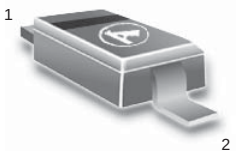
Variable Capacitance Diode for VHF Tuner

HVU300B

FEATURES

- Low matching error. (ΔC/C =2.0%max)
- High capacitance ratio. (n =17.0min)
- Low series resistance. (r_s=1.1Ωmax)
- Ultra small Resin Package (URP) is suitable for surface mount design.



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DEVICE MARKING

HVU300B = A1

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Item	Symbol	Value	Unit
Peak reverse voltage	V_{Rm}*1	35	V
Reverse voltage	V_R	34	V
Junction temperature	T_j	125	°C
Storage temperature	T_{stg}	– 55 to +125	°C

Note 1.R_L =10kΩ

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse current	I_{R1}	–	–	10	nA	V_R = 32V
	I_{R2}	–	–	100		V_R = 32V, T_A = 60°C
Capacitance	C_2	47.0	–	53.0	pF	V_R = 2V, f = 1 MHz
	C_{25}	2.65	–	3.0		V_R = 25V, f = 1 MHz
Capacitance ratio	n	17.0	–	–	–	C_2/ C_{25}
Series resistance	r_s	–	–	1.1	Ω	V_R = 5V, f = 470 MHz
Matching error	ΔC/C*1	–	–	2.0	%	V_R = 2 to 25V, f = 1 MHz

Note: *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,

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

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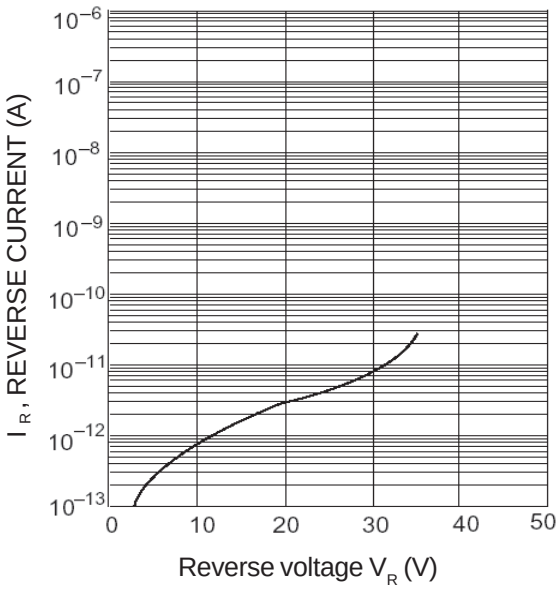

Fig.1 Reverse current Vs. Reverse voltage

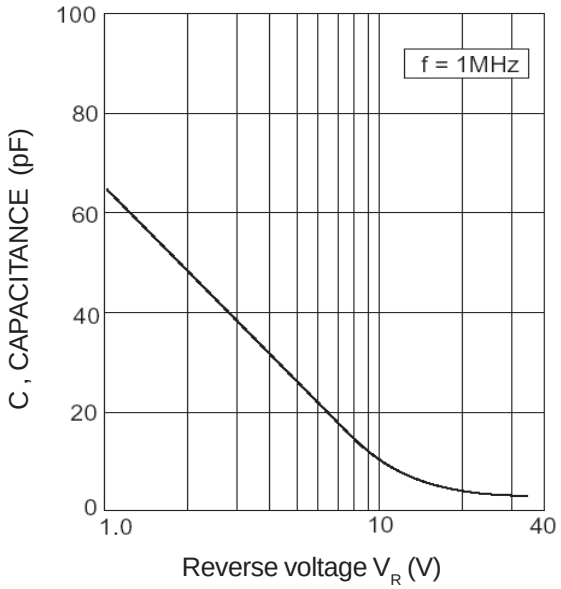

Fig.2 Capacitance Vs. Reverse voltage

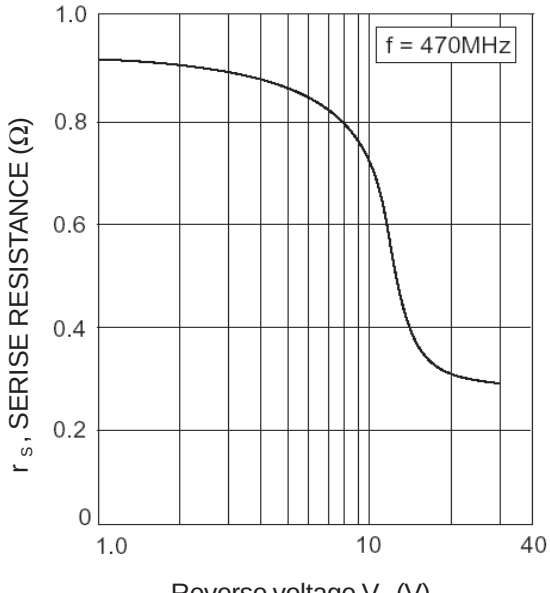

Fig.3 Series resistance Vs. Reverse voltage

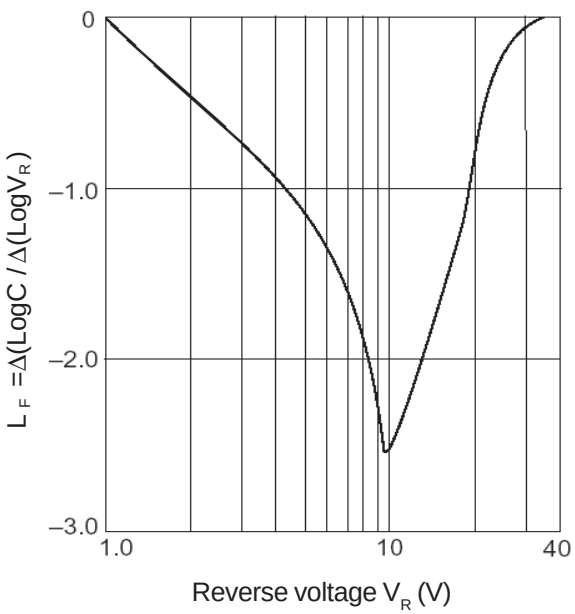

Fig.4 Linearity factor Vs. Reverse voltage