

rechnung_spannungsfolger

Student Group

First Name	Surname	Matrikel Nr.

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I. Analysis of the Currents

by (2)+(3)	$I_p = I_m = 0$
	Therefore, I_p and I_m are defined
by (3)+(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)
	$A_V = \frac{U_O}{U_O + U_D}$
	$A_V = \frac{U_O}{U_O + U_D}$
	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 $\frac{1}{A_D \cdot U_D}$
	$A_V = \frac{A_D \cdot U_D \cdot \frac{1}{A_D \cdot U_D}}{(A_D \cdot U_D + U_D) \cdot \frac{1}{A_D \cdot U_D}}$
	$A_V = \frac{1}{1 + \frac{1}{A_D}}$
	$A_V = \frac{1}{1 + \frac{1}{A_D}}$
	$A_V = \frac{1}{1 + \frac{1}{A_D}}$
	with $\frac{1}{A_D} \rightarrow \infty$
	$A_V = \frac{1}{1 + 0}$

	$\quad$
$\quad\quad\quad$	$\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$
$\quad$	$A_V=\frac{1}{1}=1$
	$\quad$
$\quad\quad\quad$	$\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$

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