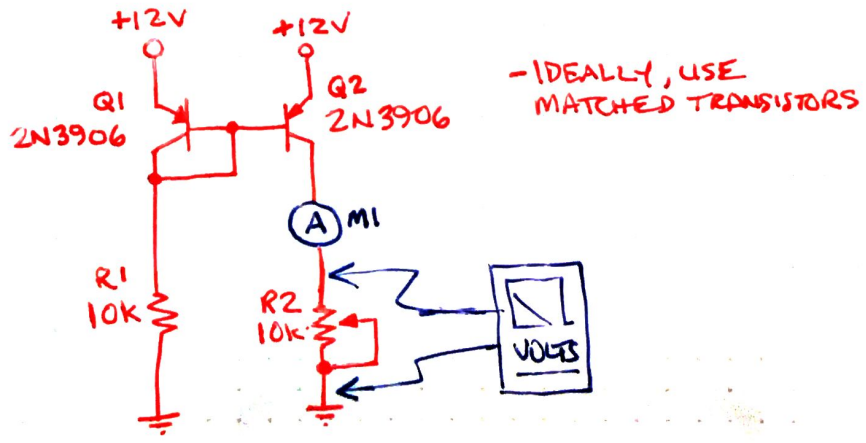


CURRENT SOURCE / MIRROR OUTPUT IMPEDANCE & THE EARLY EFFECT

SEE MY PREVIOUS VIDEO ON
CURRENT SOURCES & MIRRORS #190

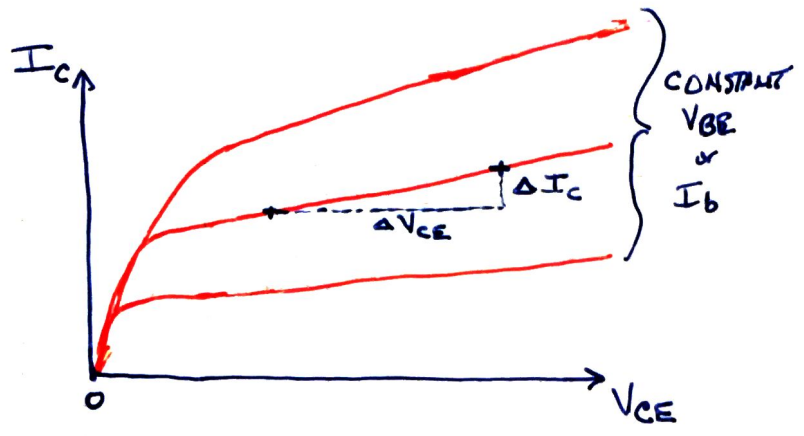
THE EFFECT OF NON-INFINITE O/P IMPEDANCE

EXPERIMENT:

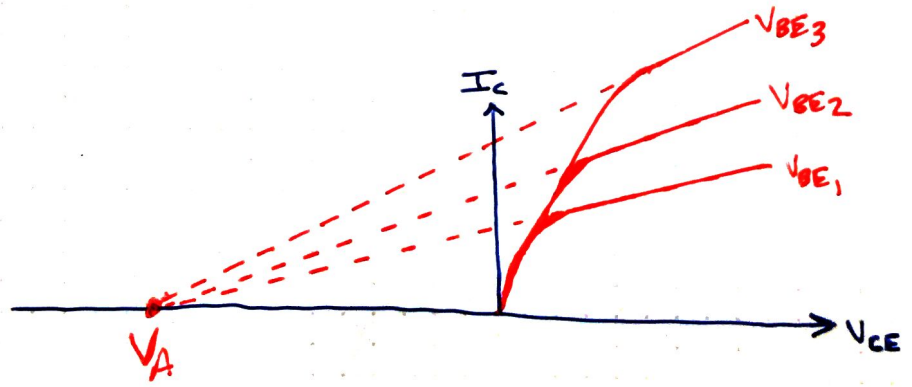


- VARY THE R2 TO CHANGE VOLTAGE AT Q2 COLLECTOR
- NOTE CHANGE IN CURRENT ON AMMETER M1

THE EARLY EFFECT

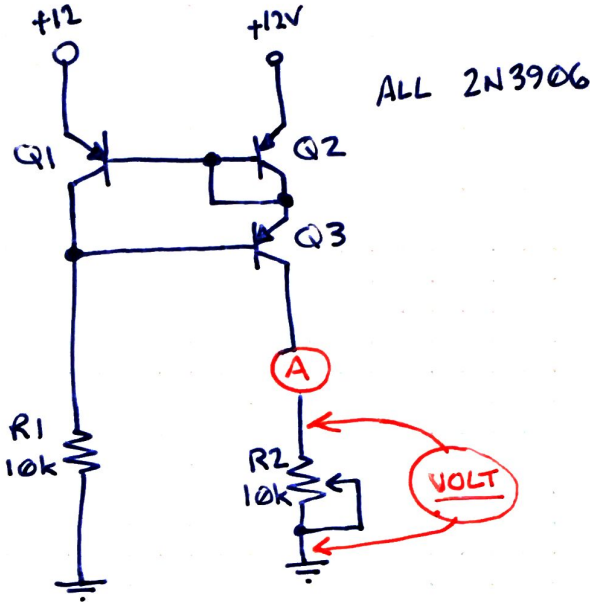


- INCREASE IN I_C AS V_{CE} IS INCREASED
- DUE TO NARROWING OF BASE WIDTH WITH INCREASED COLLECTOR-EMITTER VOLTAGE
- GENERALLY WORSE ON PNP VS. NPN



V_A IS EARLY VOLTAGE. ALWAYS GIVEN AS POSITIVE

THE WILSON CURRENT MIRROR (TO THE RESCUE)



- SAME EXPERIMENT
- VARY R_2 (LOAD VOLTAGE)
- MONITOR CURRENT