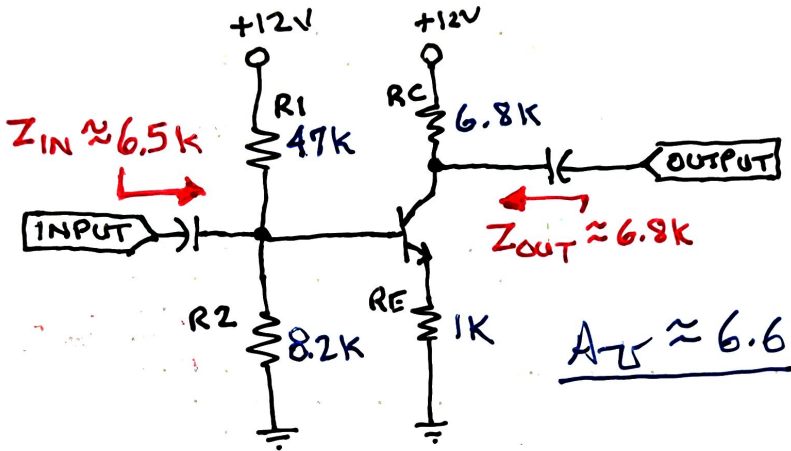


- FOLLOW-UP VIDEO -

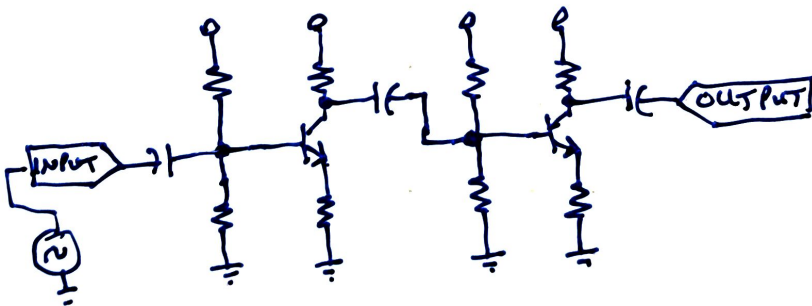
①
W2AEW

THE EFFECTS OF CASCADING AMPLIFIERS DUE TO INPUT & OUTPUT IMPEDANCE

OUR EXAMPLE AMPLIFIER:



DIRECT CASCADE OF 2 OF THESE AMPLIFIERS



RESULTING GAIN?

RESULTING GAIN $\approx \underline{22 \text{ V/V}}$

WHY?

- INPUT IMPEDANCE OF 2ND STAGE APPEARS IN PARALLEL WITH THE OUTPUT (LOAD) IMPEDANCE OF THE 1ST STAGE.

- THUS, THE "LOAD" ON 1ST STAGE IS

$$R_L \approx R_C \parallel Z_{in} \approx 3.3 \text{K}$$

~ THIS MAKES THE 1ST STAGE GAIN DROP TO:

$$\frac{R_L}{R_E} \approx 3.3 \text{ V/V}$$

SO, OVERALL GAIN IS $\approx$

$$3.3 \times 6.6 \approx 22 \text{ V/V}$$

- USE AN EMITTER FOLLOWER
TO FIX THIS!

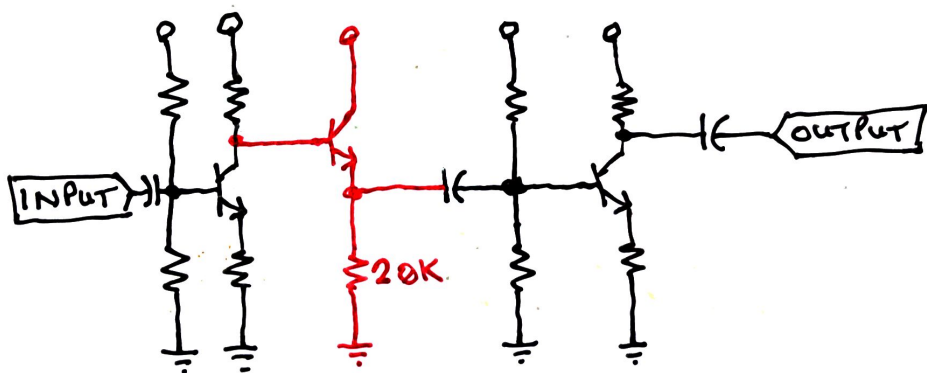
③
W2AEW

EMITTER FOLLOWER HAS:

VIDEO
#356

- HIGH INPUT IMPEDANCE
(WON'T LOAD 1st STAGE)

- LOW OUTPUT IMPEDANCE
(NOT EFFECTED BY 2nd STAGE INPUT Z)



- GAIN IS PRESERVED W 1st STAGE

- OVERALL GAIN NOW $\approx 43\%$