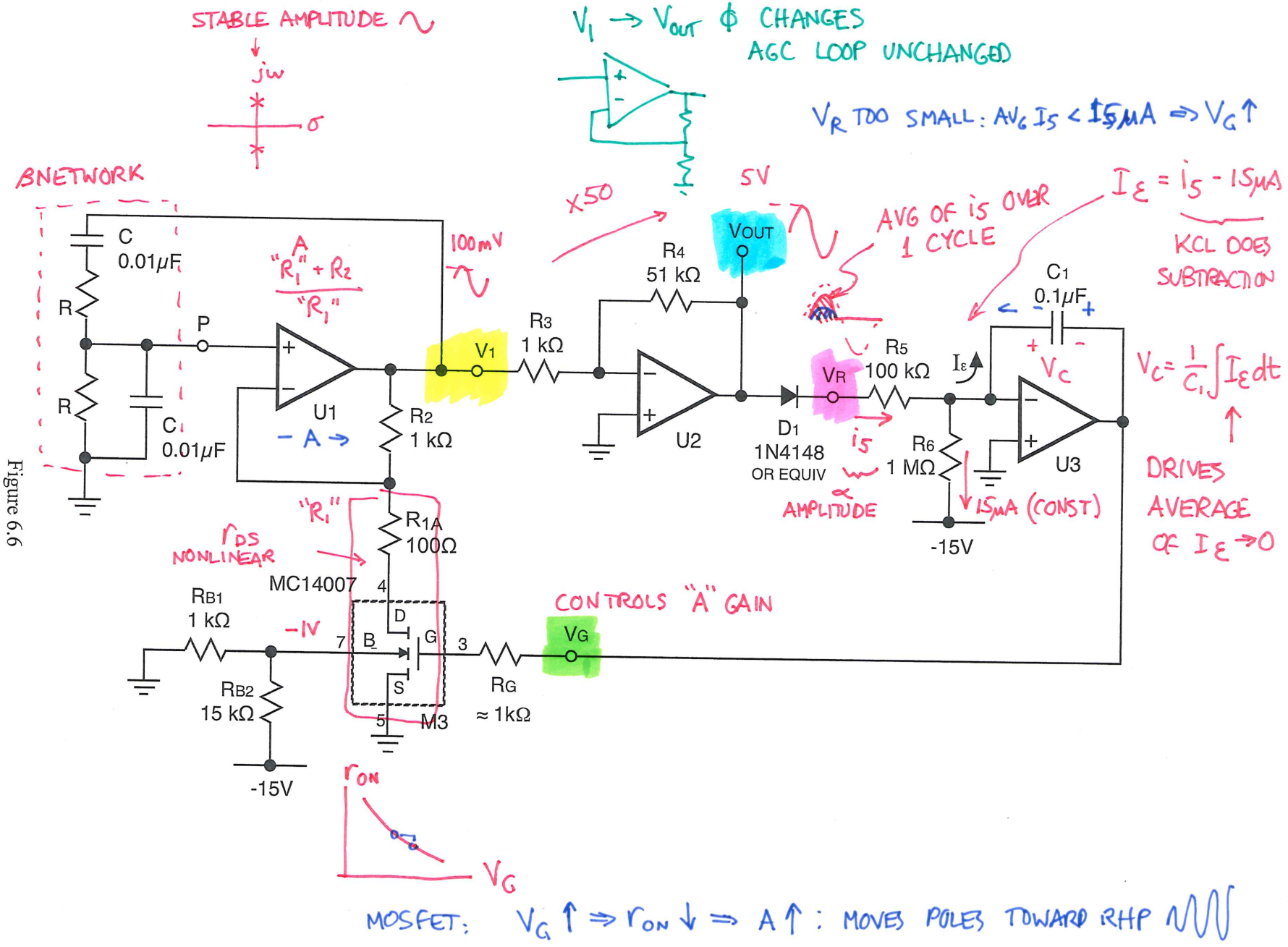
STABLE AMPLITUDE ~
jw
σ
$V_1 \rightarrow V_{OUT}$ ϕ CHANGES
AGC LOOP UNCHANGED
V_R TOO SMALL: $AV_G I_S < 15\mu A \Rightarrow V_G \uparrow$
BNETWORK
C
0.01μF
R
R
C
0.01μF
P
A
"R_1" + R_2 / "R_1"
100mV
x50
5V
V_1
U1
− A →
R_2
1 kΩ
R_3
1 kΩ
R_4
51 kΩ
VOUT
U2
AVG OF i_S OVER 1 CYCLE
$I_\varepsilon = i_S - 15\mu A$
KCL DOES SUBTRACTION
C_1
0.1μF
V_C
$V_C = \frac{1}{C_1}\int I_\varepsilon dt$
DRIVES AVERAGE OF $I_\varepsilon \rightarrow 0$
V_R
R_5
100 kΩ
I_ε
D_1
1N4148
OR EQUIV
i_S
∝ AMPLITUDE
R_6
1 MΩ
$15\mu A$ (CONST)
U3
-15V
"R_1"
R_{1A}
100Ω
r_{DS}
NONLINEAR
MC14007
4
D
G
3
B
7
S
5
M3
R_{B1}
1 kΩ
-1V
R_{B2}
15 kΩ
-15V
R_G
≈ 1kΩ
CONTROLS "A" GAIN
V_G
r_{ON}
V_G
MOSFET: $V_G \uparrow \Rightarrow r_{ON} \downarrow \Rightarrow A \uparrow$: MOVES POLES TOWARD RHP

Figure 6.6