

HVU314 Variable Capacitance Diode for BS tuner

HITACHI

Preliminary
Rev. 2
Mar. 1994

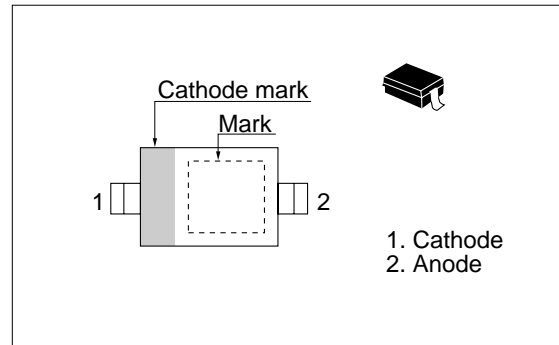
Features

- Low series resistance. ($r_s=1.05\Omega$ max)
- Ultra small Resin Package (URP) is suitable for surface mount design.

Ordering Information

Type No.	Laser Mark	Package Code
HVU314	P	URP

Outline



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

Item	Symbol	Value	Unit
Reverse voltage	V_R	32	V
Junction temperature	T_j	125	$^\circ\text{C}$
Storage temperature	T_{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_{R1}	—	—	10	nA	$V_R = 32\text{ V}$
	I_{R2}	—	—	100		$V_R = 32\text{ V}, T_a = 60^\circ\text{C}$
Capacitance	C_1	4.40	—	6.40	pF	$V_R = 1\text{ V}, f = 1\text{ MHz}$
	C_{10}	0.86	—	1.35		$V_R = 10\text{ V}, f = 1\text{ MHz}$
	C_{30}	0.47	—	0.73		$V_R = 30\text{ V}, f = 1\text{ MHz}$
Capacitance ratio	n	7.0	—	—	—	C_1 / C_{30}
Series resistance	r_s	—	—	1.05	Ω	$V_R = 5\text{ V}, f = 470\text{ MHz}$
Matching error	$\Delta C/C^*$	—	—	6.0	%	$V_R = 1\sim 30\text{ V}$

* A set of HVU314 is of uniform C-V characteristics.

Measure max. value and min. value of capacitance at each bias point of $V_R=1\text{V}$ and 30V .

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.

HVU314

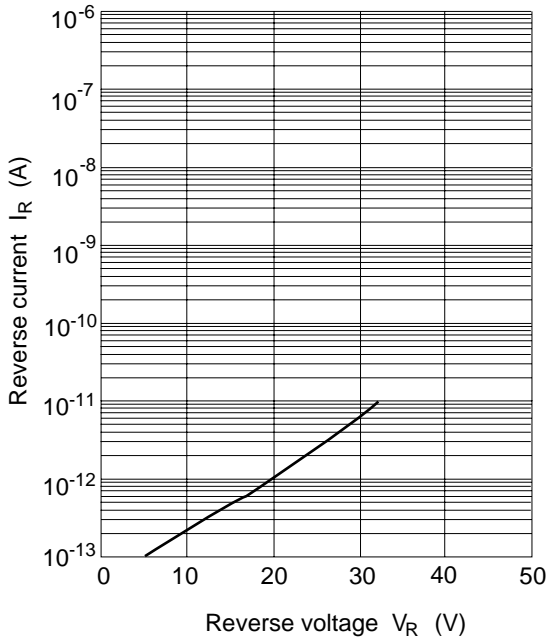


Fig.1 Reverse current Vs. Reverse voltage

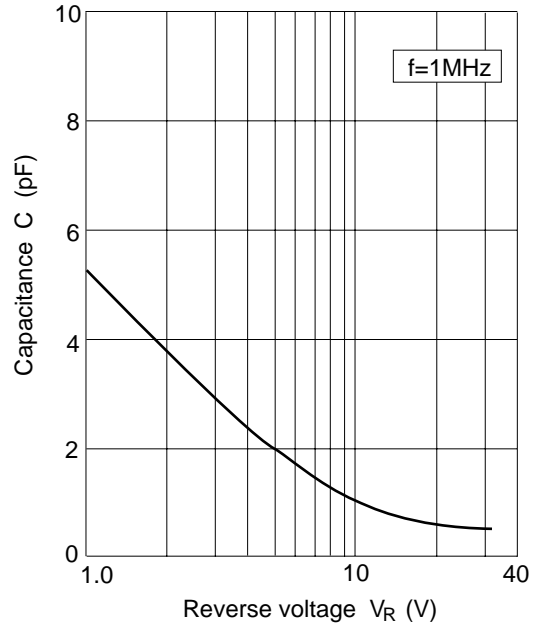


Fig.2 Capacitance Vs. Reverse voltage

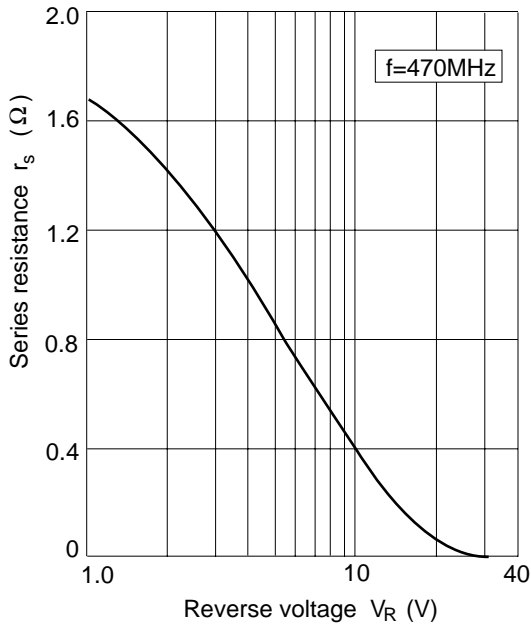


Fig.3 Series resistance Vs. Reverse voltage

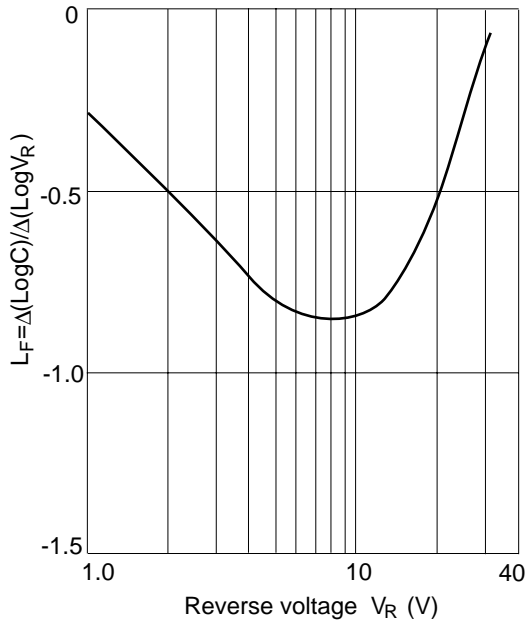


Fig.4 Linearity factor Vs. Reverse voltage

Package Dimensions

Unit: mm

