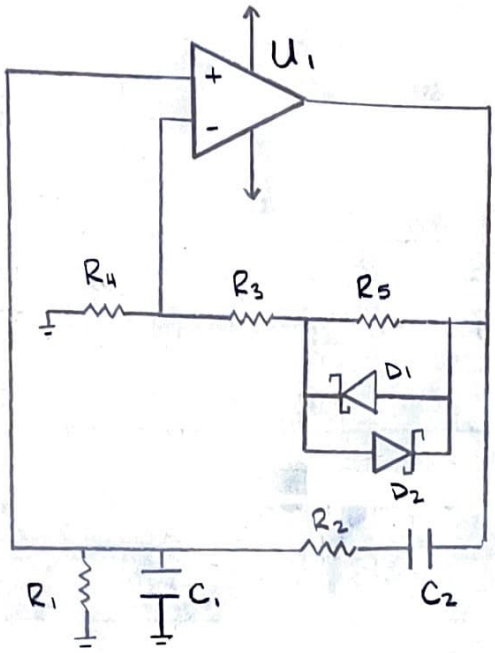
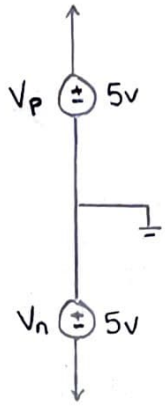
WEIN BRIDGE W/ AGC





$R_1 = R_2 = 20K\Omega$
$C_1 = C_2 = 4nF$
$R_3 = R_4 = 25K\Omega$
$R5 = 40K\Omega$

$$f = \frac{1}{2\pi RC} = 2000$$

$$\frac{1}{RC} = 4000\pi$$

$$RC = \frac{1}{4000\pi}$$

ASSUME $R = 20K\Omega \Rightarrow C \approx 4nF$

ASSUME $C_1 = C_2 = 4nF$ & $R_1 = R_2 = 20K\Omega$

FROM NOTES:
TO SATISFY BSC

$$1 + \frac{R_3}{R_4} = 3$$

$$R_3 = 2R_4$$

AFTER TUNING & ADDING AN AGC

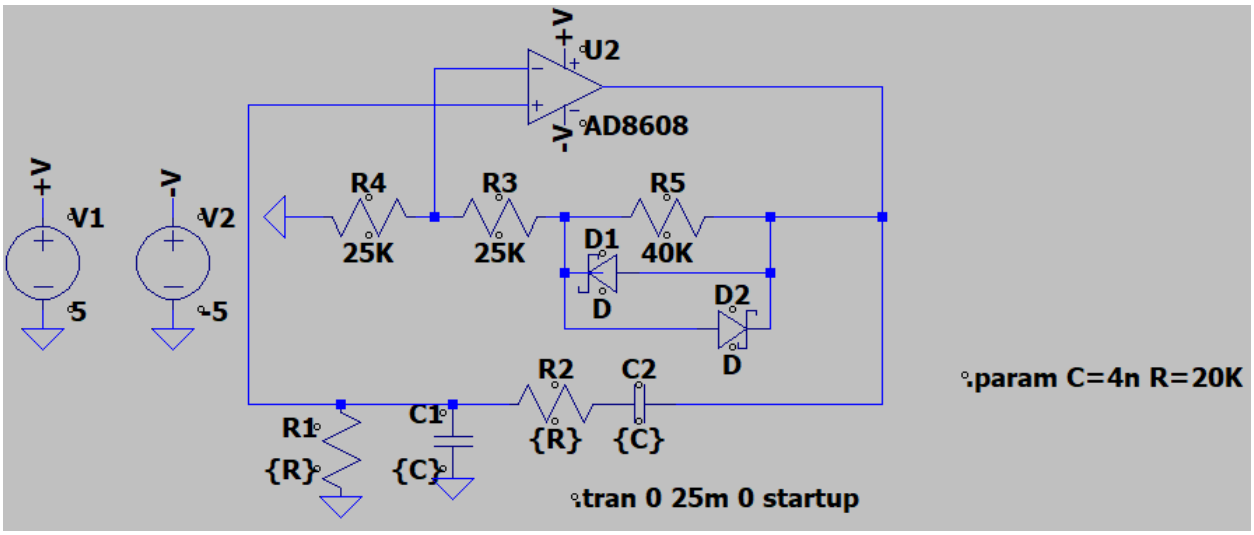
$R_3 = 25K\Omega$

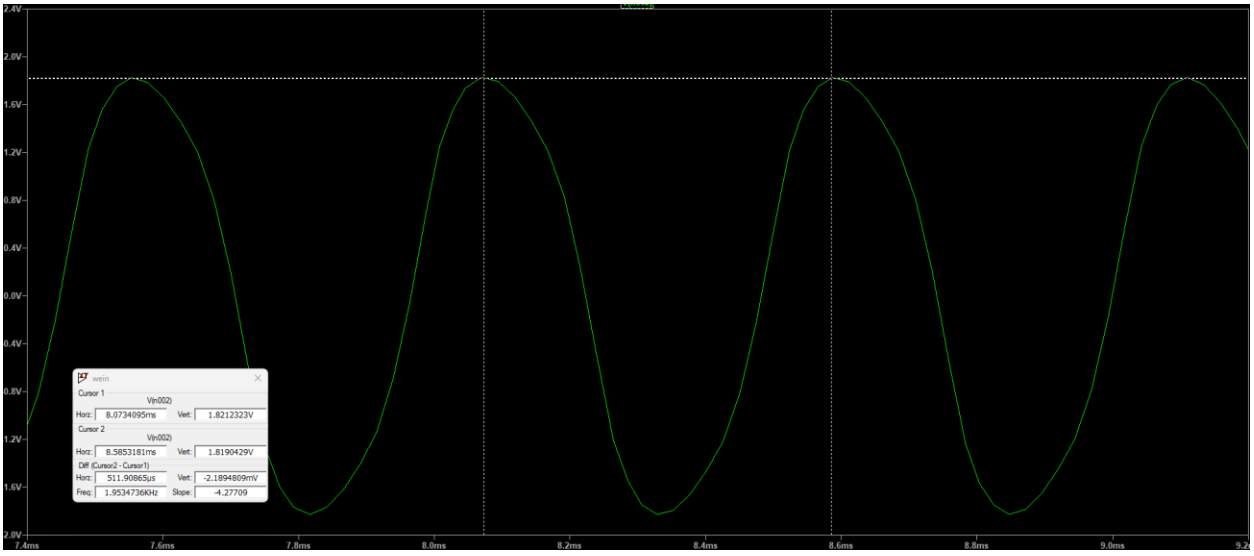
$R_4 = 25K\Omega$

$R_5 = 40K\Omega$

$*(R_3 + R_5) \geq 2R_4 *$

U_1: AD8608 OP AMP $\longrightarrow$ 10 MHz


+V
U2
-V
AD8608
+V
V1
5
-V
V2
-5
R4
25K
R3
25K
R5
40K
D1
D
D2
D
R2
{R}
C2
{C}
R1
{R}
C1
{C}
.param C=4n R=20K
.tran 0 25m 0 startup


2.4V
2.0V
1.6V
1.2V
0.8V
0.4V
0.0V
-0.4V
-0.8V
-1.2V
-1.6V
-2.0V
7.4ms
7.6ms
7.8ms
8.0ms
8.2ms
8.4ms
8.6ms
8.8ms
9.0ms
wein
Cursor 1
V(n002)
Horz: 8.0734095ms
Vert: 1.8212323V
Cursor 2
V(n002)
Horz: 8.5853181ms
Vert: 1.8190429V
Diff (Cursor2 - Cursor1)
Horz: 511.90865us
Vert: -2.1894809mV
Freq: 1.9534736KHz
Slope: -4.27709