

## HVC300C

### Variable Capacitance Diode for VHF tuner

REJ03G0513-0100  
(Previous: ADE-208-1611)  
Rev.1.00  
Feb 04, 2005

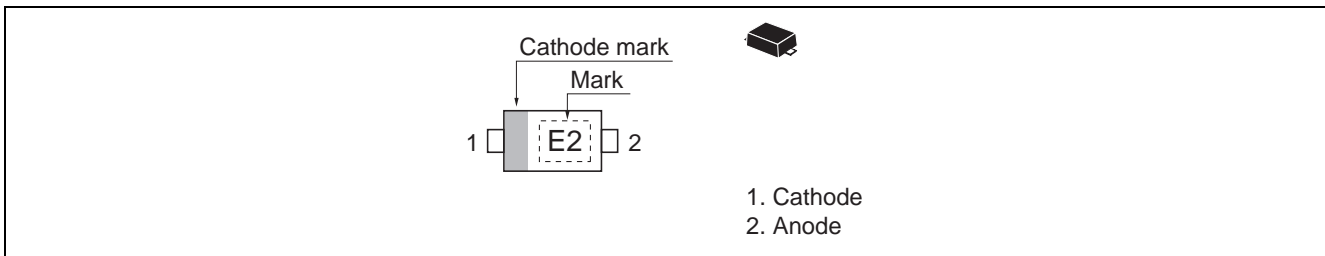
#### Features

- High capacitance ratio ( $n = 14.5$  min) and suitable for wide band tuner.
- Low series resistance and good C-V linearity.
- Ultra small Flat Lead Package (UFP) is suitable for surface mount design.

#### Ordering Information

Type No.	Laser Mark	Renesas Code	Previous Code
HVC300C	E2	PWSF0002ZA-A	UFP

#### Pin Arrangement



## Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Peak reverse voltage	$V_{RM}^{*1}$	35	V
Reverse voltage	$V_R$	34	V
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

Note: 1.  $R_L = 10\text{ k}\Omega$ 

## Electrical Characteristics

(Ta = 25°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	$C_2$	39.5	—	47.0	pF	$V_R = 2\text{ V}, f = 1\text{ MHz}$
	$C_{25}$	2.6	—	3.0		$V_R = 25\text{ V}, f = 1\text{ MHz}$
Capacitance ratio	n	14.5	—	—	—	$C_2 / C_{25}$
Series resistance	$r_s$	—	—	1.1	$\Omega$	$V_R = 5\text{ V}, f = 470\text{ MHz}$
Matching error	$\Delta C/C^{*1}$	—	—	2.0	%	$V_R = 2\text{ to }25\text{ V}, f = 1\text{ MHz}$

Note: 1. C.C system (Continuous Connected taping system) enable to make any 10 pcs of  $\Delta C/C$  continuous in a reel ,  
 expect extention to another group.

Calculate Matching Error,

$$\Delta C/C = \frac{(C_{max} - C_{min})}{C_{min}} \times 100 (\%)$$

Main Characteristic

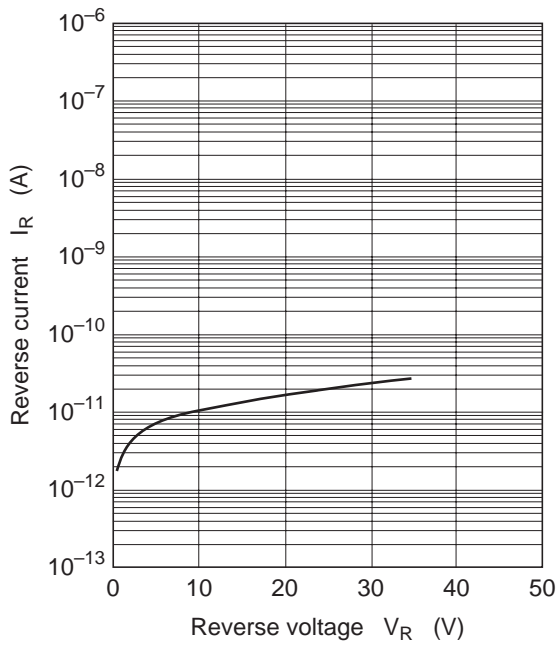


Fig.1 Reverse current vs. Reverse voltage

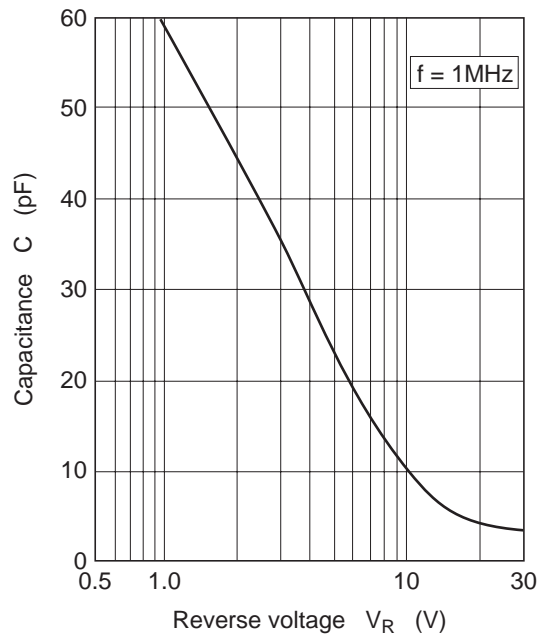


Fig.2 Capacitance vs. Reverse voltage

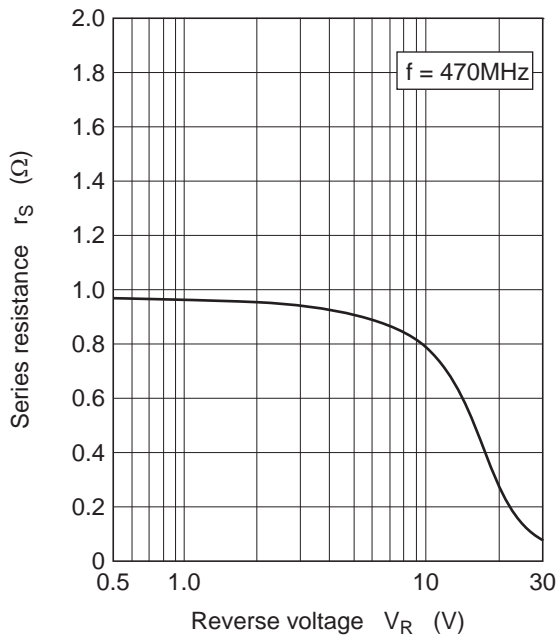


Fig.3 Series resistance vs. Reverse voltage

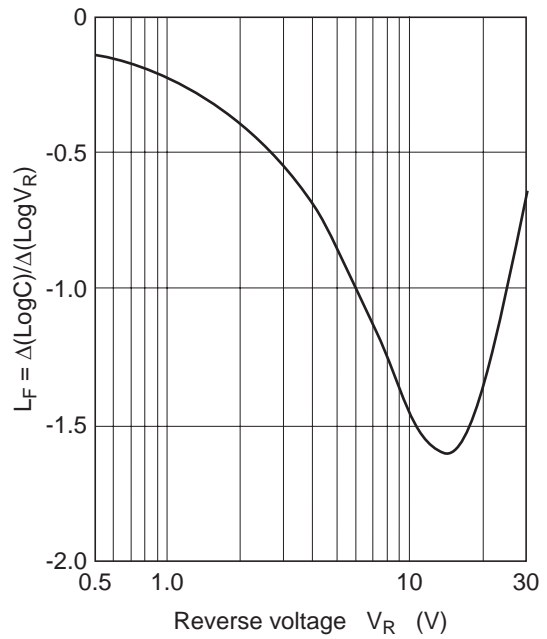
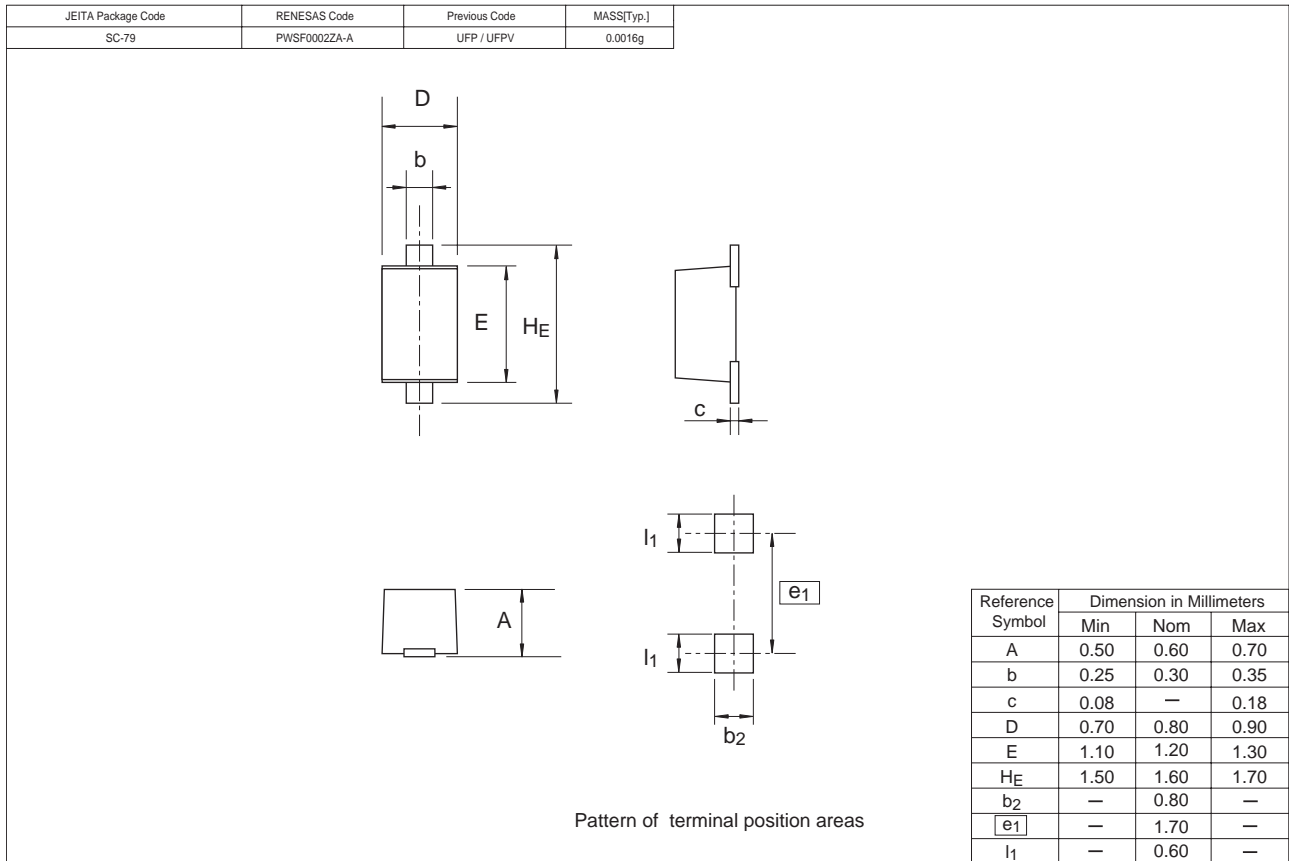


Fig.4 Linearity factor vs. Reverse voltage

## Package Dimensions



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