

HVU365

Variable Capacitance Diode for VCXO

HITACHI

Rev. 0
Jun. 1995

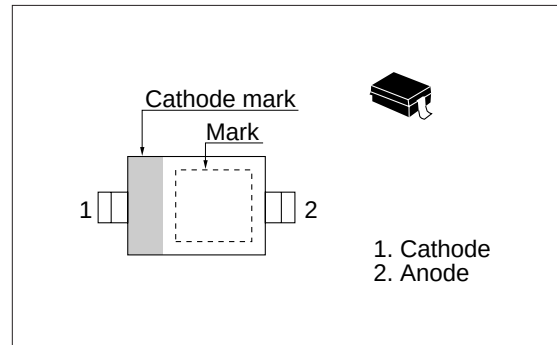
Features

- High capacitance ratio and good C-V linearity.
- To be usable at low voltage.
- Ultra small Resin Package (URP) is suitable for surface mount design.

Ordering Information

Type No.	Laser Mark	Package Code
HVU365	V6	URP

Outline



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	$V_R = 10\text{ V}$
	I_{R2}	—	—	100		$V_R = 10\text{ V}$, $T_a = 60\text{ °C}$
Capacitance	C_1	27.05	—	28.55	pF	$V_R = 1\text{ V}$, $f = 1\text{ MHz}$
	C_4	6.05	—	7.55		$V_R = 4\text{ V}$, $f = 1\text{ MHz}$
Capacitance ratio	n	3.0	—	—	—	C_1 / C_4
Series resistance	r_s	—	—	1.5	Ω	$V_R = 4\text{ V}$, $f = 100\text{ MHz}$
ESD-Capability	—	80	—	—	V	* $C = 200\text{ pF}$, Both forward and reverse direction 1 pulse.

* Failure criterion ; $I_R \geq 20\text{ nA}$ at $V_R = 10\text{ V}$

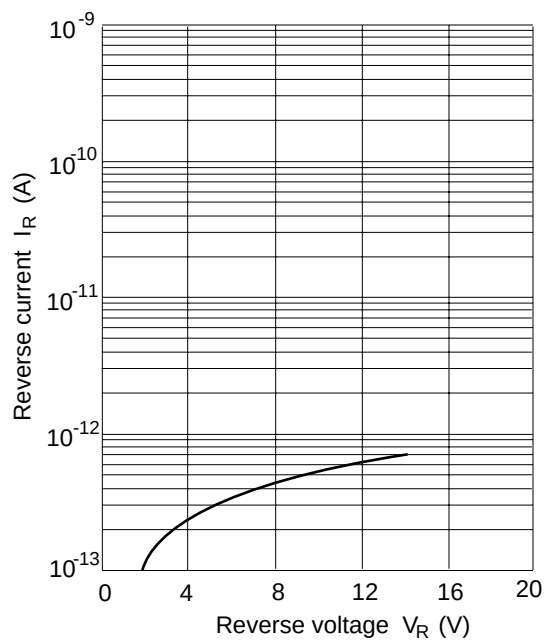


Fig.1 Reverse current Vs. Reverse voltage

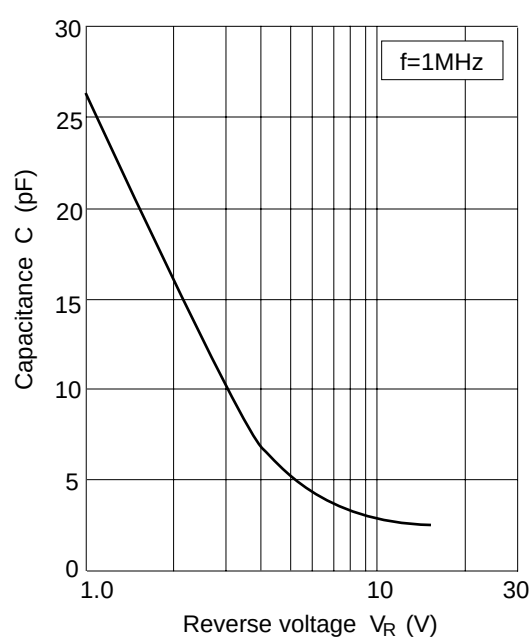
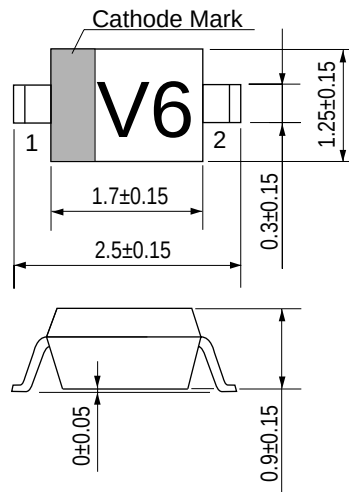


Fig.2 Capacitance Vs. Reverse voltage

Package Dimensions

Unit: mm



- 1 Cathode
- 2 Anode

HITACHI Code	URP
JEDEC Code	—
EIAJ Code	—
Weight (g)	0.004

HVU367

Variable Capacitance Diode for VCO

HITACHI

Rev. 0
Jun. 1995

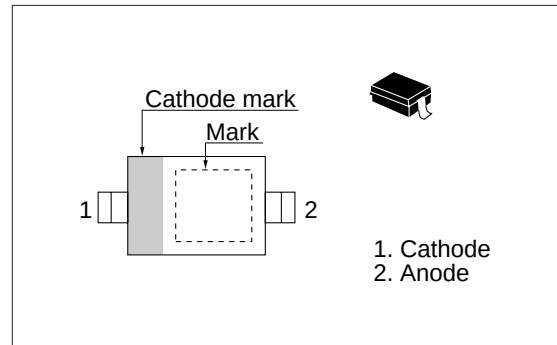
Features

- Low series resistance. ($r_s=0.4\Omega$ max)
- Ultra small Resin Package (URP) is suitable for surface mount design.

Ordering Information

Type No.	Laser Mark	Package Code
HVU367	V7	URP

Outline



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

Item	Symbol	Value	Unit
Reverse voltage	V_R	10	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	$V_R = 10\text{ V}$
	I_{R2}	—	—	100		$V_R = 10\text{ V}$, $T_a = 60^\circ\text{C}$
Capacitance	$C_{0.5}$	—	19	—	pF	$V_R = 0.5\text{ V}$, $f = 1\text{ MHz}$
	C_1	14.9	—	16.4		$V_R = 1\text{ V}$, $f = 1\text{ MHz}$
	C_2	—	11.6	—		$V_R = 2\text{ V}$, $f = 1\text{ MHz}$
	$C_{2.5}$	—	10.5	—		$V_R = 2.5\text{ V}$, $f = 1\text{ MHz}$
	C_4	6.7	—	8.2		$V_R = 4\text{ V}$, $f = 1\text{ MHz}$
	n_1	—	1.8	—		$C_{0.5} / C_{2.5}$
Capacitance ratio	n_2	1.3	—	—	—	C_1 / C_2
	n_3	1.8	—	—	—	C_1 / C_4
Series resistance	r_s	—	—	0.4	Ω	$V_R = 1\text{ V}$, $f = 470\text{ MHz}$

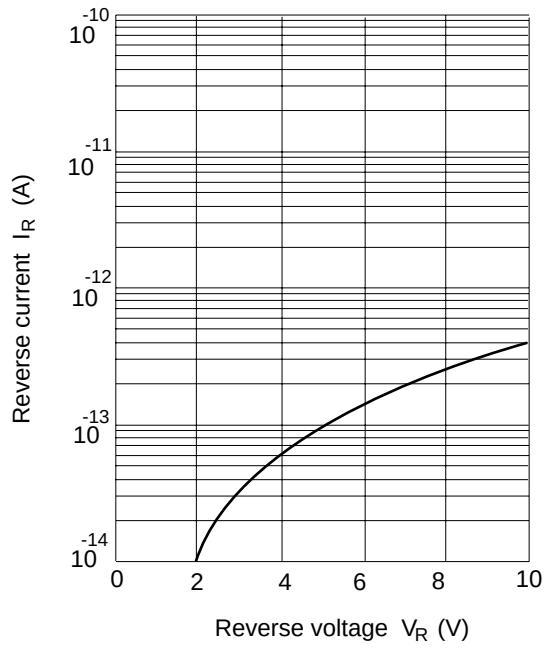


Fig.1 Reverse current Vs. Reverse voltage

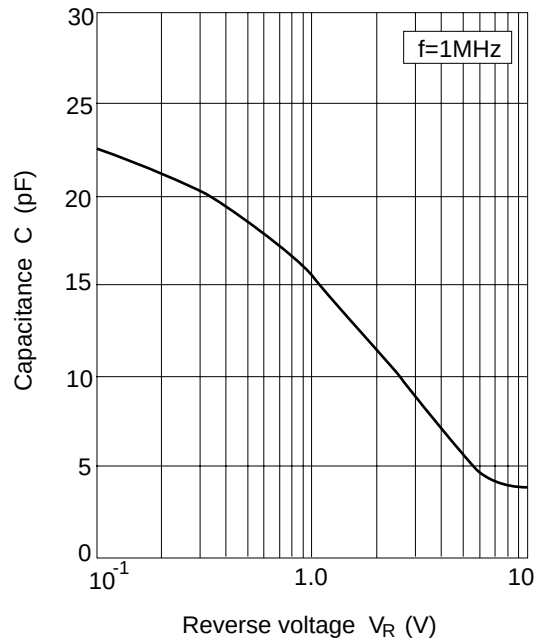


Fig.2 Capacitance Vs. Reverse voltage

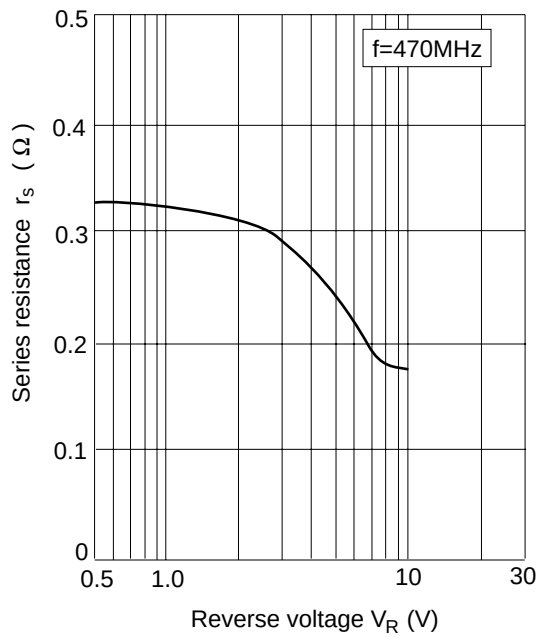


Fig.3 Series resistance Vs. Reverse voltage

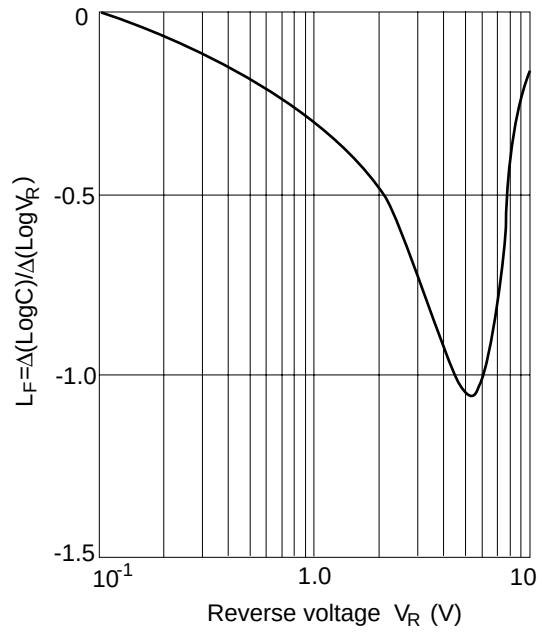
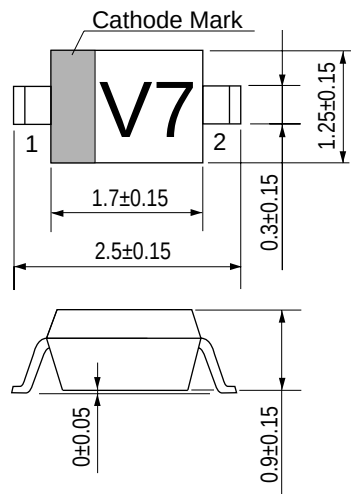


Fig.4 Linearity factor Vs. Reverse voltage

Package Dimensions

Unit: mm



- 1 Cathode
- 2 Anode

HITACHI Code	URP
JEDEC Code	—
EIAJ Code	—
Weight (g)	0.004