

# HVB387BWK

Variable Capacitance Diode for VCO

## HITACHI

ADE-208-1174A (Z)

Rev. 1

Apr. 2001

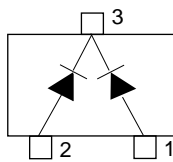
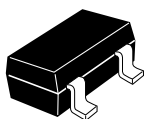
### Features

- Low capacitance and to be usable at GHz.
- High capacitance ratio. ( $n = 1.8 \text{ min}$ )
- Low series resistance. ( $r_s = 1.2 \Omega \text{ max}$ )
- CMPAK package is suitable for high density surface mounting and high speed assembly.

### Ordering Information

| Type No.  | Laser Mark | Package Code |
|-----------|------------|--------------|
| HVB387BWK | V5         | CMPAK        |

### Pin Arrangement



1. Anode
2. Anode
3. Cathode

## Absolute Maximum Ratings (Ta = 25°C)

| Item                 | Symbol    | Value       | Unit |
|----------------------|-----------|-------------|------|
| Reverse voltage      | $V_R$     | 15          | V    |
| 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   | $I_{R1}$ | —    | —   | 10   | nA       | $V_R = 15\text{ V}$                         |
|                   | $I_{R2}$ | —    | —   | 100  |          | $V_R = 15\text{ V}, T_a = 60^\circ\text{C}$ |
| Capacitance       | $C_1$    | 4.50 | —   | 5.00 | pF       | $V_R = 1\text{ V}, f = 1\text{ MHz}$        |
|                   | $C_3$    | 1.85 | —   | 2.80 |          | $V_R = 3\text{ V}, f = 1\text{ MHz}$        |
| Capacitance ratio | n        | 1.8  | —   | 2.6  | —        | $C_1 / C_3$                                 |
| Series resistance | $r_s$    | —    | —   | 1.2  | $\Omega$ | $V_R = 1\text{ V}, f = 470\text{ MHz}$      |

Main Characteristic

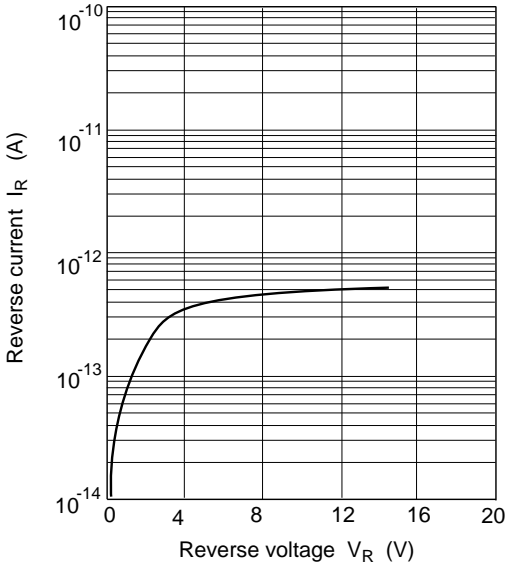


Fig.1 Reverse current vs. Reverse voltage

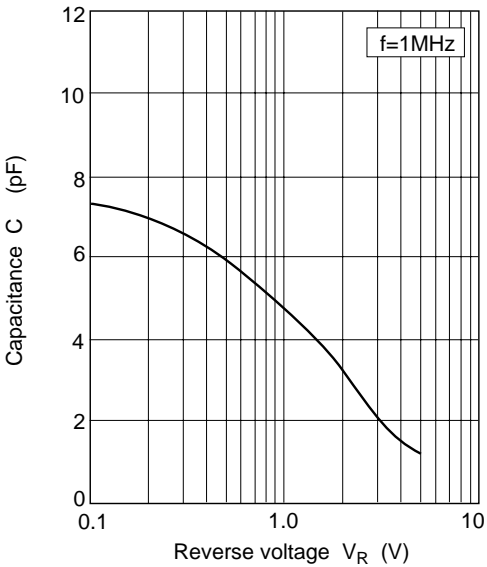


Fig.2 Capacitance vs. Reverse voltage

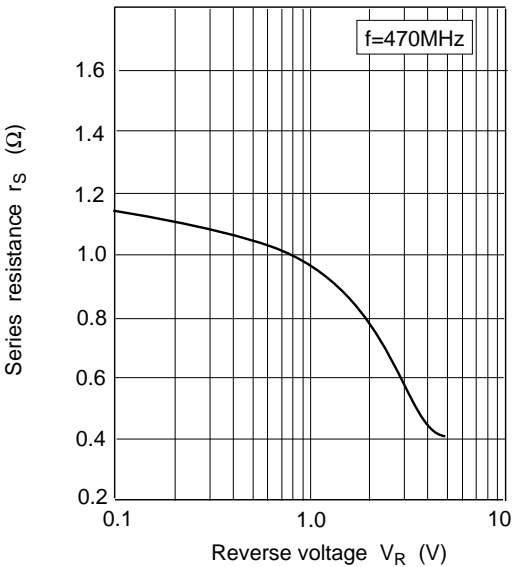


Fig.3 Series resistance vs. Reverse voltage

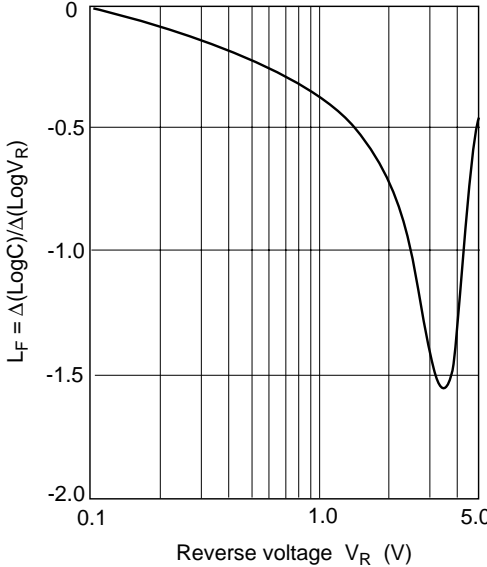


Fig.4 Linearity factor vs. Reverse voltage



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