

ADE-208-371(Z)

# HVU365 Variable Capacitance Diode for VCXO

## HITACHI

Rev. 0  
Jun. 1995

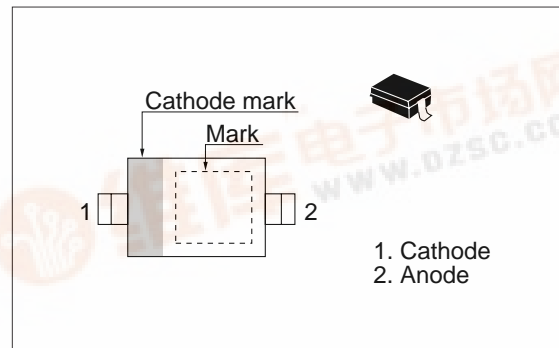
### Features

- 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)

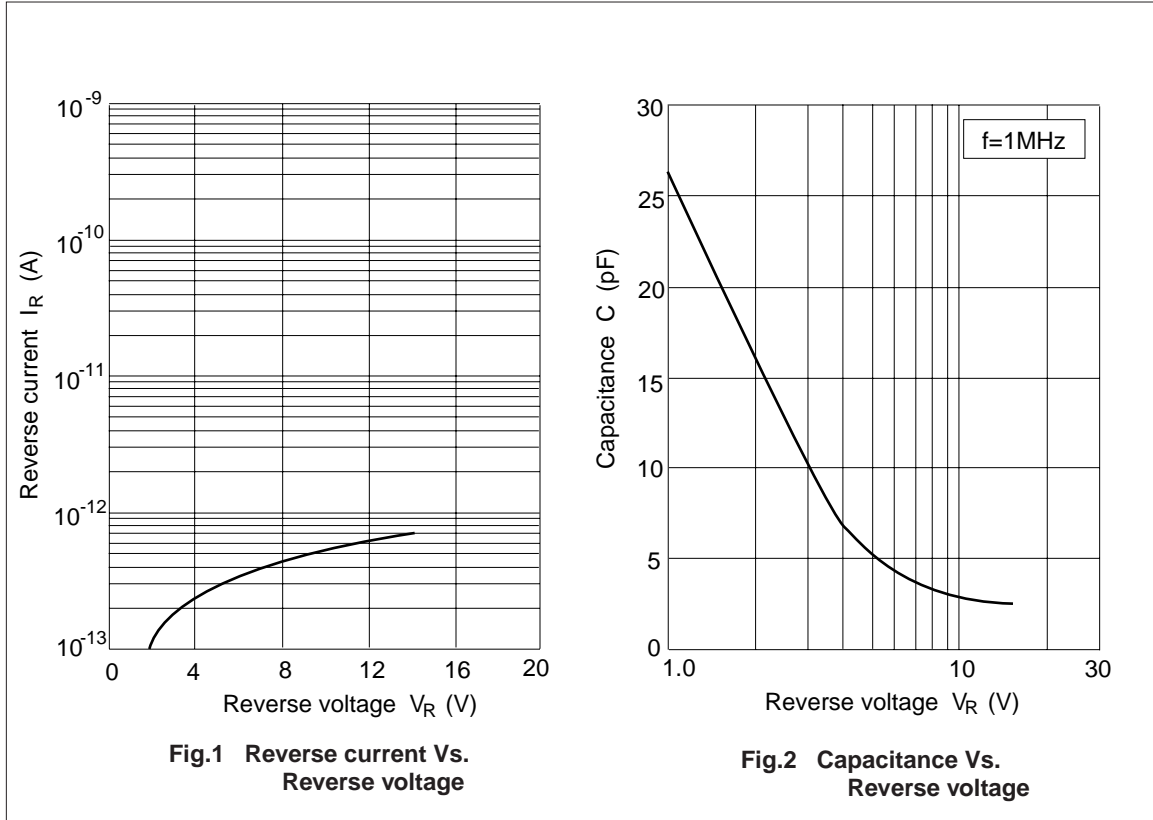
Item	Symbol	Value	Unit
Reverse voltage	$V_R$	15	V
Junction temperature	$T_j$	125	°C
Storage temperature	$T_{stg}$	-55 to +125	°C

### 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	$\Omega$	$V_R = 4\text{ V}, f = 100\text{ MHz}$
ESD-Capability	—	80	—	—	V	* $C=200\text{ pF}$ , Both forward and reverse direction 1 pulse.

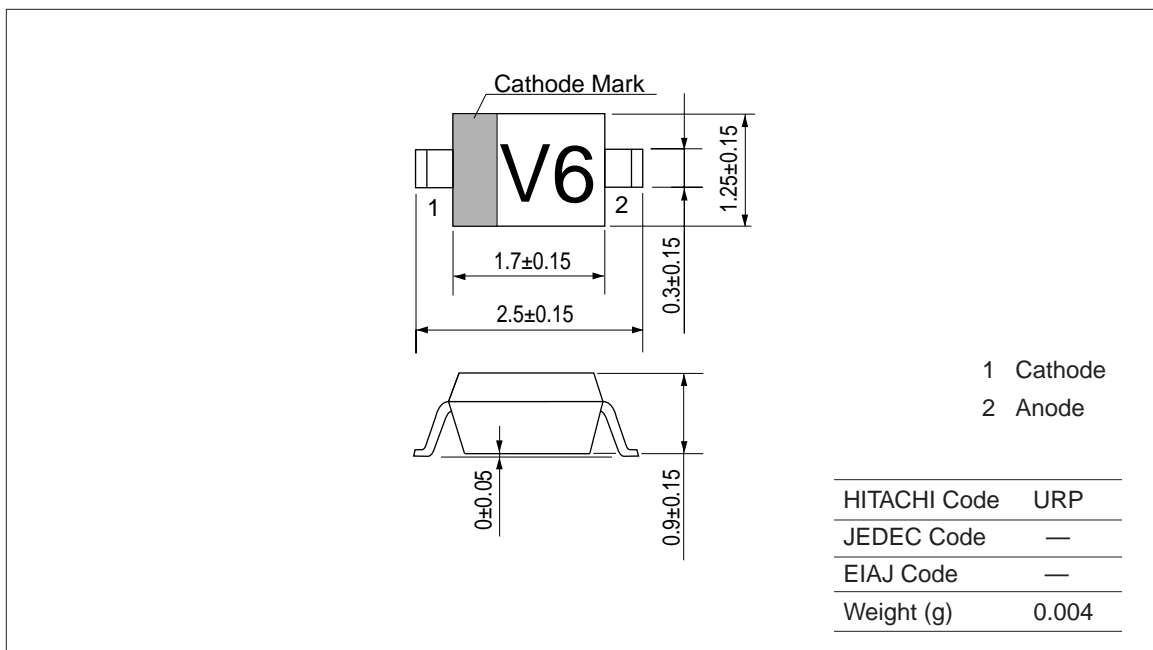
\* Failure criterion ;  $I_R \geq 20\text{ nA}$  at  $V_R = 10\text{ V}$

# HVU365



## Package Dimensions

Unit: mm



# HVU367

## Variable Capacitance Diode for VCO

# HITACHI

Rev. 0  
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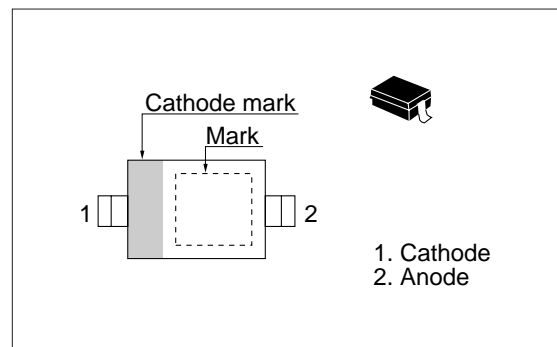
### Features

- 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

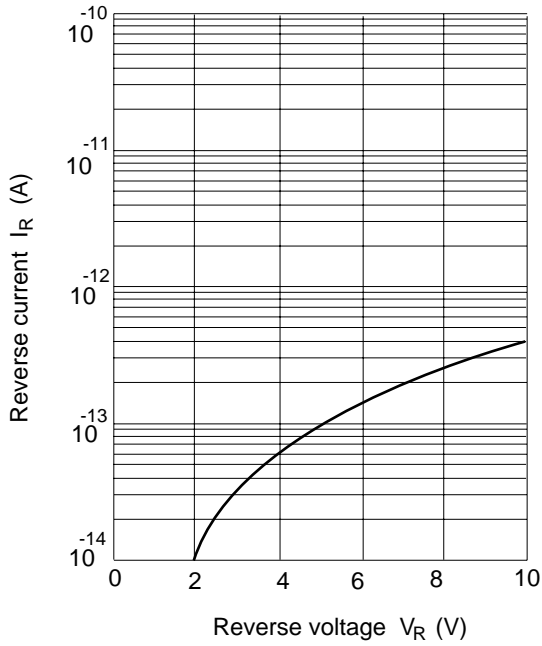


### Absolute Maximum Ratings (Ta = 25°C)

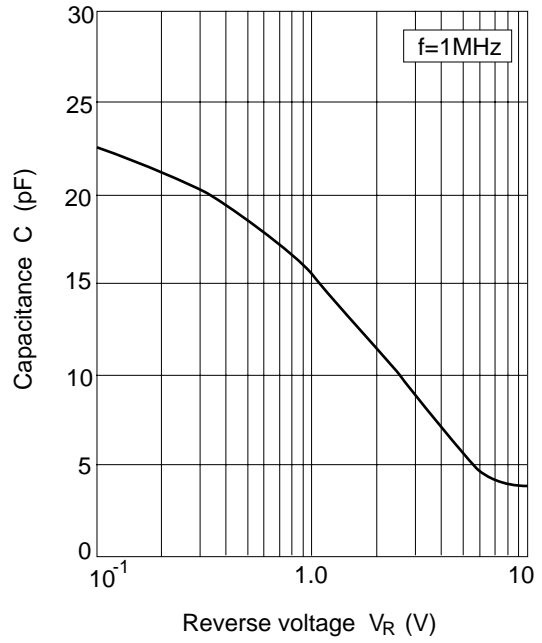
Item	Symbol	Value	Unit
Reverse voltage	$V_R$	10	V
Junction temperature	$T_j$	125	°C
Storage temperature	$T_{stg}$	-55 to +125	°C

### Electrical Characteristics (Ta = 25°C)

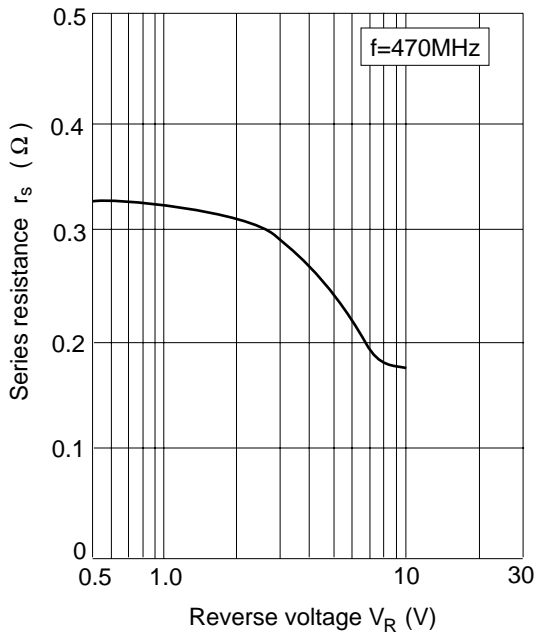
Item	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse current	$I_{R1}$	—	—	10	nA	$V_R = 10\text{ V}$
	$I_{R2}$	—	—	100		$V_R = 10\text{ V}$ , $T_a = 60\text{ °C}$
Capacitance	$C_{0.5}$	—	19	—	pF	$V_R = 0.5\text{ V}$ , $f = 1\text{ MHz}$
	$C_1$	14.9	—	16.4		$V_R = 1\text{ V}$ , $f = 1\text{ MHz}$
	$C_2$	—	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	—		—
Capacitance ratio	$n_2$	1.3	—	—	—	$C_1 / C_2$
	$n_3$	1.8	—	—	—	$C_1 / C_4$
Series resistance	$r_s$	—	—	0.4	$\Omega$	$V_R = 1\text{ V}$ , $f = 470\text{ MHz}$



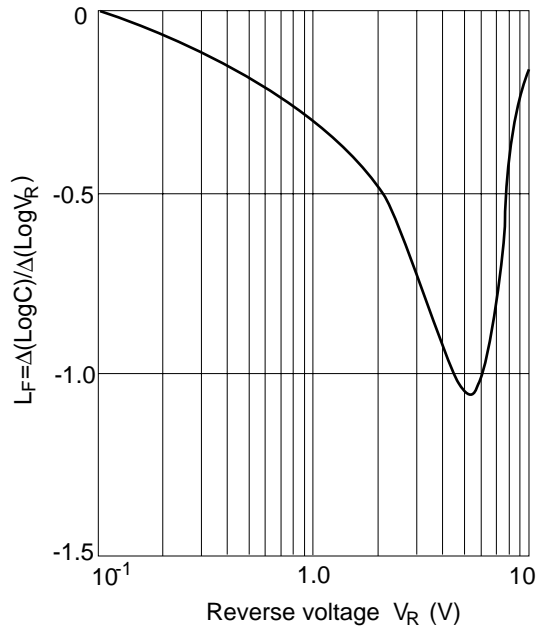
**Fig.1 Reverse current Vs. Reverse voltage**



**Fig.2 Capacitance Vs. Reverse voltage**



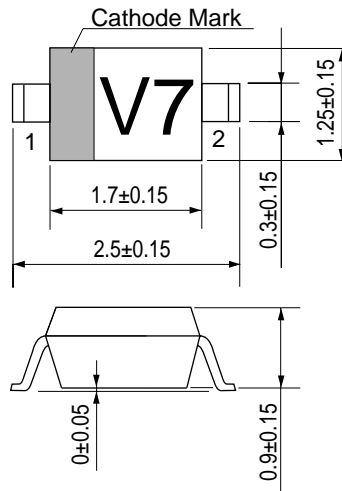
**Fig.3 Series resistance Vs. Reverse voltage**



**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