

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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# HVD381B

Variable Capacitance Diode for VCO



ADE-208-1409 (Z)

Rev. 0  
Apr. 2001

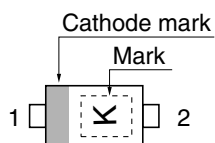
## Features

- High capacitance ratio. ( $n = 1.65$  min)
- Low series resistance. ( $r_s = 0.5 \Omega$  max)
- Super small Flat Package (SFP) is suitable for surface mount design.

## Ordering Information

Type No.	Laser Mark	Package Code
HVD381B	K	SFP

## Pin Arrangement



1. Cathode
2. Anode

**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	$C_1$	10.0	—	11.0	pF	$V_R = 1\text{ V}$ , $f = 1\text{ MHz}$
	$C_3$	5.8	—	6.4		$V_R = 3\text{ V}$ , $f = 1\text{ MHz}$
Capacitance ratio	n	1.65	—	—	—	$C_1 / C_3$
Series resistance	$r_s$	—	—	0.5	$\Omega$	$V_R = 1\text{ V}$ , $f = 470\text{ MHz}$

Note: Please do not use the soldering iron due to avoid high stress to the SFP package.

Main Characteristic

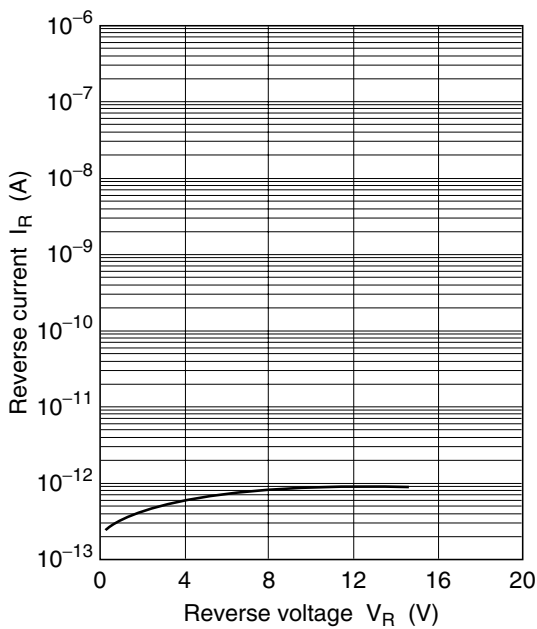


Fig.1 Reverse current vs. Reverse voltage

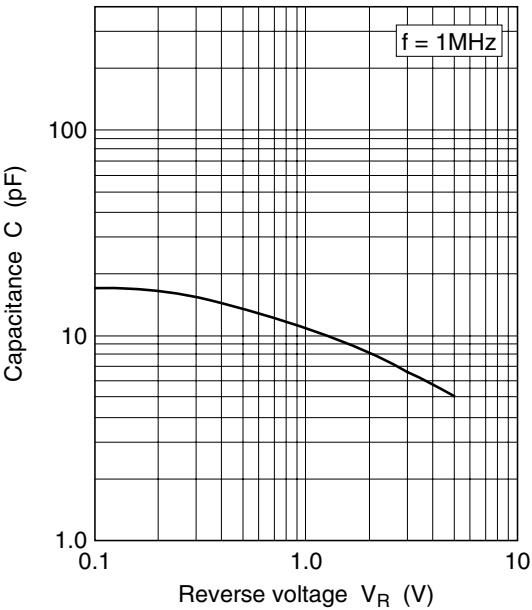


Fig.2 Capacitance vs. Reverse voltage

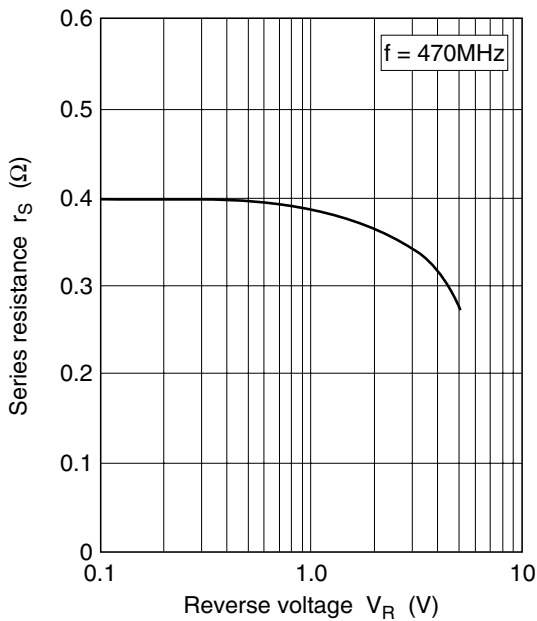


Fig.3 Series resistance vs. Reverse voltage

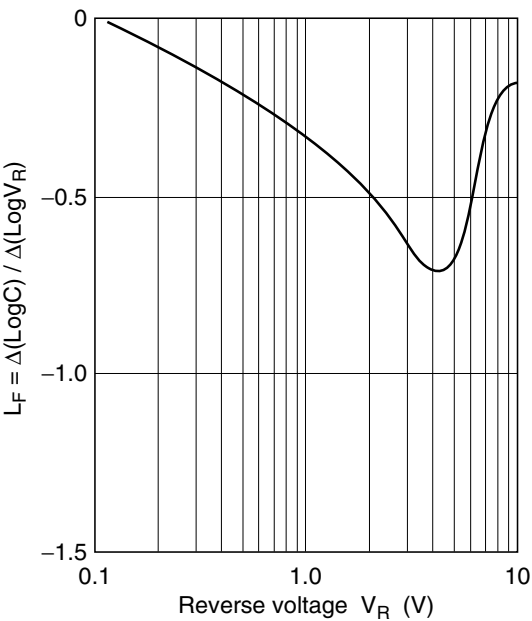
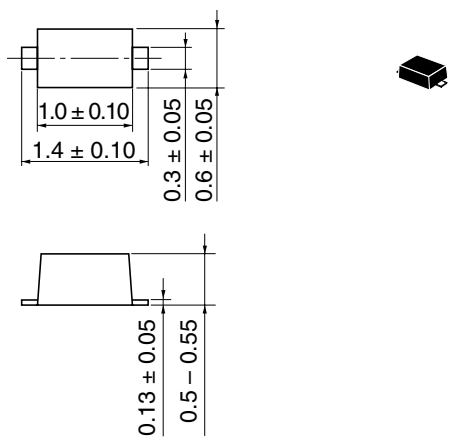


Fig.4  $L_F$  vs. Reverse voltage

Package Dimensions

As of January, 2001  
Unit: mm



Hitachi Code	SFP
JEDEC	—
EIAJ	—
Mass (reference value)	0.0010 g

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