

HVU307 Variable Capacitance Diode for VHF tuner

HITACHI

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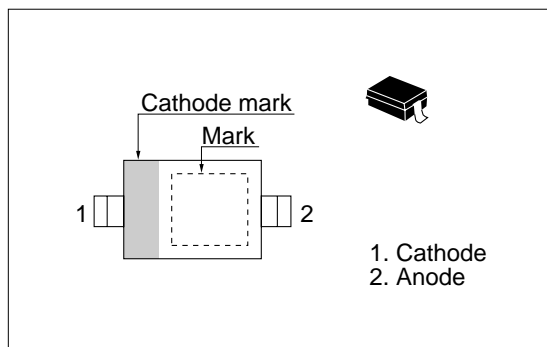
Features

- High capacitance ratio. ($n = 12.0\text{min}$)
- Low series resistance. ($r_s = 0.85\Omega\text{max}$)
- Ultra small Resin Package (URP) is suitable for surface mount design.

Ordering Information

Type No.	Laser Mark	Package Code
HVU307	7	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_{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	$V_R = 30\text{ V}$
	I_{R2}	—	—	100		$V_R = 30\text{ V}, T_a = 60^\circ\text{C}$
Capacitance	C_2	32.2	—	37.5	pF	$V_R = 2\text{ V}, f = 1\text{ MHz}$
	C_{25}	2.57	—	3.00		$V_R = 25\text{ V}, f = 1\text{ MHz}$
Capacitance ratio	n	12.0	12.5	—	—	C_2 / C_{25}
Series resistance	r_s	—	—	0.85	Ω	$V_R = 5\text{ V}, f = 470\text{ MHz}$
Matching error	$\Delta C/C^*$	—	—	2.0	%	$V_R = 2\sim 25\text{ V}$

* A set of HVU307 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 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.

HVU307

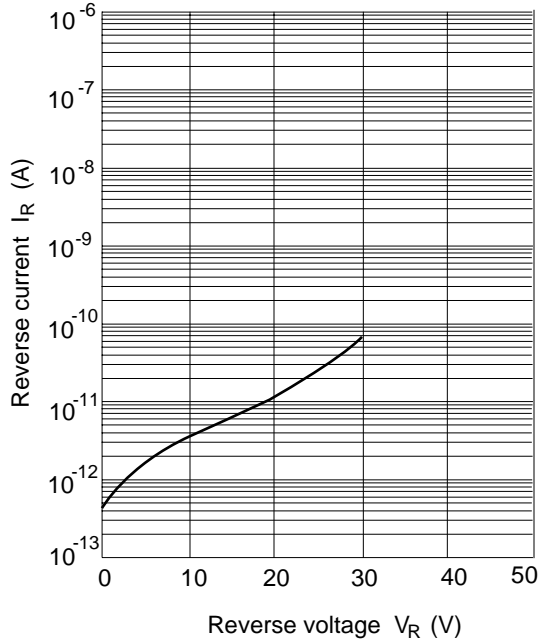


Fig.1 Reverse current Vs. Reverse voltage

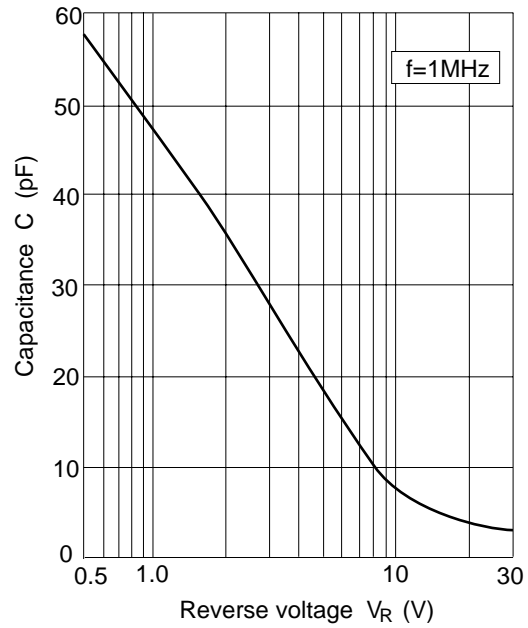


Fig.2 Capacitance Vs. Reverse voltage

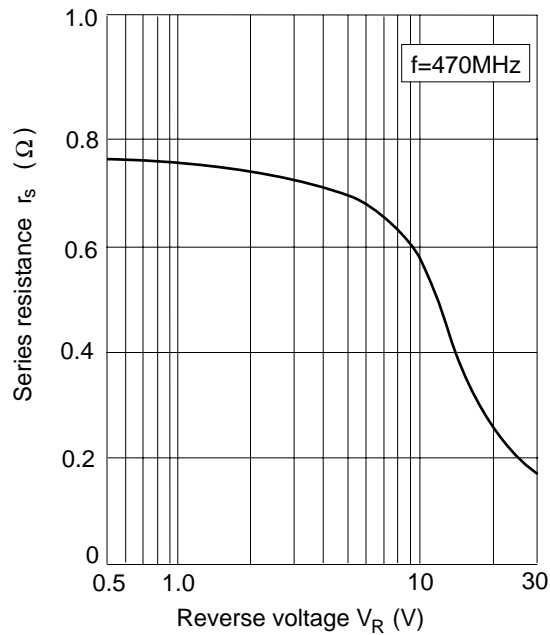


Fig.3 Series resistance Vs. Reverse voltage

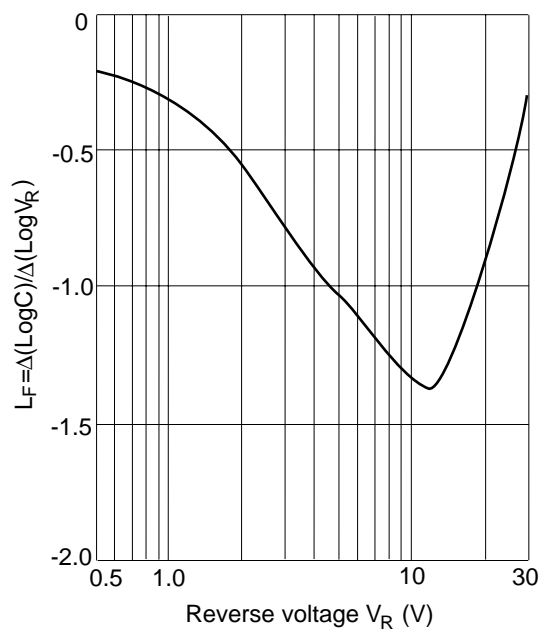


Fig.4 Linearity factor Vs. Reverse voltage

Package Dimensions

Unit: mm

