

To our customers,

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## Old Company Name in Catalogs and Other Documents

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April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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Not recommended  
for new design

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# HVD380B

## Variable Capacitance Diode for VCO

REJ03G0504-0200  
Rev.2.00  
Mar 27, 2006

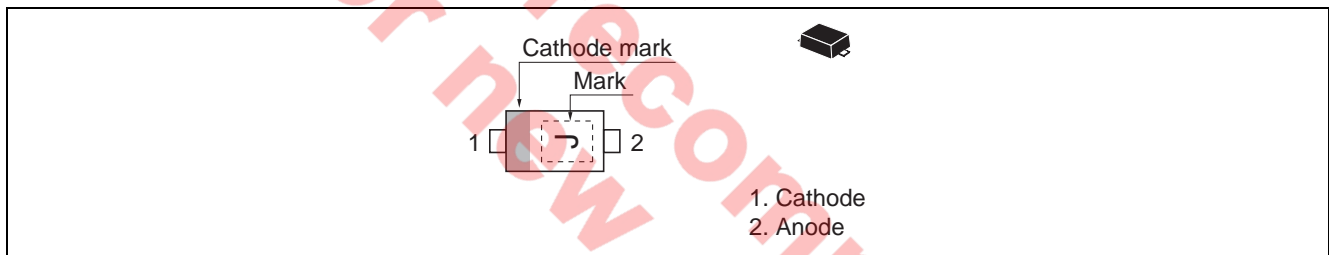
### Features

- High capacitance ratio. ( $n = 1.70$  min)
- Low series resistance. ( $r_s = 0.80 \Omega$  max)
- Super small Flat Lead Package (SFP) is suitable for surface mount design.

### Ordering Information

Type No.	Laser Mark	Package Name	Package Code
HVD380B	J	SFP	PUSF0002ZB-A

### Pin Arrangement



## 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	$C_1$	2.880	—	3.120	pF	$V_R = 1\text{ V}, f = 1\text{ MHz}$
	$C_3$	1.660	—	1.795		$V_R = 3\text{ V}, f = 1\text{ MHz}$
	$C_4$	1.360	—	1.471		$V_R = 4\text{ V}, f = 1\text{ MHz}$
Capacitance ratio	$n_1$	1.70	—	1.84	—	$C_1 / C_3$
	$n_2$	2.08	—	2.25		$C_1 / C_4$
Series resistance	$r_s$	—	—	0.80	$\Omega$	$V_R = 1\text{ V}, f = 470\text{ MHz}$

Note: For SFP 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

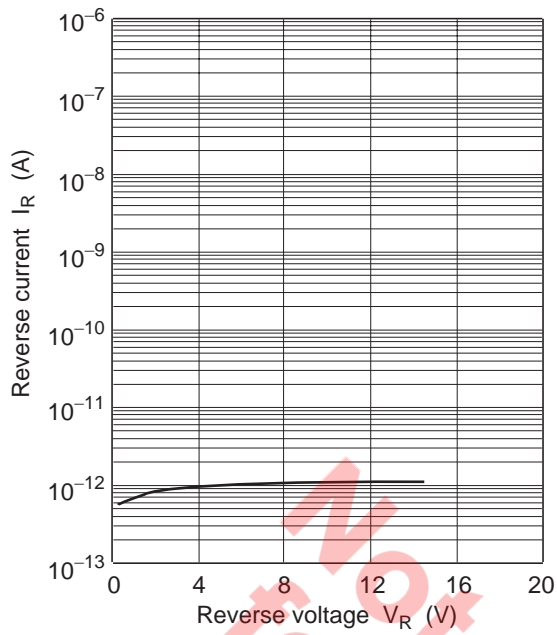


Fig.1 Reverse current vs. Reverse voltage

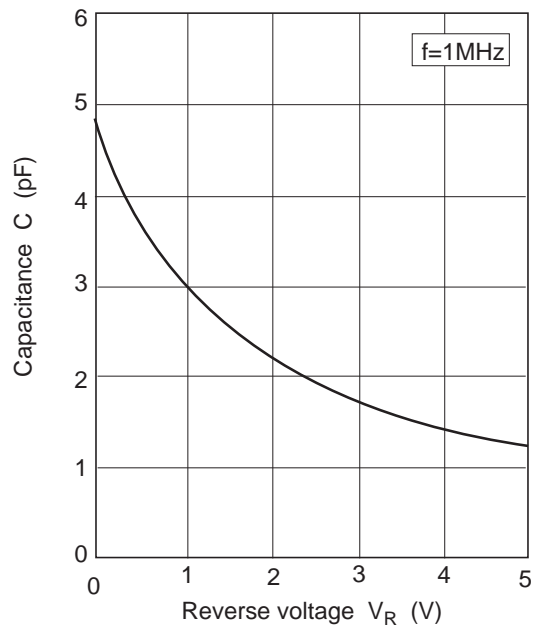


Fig.2 Capacitance vs. Reverse voltage

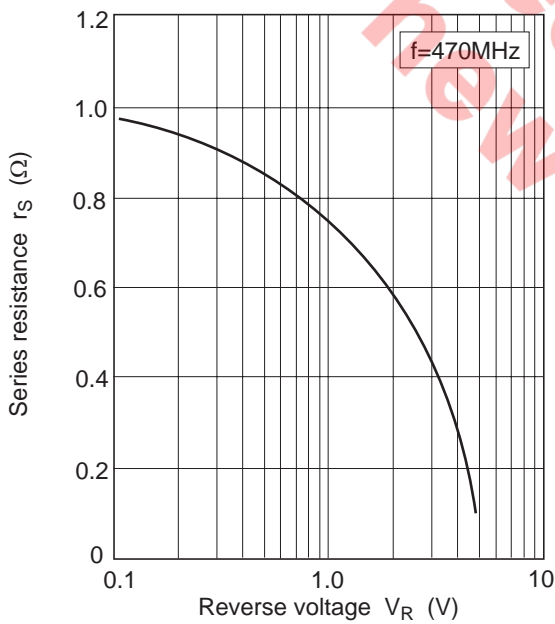


Fig.3 Series resistance vs. Reverse voltage

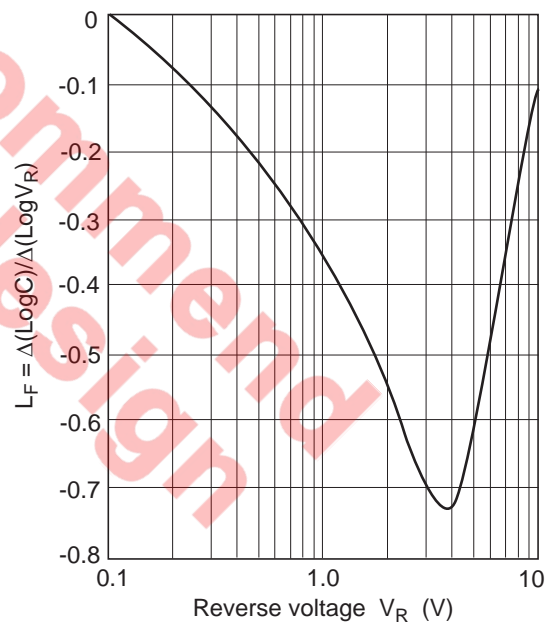
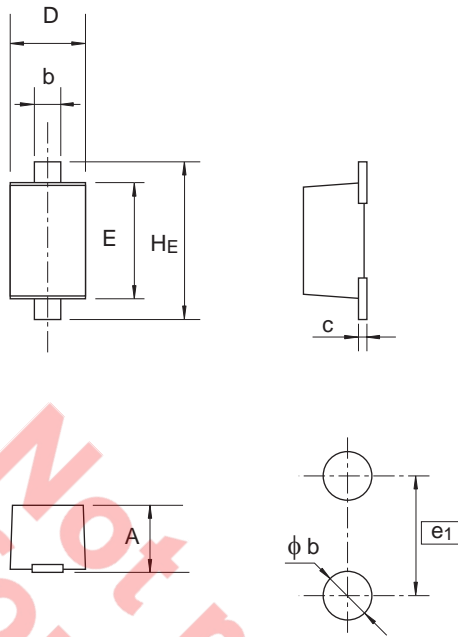


Fig.4  $L_F$  vs. Reverse voltage

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
SFP	—	PUSF0002ZB-A	SFP / SFPV	0.0010g



Pattern of terminal position areas

Reference Symbol	Dimension in Millimeters		
	Min	Nom	Max
A	0.50	—	0.55
b	0.25	0.30	0.35
c	0.08	0.13	0.18
D	0.55	0.60	0.65
E	0.90	1.00	1.10
$H_E$	1.30	1.40	1.50
$\phi b$	—	0.50	—
$e_1$	—	1.40	—

Not recommend for new design

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