

rechnung_spannungsfolger

Student Group

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Table of Contents

I. Analysis of the Currents

aus (2+3)	$\{I_p\} = \{I_m\} = 0$	Therefore, I_p and I_m are defined
$\{I_o\}$ und (5)	$\{I_o\} = I_m = 0$	By this, I_o is defined

II. Analysis of the Voltage Amplification

aus (0)	$\{A_V\} = \frac{\{U_A\}}{\{U_E\}}$	
	$A_V = \frac{\{U_A\}}{\{U_E\}}$	mit (4)
	$A_V = \frac{\{U_A\}}{\{U_A + U_D\}}$	
	$A_V = \frac{\{U_A\}}{\{U_A\} + \{U_D\}}$	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 $\frac{1}{\{A_D\}} \rightarrow \infty$ 0\$
	$A_V = \frac{1}{1 + \{0\}}$	
	$A_V = \frac{1}{1} = 1$	

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Last update: 2021/11/14 17:08

