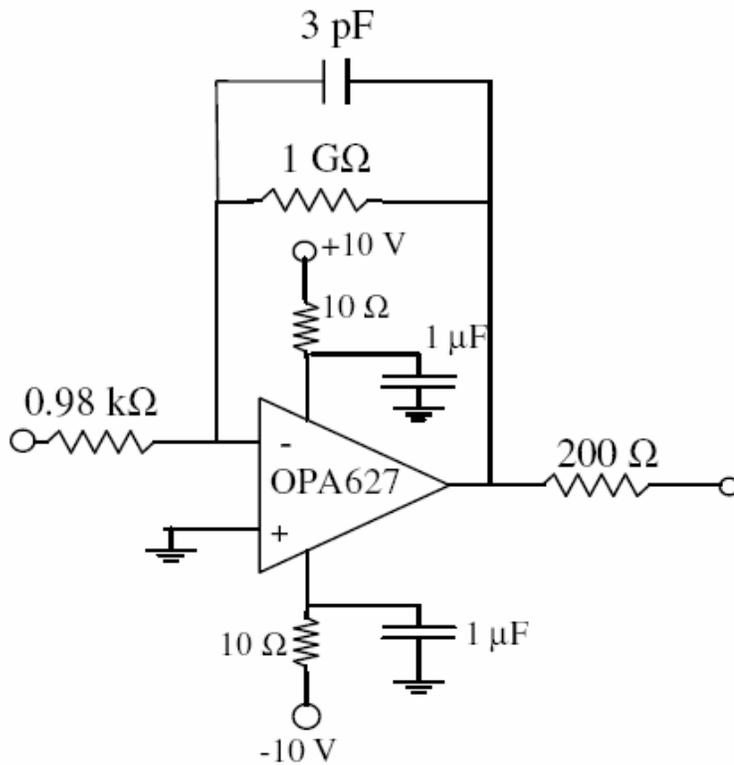


Introduction to preamplifier

1. Preamplifier in STM is a kind of current to voltage converter. Its gain can be expressed as follows:

$$Gain = \frac{V_{out}}{I_{in}} = R$$

2. Circuit diagram



- Gain = 10^9

- 0.98 k Ohms resistor and 3 pF capacitor in the diagram are not used.

3. Parts supplied

Name	Quantity	Remarks
Bread board	1 EA	
OP amp	1 EA	OPA627 of TI (Texas Instrument)
Resistor 1	1 EA	1 G Ohms
Resistor 2	1 EA	200 Ohms
Resistor 3	2 EA	10 Ohms
Capacitor 1	2 EA	1 μ F
Wire	1 roll	
Coaxial cable	1 roll	Alpha wire 9058AC (1 m)
Connectors	4 EA	
Battery	2 EA	9V for OP amp
Battery connector	2 EA	9V battery
Switch	1 EA	For 9V battery
Battery	1 EA	1.5V for bias voltage
Insulating enclosure	1 EA	Aluminum (Die casted) 110×60×26 mm ³

4. Sample picture

