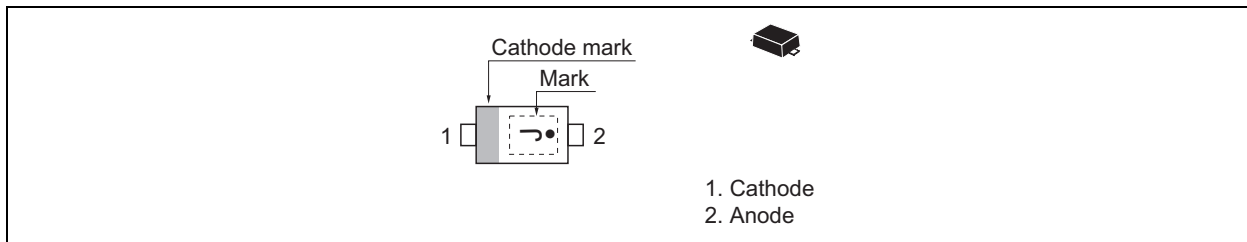
### Features

- An optimal solution for antenna switching in mobile phones.
- Low capacitance. ( $C = 0.35 \text{ pF max}$ )
- Low forward resistance. ( $r_f = 1.3 \Omega \text{ max}$ )
- Thin Extremely small Flat Lead Package (TEFP) is suitable for surface mount design.

### Ordering Information

| Type No. | Laser Mark | Package Name | Package Code |
|----------|------------|--------------|--------------|
| HVL142AM | J          | TEFP         | PUSF0002ZA-A |

### Pin Arrangement



## Absolute Maximum Ratings

(Ta = 25°C)

| Item                 | Symbol    | Value       | Unit |
|----------------------|-----------|-------------|------|
| Reverse voltage      | $V_R$     | 30          | V    |
| Forward current      | $I_F$     | 100         | mA   |
| Power dissipation    | $P_d$     | 100         | mW   |
| Junction temperature | $T_j$     | 125         | °C   |
| Storage temperature  | $T_{stg}$ | -55 to +125 | °C   |

## Electrical Characteristics

(Ta = 25°C)

| Item               | Symbol | Min | Typ | Max  | Unit     | Test Condition   |
|--------------------|--------|-----|-----|------|----------|--|
| Reverse current    | $I_R$  | —   | —   | 100  | nA       | $V_R = 30\text{ V}$  |
| Forward voltage    | $V_F$  | —   | —   | 1.0  | V        | $I_F = 10\text{ mA}$   |
| Capacitance        | C      | —   | —   | 0.35 | pF       | $V_R = 1\text{ V}, f = 1\text{ MHz}$                                     |
| Forward resistance | $r_f$  | —   | —   | 1.3  | $\Omega$ | $I_F = 10\text{ mA}, f = 100\text{ MHz}$                                 |
| ESD-Capability *1  | —      | 100 | —   | —    | V        | C = 200 pF, R = 0 $\Omega$ , Both forward and reverse direction 1 pulse. |

Notes: 1. Failure criterion ;  $I_R > 100\text{ nA}$  at  $V_R = 30\text{ V}$

2. For TAFP package, the material of lead is exposed for cutting plane. There for, soldering nature of lead tip part is considered as unquestioned. Please kindly consider soldering nature.

Main Characteristic

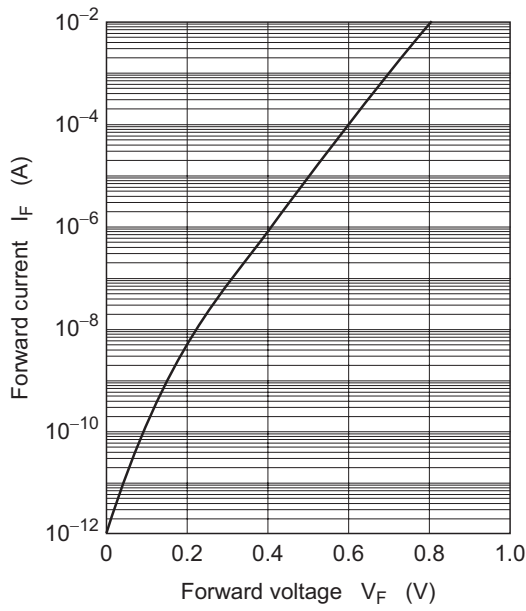


Fig.1 Forward current vs. Forward voltage

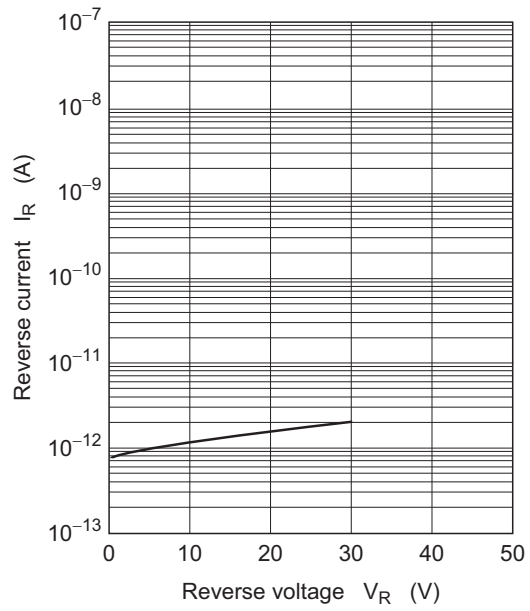


Fig.2 Reverse current vs. Reverse voltage

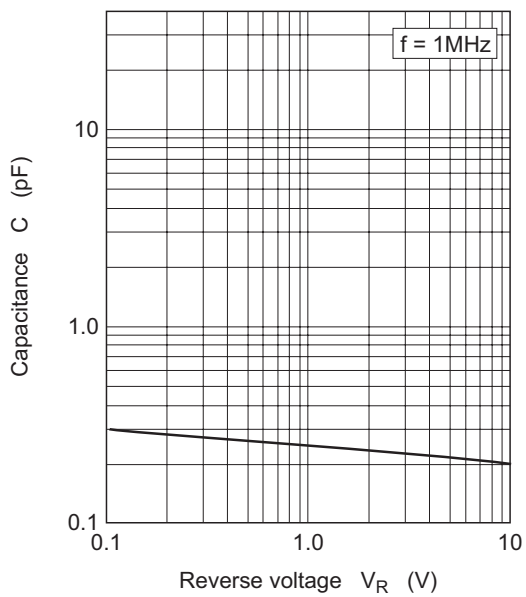


Fig.3 Capacitance vs. Reverse voltage

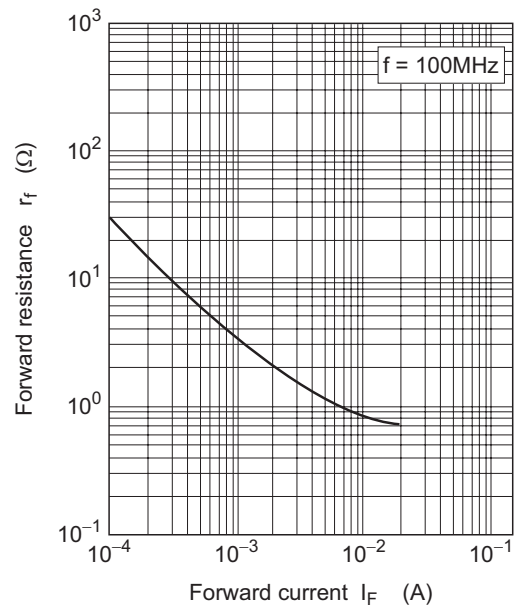


Fig.4 Forward resistance vs. Forward current

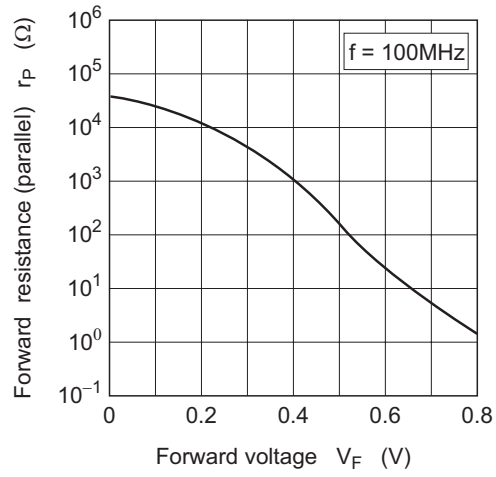
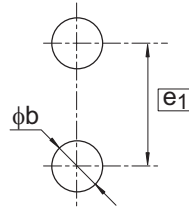
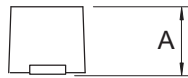
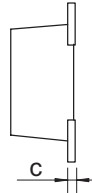
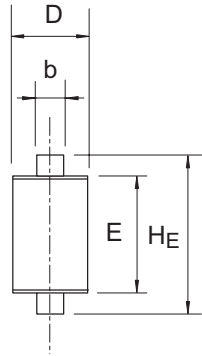


Fig.5 Forward resistance (parallel) vs. Forward voltage

Package Dimensions

|              |                    |              |               |            |
|--------------|--------------------|--------------|---------------|------------|
| Package Name | JEITA Package Code | RENESAS Code | Previous Code | MASS[Typ.] |
| TEFP         | —                  | PUSF0002ZA-A | TEFP / TEFPV  | 0.0006g    |



Pattern of terminal position areas

| Reference Symbol | Dimension in Millimeters |      |      |
|------------------|--------------------------|------|------|
|                  | Min                      | Nom  | Max  |
| A                | -                        | -    | 0.40 |
| b                | 0.25                     | 0.30 | 0.35 |
| c                | 0.08                     | 0.13 | 0.18 |
| D                | 0.55                     | 0.60 | 0.65 |
| E                | 0.75                     | 0.80 | 0.90 |
| HE               | 0.95                     | 1.00 | 1.05 |
| φb               | -                        | 0.40 | -    |
| e1               | -                        | 1.00 | -    |

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