

# HVL381C

## Variable Capacitance Diode for VCO

REJ03G0224-0200  
Rev.2.00  
Mar 14, 2006

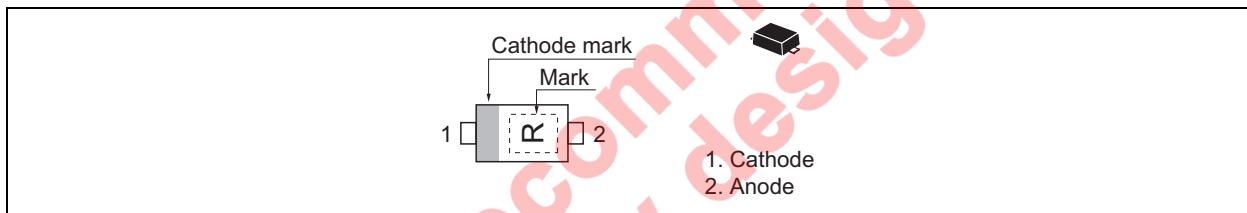
### Features

- High capacitance ratio. ( $n = 1.65$  min)
- Low series resistance. ( $r_s = 0.50 \Omega$  max)
- Extremely small Flat Lead Package (EFP) is suitable for surface mount design.

### Ordering Information

| Type No. | Laser Mark | Package Name | Package Code |
|----------|------------|--------------|--------------|
| HVL381C  | R          | EFP          | PXSF0002ZA-A |

### Pin Arrangement



## Absolute Maximum Ratings

(Ta = 25°C)

| Item                 | Symbol           | Value       | Unit |
|----------------------|------------------|-------------|------|
| Reverse voltage      | V <sub>R</sub>   | 15          | V    |
| Junction temperature | T <sub>j</sub>   | 125         | °C   |
| Storage temperature  | T <sub>stg</sub> | -55 to +125 | °C   |

## Electrical Characteristics

(Ta = 25°C)

| Item              | Symbol          | Min   | Typ | Max   | Unit | Test Condition                    |
|-------------------|-----------------|-------|-----|-------|------|-----------------------------------|
| Reverse current   | I <sub>R1</sub> | —     | —   | 10    | nA   | V <sub>R</sub> = 15 V             |
|                   | I <sub>R2</sub> | —     | —   | 100   |      | V <sub>R</sub> = 15 V, Ta = 60°C  |
| Capacitance       | C <sub>1</sub>  | 10.2  | —   | 10.8  | pF   | V <sub>R</sub> = 1 V, f = 1 MHz   |
|                   | C <sub>3</sub>  | 5.90  | —   | 6.35  |      | V <sub>R</sub> = 3 V, f = 1 MHz   |
| Capacitance ratio | n               | 1.650 | —   | 1.785 | —    | C <sub>1</sub> / C <sub>3</sub>   |
| Series resistance | r <sub>s</sub>  | —     | —   | 0.50  | Ω    | V <sub>R</sub> = 1 V, f = 470 MHz |

Note: For EFP 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.

Not recommended for new design

Main Characteristic

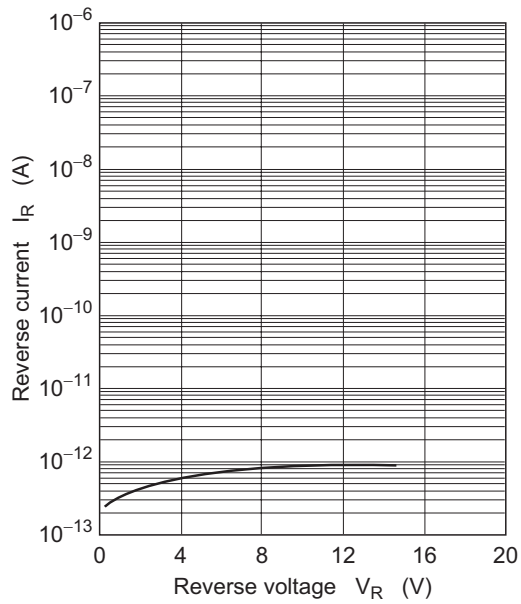


Fig.1 Reverse current vs. Reverse voltage

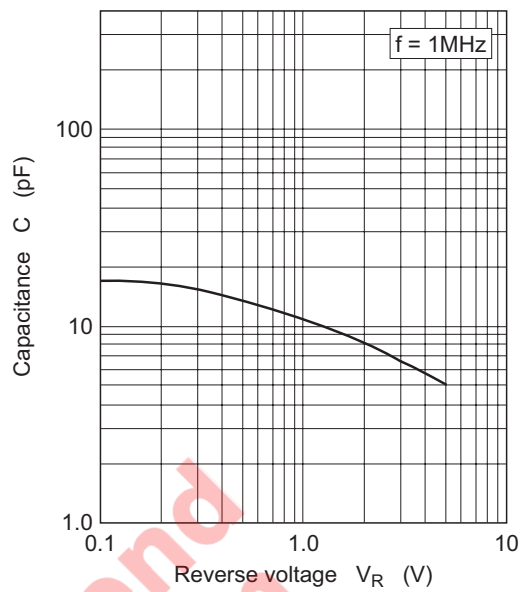


Fig.2 Capacitance vs. Reverse voltage

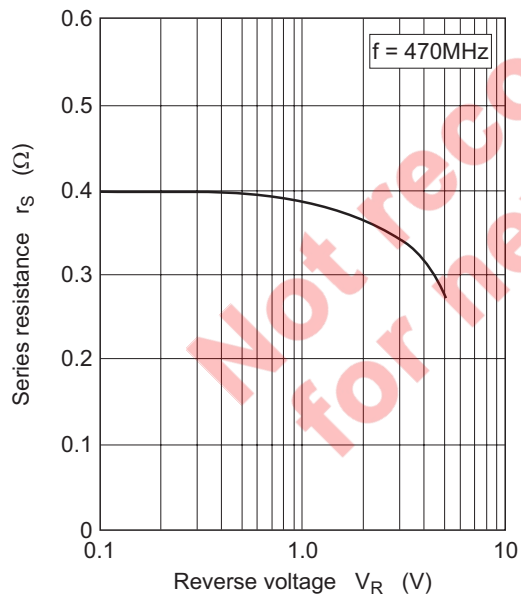
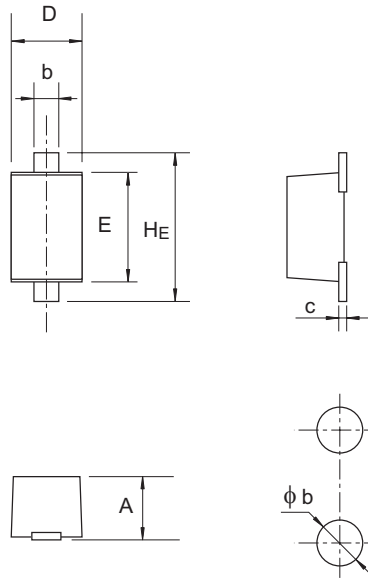


Fig.3 Series resistance vs. Reverse voltage

Package Dimensions

|              |                    |              |               |            |
|--------------|--------------------|--------------|---------------|------------|
| Package Name | JEITA Package Code | RENESAS Code | Previous Code | MASS[Typ.] |
| EFP          | —                  | PXSF0002ZA-A | EFP / EFPV    | 0.0007g    |



Pattern of terminal position areas

| Reference Symbol | Dimension in Millimeters |      |      |
|------------------|--------------------------|------|------|
|                  | Min                      | Nom  | Max  |
| A                | 0.44                     | 0.47 | 0.50 |
| 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 | 0.85 |
| HE               | 0.95                     | 1.00 | 1.05 |
| phi b            | —                        | 0.40 | —    |
| e1               | —                        | 1.00 | —    |

Not recommend for new design

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