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Renesas Technology Corp.
Customer Support Dept.
April 1, 2003

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HVC363A

Variable Capacitance Diode for TV tuner

RENESAS

ADE-208-427A(Z)

Rev. 1
Nov. 1998

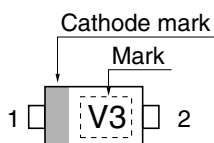
Features

- High capacitance ratio.(n=15.0Typ)
- Low series resistance ($r_s=0.75\Omega_{\text{max}}$) and good C-V linearity.
- Ultra small Flat Package (UFP) is suitable for surface mount design.

Ordering Information

Type No.	Laser Mark	Package Code
HVC363A	V3	UFP

Pin Arrangement



1. Cathode
2. Anode

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Value	Unit
Peak reverse voltage	V_{RM}^{*1}	35	V
Reverse voltage	V_R	32	V
Junction temperature	Tj	125	°C
Storage temperature	Tstg	-55 to +125	°C

Notes 1. RL=10kΩ

Electrical Characteristics

(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse voltage	V_R	32	—	—	V	$I_R = 1\mu A$
Reverse current	I_{R1}	—	—	10	nA	$V_R = 30V$
	I_{R2}	—	—	100		$V_R = 30V, T_a = 60^\circ C$
Capacitance	C_1	34.65	—	42.35	pF	$V_R = 1V, f = 1 MHz$
	C_{28}	2.361	—	2.754		$V_R = 28V, f = 1 MHz$
Capacitance ratio	n	13.5	15.0	—	—	C_1 / C_{28}
Series resistance	r_s	—	—	0.75	Ω	$C=14pF, f = 470 MHz$
Matching error	$\Delta C/C^{*1}$	—	—	2.0	%	$V_R = 1 \text{ to } 28V, f = 1 MHz$
Linealty factor ^{*2}	—	—	-1.2	—	—	$\Delta \log C / \Delta \log V$

Notes 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,

(Cmax-Cmin)

$$\Delta C/C = \frac{\text{Cmax-Cmin}}{\text{Cmin}} \times 100 (\%)$$

Notes 2. Calculate LF ($\Delta \log C / \Delta \log V$) at VR = 1 through 28V , f = 1 MHz .(Reference Value)

Main Characteristic

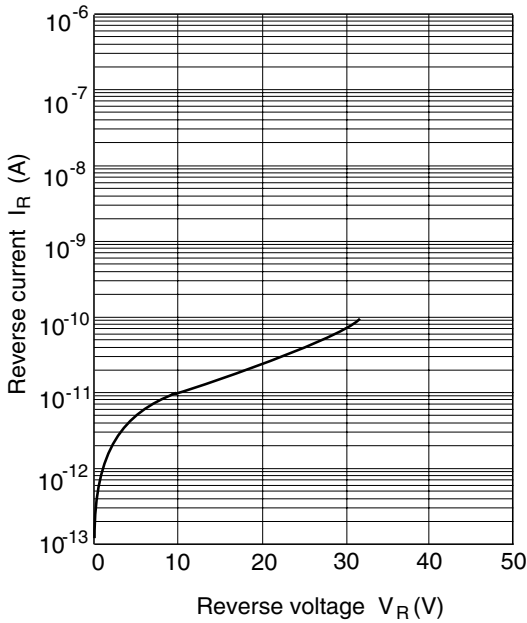


Fig.1 Reverse current Vs. Reverse voltage

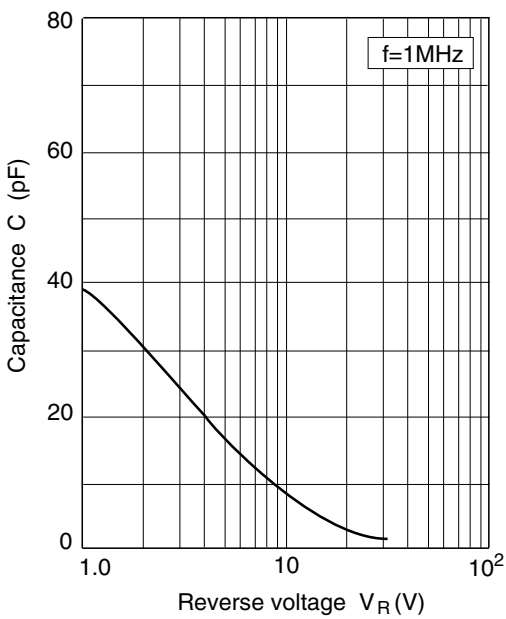


Fig.2 Capacitance Vs. Reverse voltage

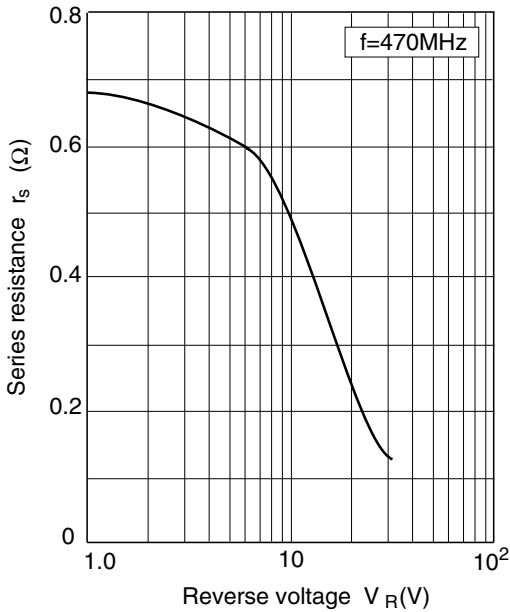


Fig.3 Series resistance Vs. Reverse voltage

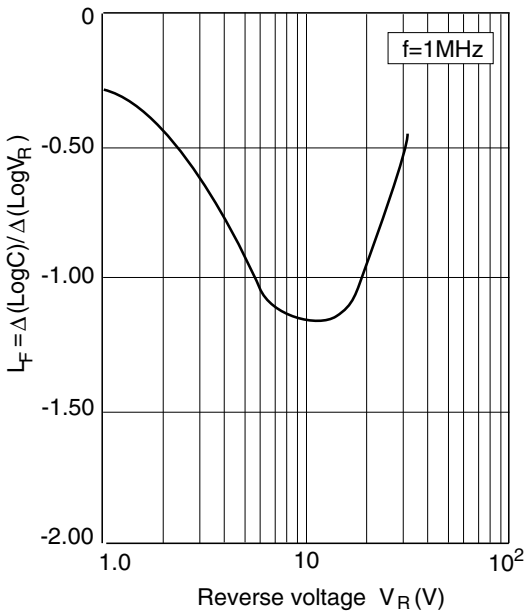
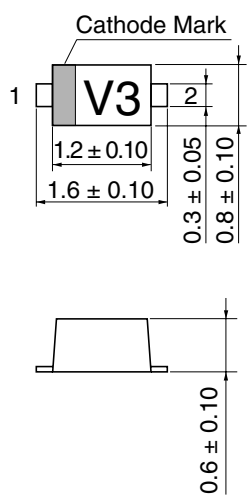


Fig.4 Linearity factor Vs. Reverse voltage

Package Dimensions

Unit : mm



- 1. Cathode
- 2. Anode

Hitachi Code	UFP
JEDECCode	—
EIAJCode	SC-79
Weight(g)	0.0016

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