

3/8/18

$$G_2 = 5000 \quad \swarrow \times 100$$

$$G_1 = \left(1 + \frac{R_f}{R_{in}}\right), \quad R_f = 10 \text{ K}$$

$$R_{in} = 200$$

Sensitive to sound vibrations
and table vibrations

<u>Low Pass</u>	<u>V_{out}</u>	<u>Error (V)</u>
100 KHz	1.726 V	$\pm 1 \text{ mV}$
33 KHz	0.575 V	$\pm 2 \text{ mV}$
10 KHz	177 mV	$\pm 2 \text{ mV}$
3.3 KHz	65.4 mV	$\pm 1 \text{ mV}$
1 KHz	24.6 mV	$\pm 0.8 \text{ mV}$
330 Hz	12.1 mV	$\pm 0.4 \text{ mV}$

$$I = \frac{V}{R} = \frac{V}{10 \text{ K}} = V \times 10^{-4}$$

V in mV so

$$V' \times 10 \leq 100$$

$$V' \leq 10$$

$$I = V' \times 10^{-3} \times 10^{-4}$$

$$= V' \times 10^{-7} \text{ A}$$

$$I = V' \times 10 \text{ } \mu\text{A}$$

Low pass : 10 KHz

<u>I_{dc}</u>	<u>V_{out}</u>	<u>Error</u>
10 μA	72.2	$\pm 0.2 \text{ mV}$
20 μA	73.8	$\pm 0.2 \text{ mV}$
30 μA	74.3	$\pm 0.2 \text{ mV}$
40 μA	75.1	$\pm 0.4 \text{ mV}$
50 μA	75.8	$\pm 0.1 \text{ mV}$
60 μA	76.4	$\pm 0.1 \text{ mV}$

<u>I_{dc}</u>	<u>V_{out}</u>	<u>Error</u>
70 μA	77.5	$\pm 0.1 \text{ mV}$
80 μA	78.4	$\pm 0.2 \text{ mV}$
90 μA	79.3	$\pm 0.2 \text{ mV}$
100 μA	80.5	$\pm 0.2 \text{ mV}$