

# Variable Capacitance Diode for TV Tuner

**HVC363A**



## FEATURES

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



## DEVICE MARKING

HVC363A = V3

## ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ )

Item	Symbol	Value	Unit
Peak reverse voltage	$V_{RM}^{*1}$	35	V
Reverse voltage	$V_R$	32	V
Junction temperature	$T_j$	125	$^\circ\text{C}$
Storage temperature	$T_{stg}$	- 55 to +125	$^\circ\text{C}$

Notes 1. $R_L=10k\Omega$

## ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ )

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse voltage	$V_R$	32	-	-	V	$I_R=1\mu\text{A}$
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	$C_1$	34.65	-	42.35	pF	$V_R=1\text{V}, f=1\text{MHz}$
	$C_{28}$	2.361	-	2.754		$V_R=28\text{V}, f=1\text{MHz}$
Capacitance ratio	n	13.5	15.0	-	-	$C_1/ C_{28}$
Series resistance	$r_s$	-	-	0.75	$\Omega$	$C=14\text{pF}, f=470\text{MHz}$
Matching error	$\Delta C/C^{*1}$	-	-	2.0	%	$V_R=1\text{ to }28\text{V}, f=1\text{MHz}$
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,

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

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

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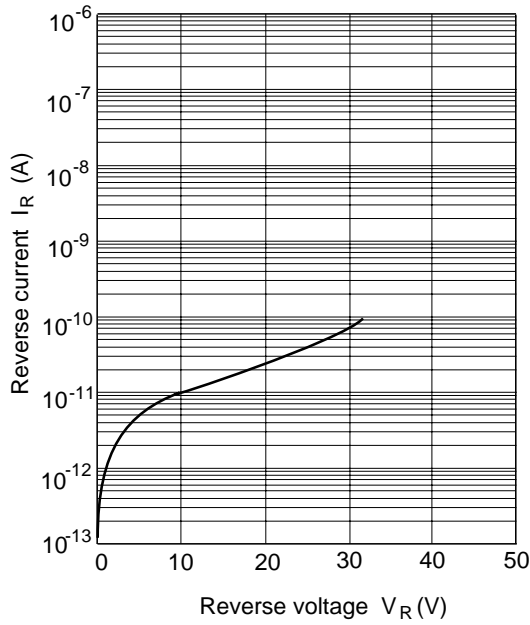


Fig.1 Reverse current Vs. Reverse voltage

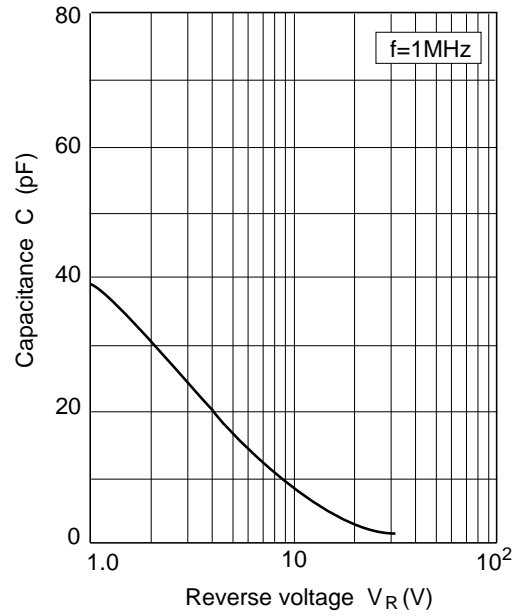


Fig.2 Capacitance Vs. Reverse voltage

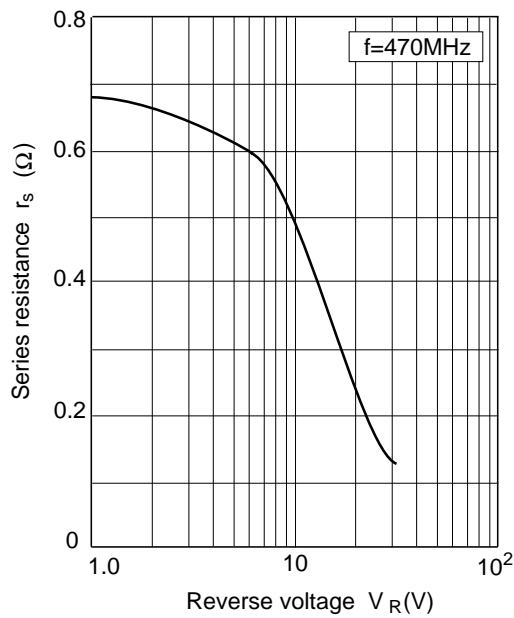


Fig.3 Series resistance Vs. Reverse voltage

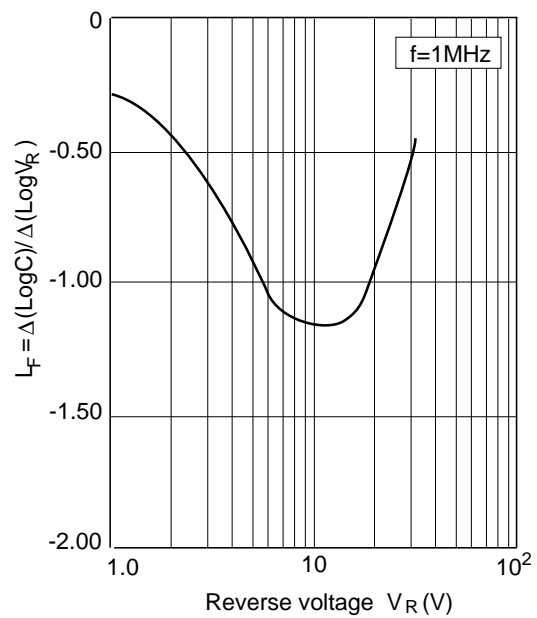


Fig.4 Linearity factor Vs. Reverse voltage