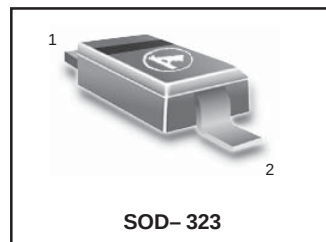


# Variable Capacitance Diode for Electronic Tuning

**HVU300A**

## FEATURES

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



## DEVICEMARKING

HVU300A = 0

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

| Item                 | Symbol           | Value        | Unit             |
|----------------------|------------------|--------------|------------------|
| Reverse voltage      | $V_R$            | 32           | V                |
| Junction temperature | $T_j$            | 125          | $^\circ\text{C}$ |
| Storage temperature  | $T_{\text{stg}}$ | - 55 to +125 | $^\circ\text{C}$ |

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

| Item              | Symbol            | Min  | Typ | Max  | Unit     | Test Condition                                   |
|-------------------|-------------------|------|-----|------|----------|--------------------------------------------------|
| 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       | $C_2$             | 39.5 | —   | 47.4 | pF       | $V_R = 2\text{V}, f = 1\text{ MHz}$              |
|                   | $C_{25}$          | 2.60 | —   | 3.03 |          | $V_R = 25\text{V}, f = 1\text{ MHz}$             |
| Capacitance ratio | $n$               | 14.5 | —   | —    | —        | $C_2 / C_{25}$                                   |
| Series resistance | $r_s$             | —    | —   | 1.10 | $\Omega$ | $V_R = 5\text{V}, f = 470\text{ MHz}$            |
| 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 tapping system) enable to make any 10 pcs of  $\Delta C/C$  continuous in a reel, expect extension to another group.

Calculate Matching Error,

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

# HVU300A

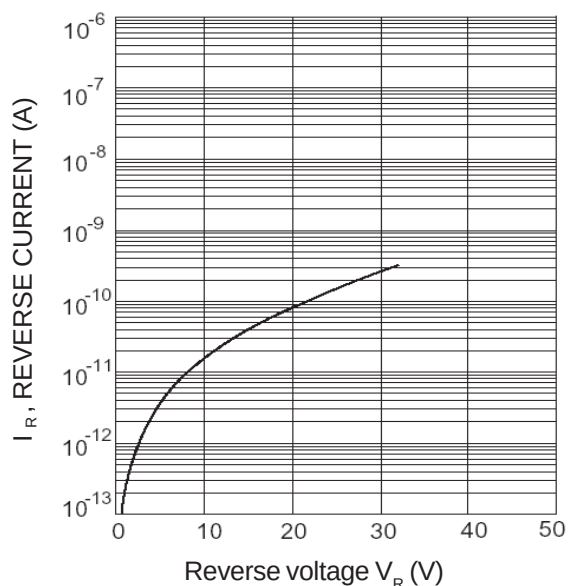


Fig.1 Reverse current Vs. Reverse voltage

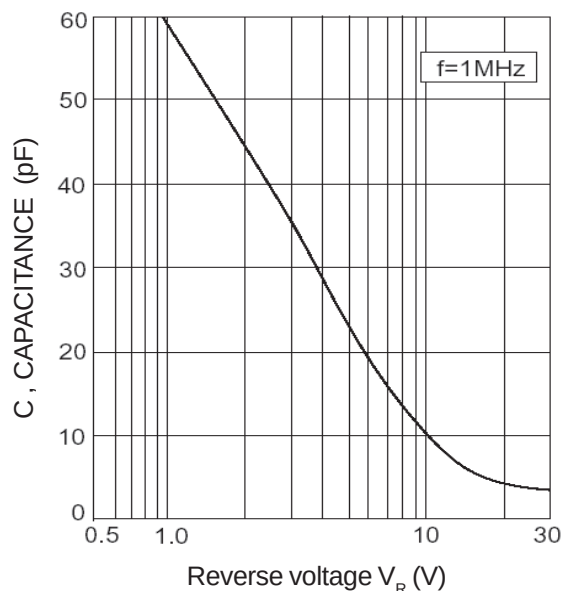


Fig.2 Capacitance Vs. Reverse voltage

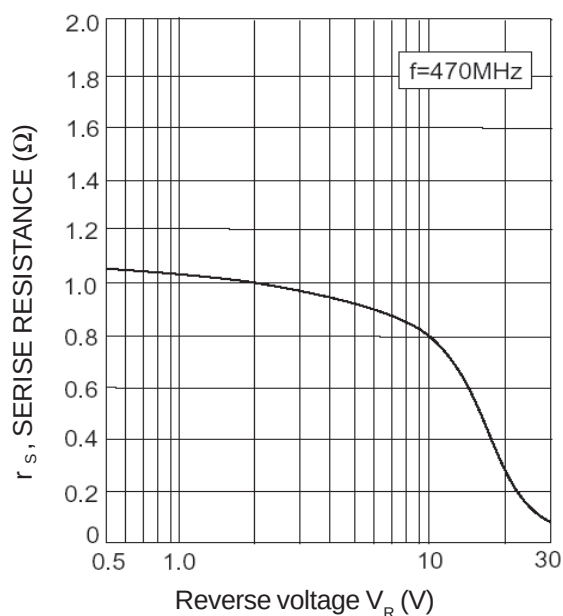


Fig.3 Series resistance Vs. Reverse voltage

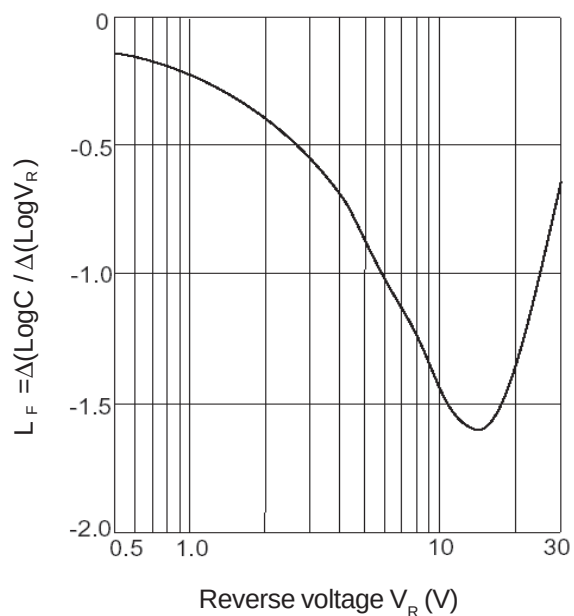


Fig.4 Linearity factor Vs. Reverse voltage