

# HVU315

## Variable Capacitance Diode for Wide Band tuner

# HITACHI

Preliminary  
Rev. 3  
May. 1993

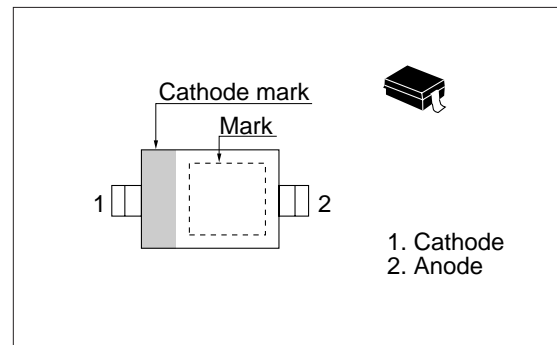
### Features

- High capacitance ratio. ( $n=10.3\text{min}$ )
- Low series resistance. ( $r_s=0.7\Omega\text{max}$ )
- Ultra small Resin Package (URP) is suitable for surface mount design.

### Ordering Information

Type No.	Laser Mark	Package Code
HVU315	K	URP

### Outline



### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Value	Unit
Reverse voltage	$V_R$	30	V
Junction temperature	$T_j$	125	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-55 to +125	$^\circ\text{C}$

### Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse current	$I_R$	—	—	10	nA	$V_R = 30\text{ V}$
Capacitance	$C_2$	27.6	—	32.1	pF	$V_R = 2\text{ V}, f = 1\text{ MHz}$
	$C_{25}$	2.67	—	3.02		$V_R = 25\text{ V}, f = 1\text{ MHz}$
Capacitance ratio	$n$	10.3	—	—	—	$C_2 / C_{25}$
Series resistance	$r_s$	—	—	0.70	$\Omega$	$V_R = 5\text{ V}, f = 470\text{ MHz}$
Matching error	$\Delta C/C^*$	—	—	2.0	%	$V_R = 2\sim 25\text{ V}$

\* A set of HVU315 is of uniform C-V characteristics.

Measure max. value and min. value of capacitance at each bias point of  $V_R=2\text{V}$  through  $25\text{V}$ .

Calculate Matching Error, 
$$\Delta C/C = \frac{(C_{\text{max}} - C_{\text{min}})}{C_{\text{min}}} \times 100 (\%)$$

\*\* Each group shall uniform a multiple of 4 diodes.

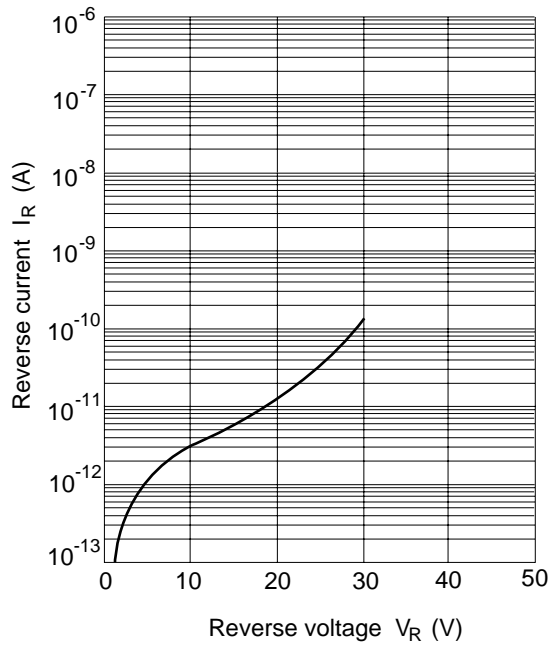


Fig.1 Reverse current Vs. Reverse voltage

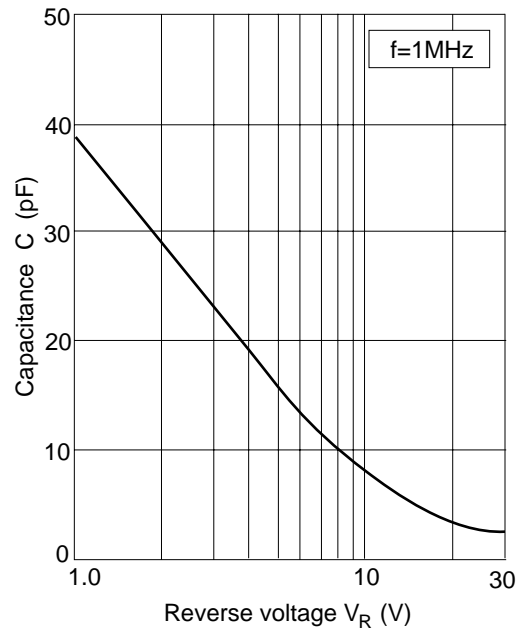


Fig.2 Capacitance Vs. Reverse voltage

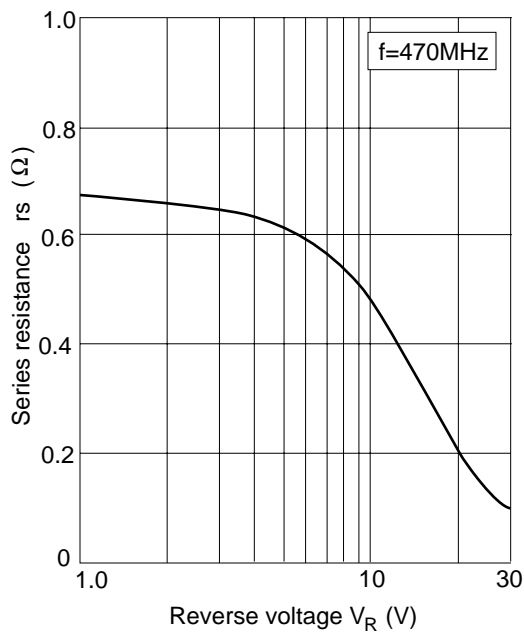


Fig.3 Series resistance Vs. Reverse voltage

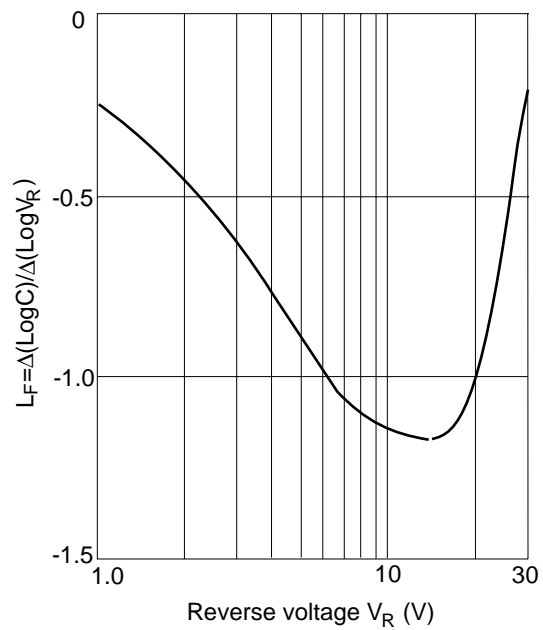


Fig.4 Linearity factor Vs. Reverse voltage

Package Dimensions

Unit: mm

