

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
aus (3) und (5)	$I_o = I_m = 0$	By this, I_o is defined

II. Analysis of the Voltage Amplification

aus (0)	$A_V = \frac{U_O}{U_I}$	
	$A_V = \frac{U_O}{U_I}$	mit (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 $\frac{1}{A_D \cdot U_D}$
	$A_V = \frac{A_D \cdot U_D}{A_D \cdot U_D + U_D} \cdot \frac{1}{A_D \cdot U_D}$	
	$A_V = \frac{1}{1 + \frac{1}{A_D}}$	
	$A_V = \frac{1}{1 + \frac{1}{A_D}}$	with $\frac{1}{A_D} \rightarrow \infty$
	$A_V = \frac{1}{1 + 0}$	
	$A_V = \frac{1}{1} = 1$	

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