

rechnung_spannungsfolger

Student Group

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Table of Contents

I. Analysis of the Currents

| | | |
|----------------|-----------------|--|
| by (2+3) | $I_p = I_m = 0$ | Therefore, I_p and I_m are defined |
| by (3) and (5) | $I_o = I_m = 0$ | By this, I_o is defined |

II. Analysis of the Voltage Amplification

| | | |
|--------|---|---|
| by (0) | $A_V = \frac{U_O}{U_I}$ | |
| | $A_V = \frac{U_O}{U_I}$ | with (4) |
| | $A_V = \frac{U_O}{U_O + U_D}$ | |
| | $A_V = \frac{U_O}{A_D \cdot U_D + U_D}$ | with (1) |
| | $A_V = \frac{A_D \cdot U_D}{A_D \cdot U_D + U_D}$ | |
| | $A_V = \frac{A_D \cdot U_D}{A_D \cdot U_D + U_D}$ | |
| | $A_V = \frac{A_D \cdot U_D}{A_D \cdot U_D + U_D}$ | Expand with $\frac{1}{A_D \cdot U_D}$ |
| | $A_V = \frac{A_D \cdot U_D}{A_D \cdot U_D + U_D} \cdot \frac{1}{A_D \cdot U_D}$ | |
| | $A_V = \frac{1}{1 + \frac{1}{A_D}}$ | |
| | $A_V = \frac{1}{1 + \frac{1}{A_D}}$ | with $\frac{1}{A_D} \rightarrow \infty$ |
| | $A_V = \frac{1}{1 + 0}$ | |
| | $A_V = \frac{1}{1} = 1$ | |

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Last update: 2021/11/27 23:44

