Variable Capacitance Diode for TV Tuner

HVC363A

FEATURES

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

SOD– 523

DEVICE MARKING

HVC363A = V3

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Item	Symbol	Value	Unit
Peak reverse voltage	V_{RM}* 1	35	V
Reverse voltage	V_R	32	V
Junction temperature	T_j	125	°C
Storage temperature	T_{stg}	– 55 to +125	°C

Notes 1.R_L=10kΩ

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse voltage	V_R	32	–	–	V	I_R = 1μA
Reverse current	I_{R1}	–	–	10	nA	V_R = 30V
	I_{R2}	–	–	100		V_R = 30V, T_A = 60°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	ΔC/C * 1	–	–	2.0	%	V_R = 1 to 28V , f = 1 MHz
Linealty factor * 2	–	–	-1.2	–	–	ΔlogC / ΔlogV

Notes 1. C.C system (Continuous Connected taping system) enable to make any 10 pcs of ΔC/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 (ΔlogC / ΔlogV) at V_R = 1 througn 28V , f = 1 MHz .(Reference Value)

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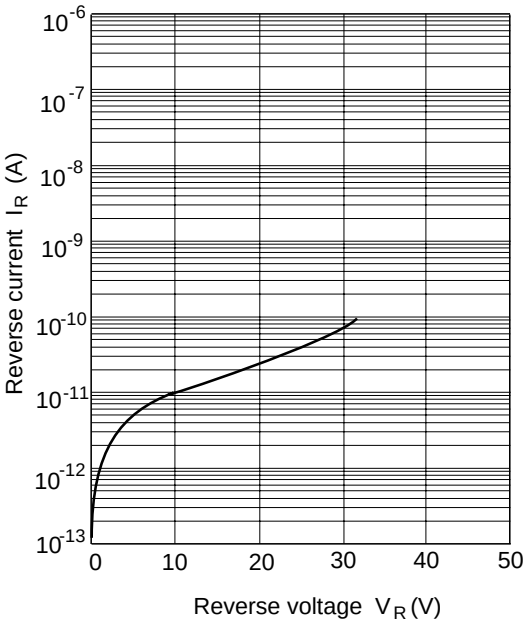

Fig.1 Reverse current Vs. Reverse voltage

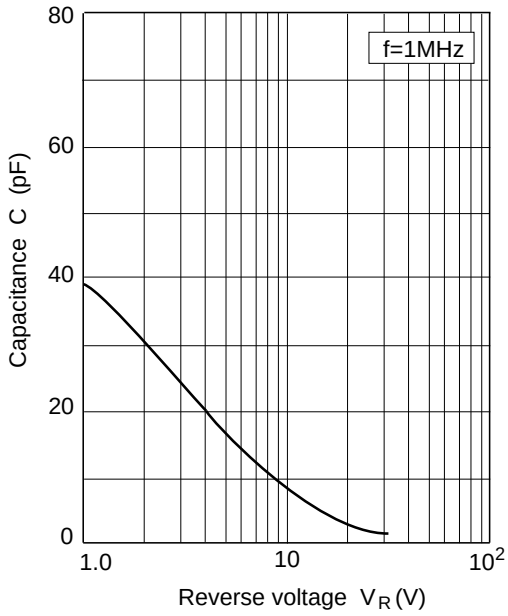

Fig.2 Capacitance Vs. Reverse voltage

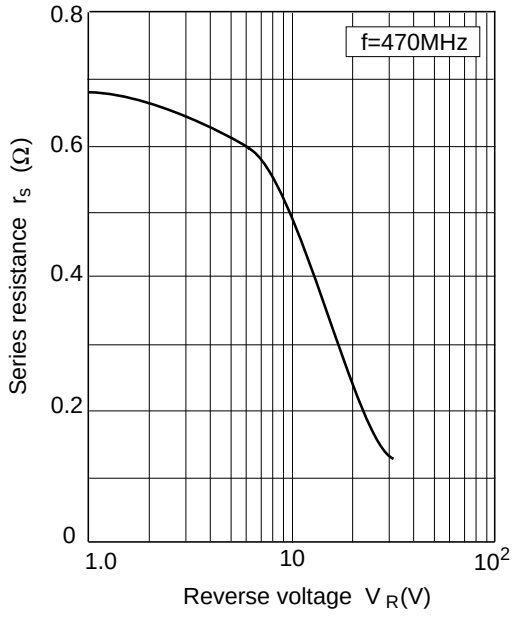

Fig.3 Series resistance Vs. Reverse voltage

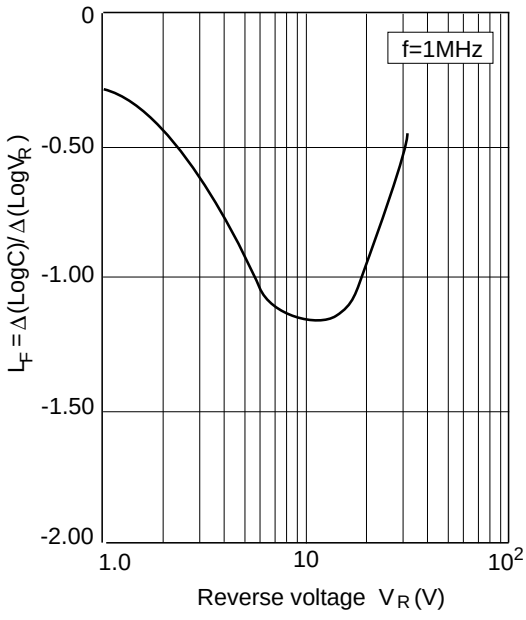

Fig.4 Linearity factor Vs. Reverse voltage