
EE 254

Electronic Instrumentation

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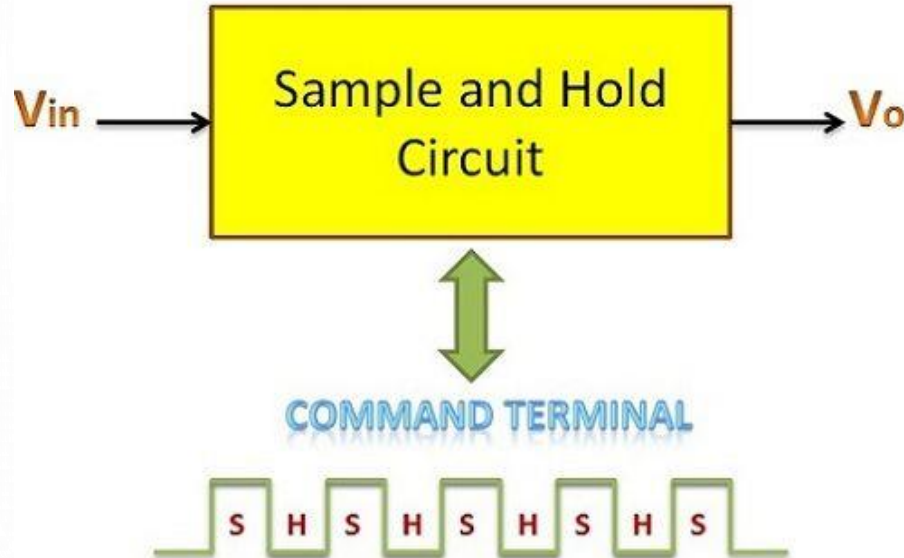
Dept. of Electrical and Electronic Engineering

Faculty of Engineering, University of Peradeniya

Lecture Note #13

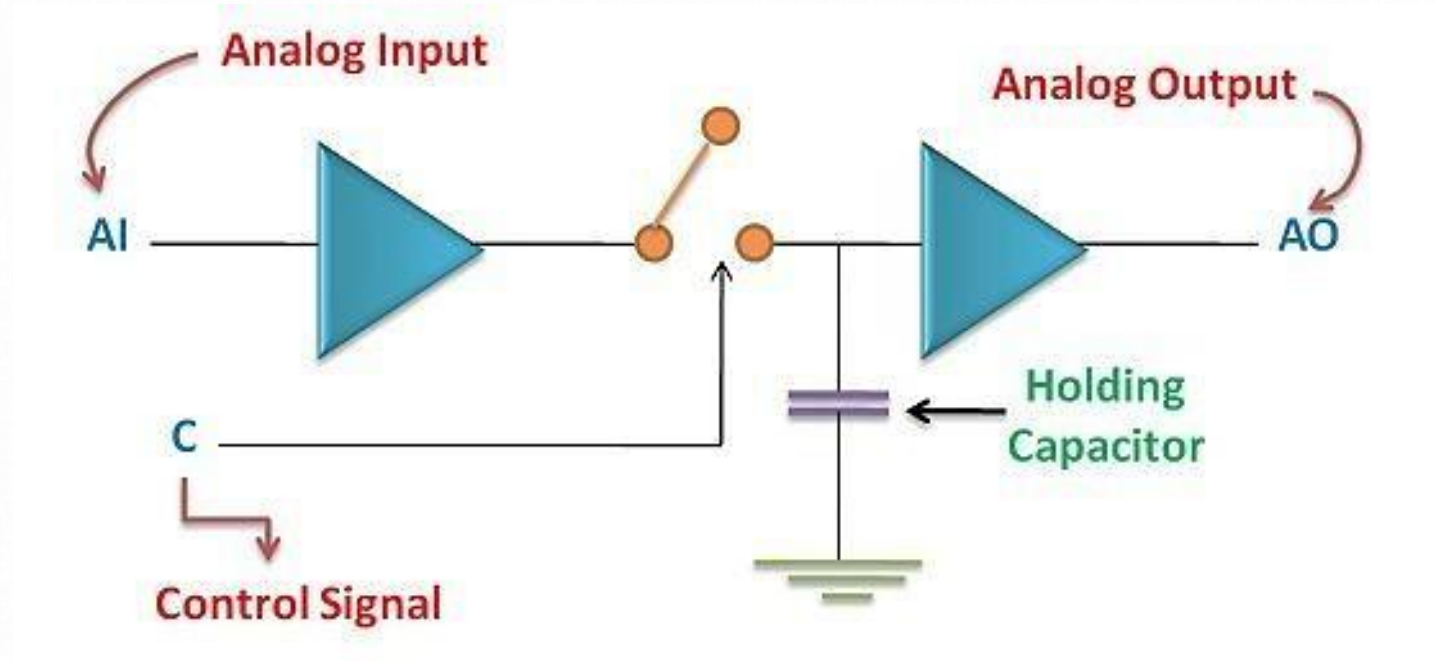
Sample and Hold Circuit

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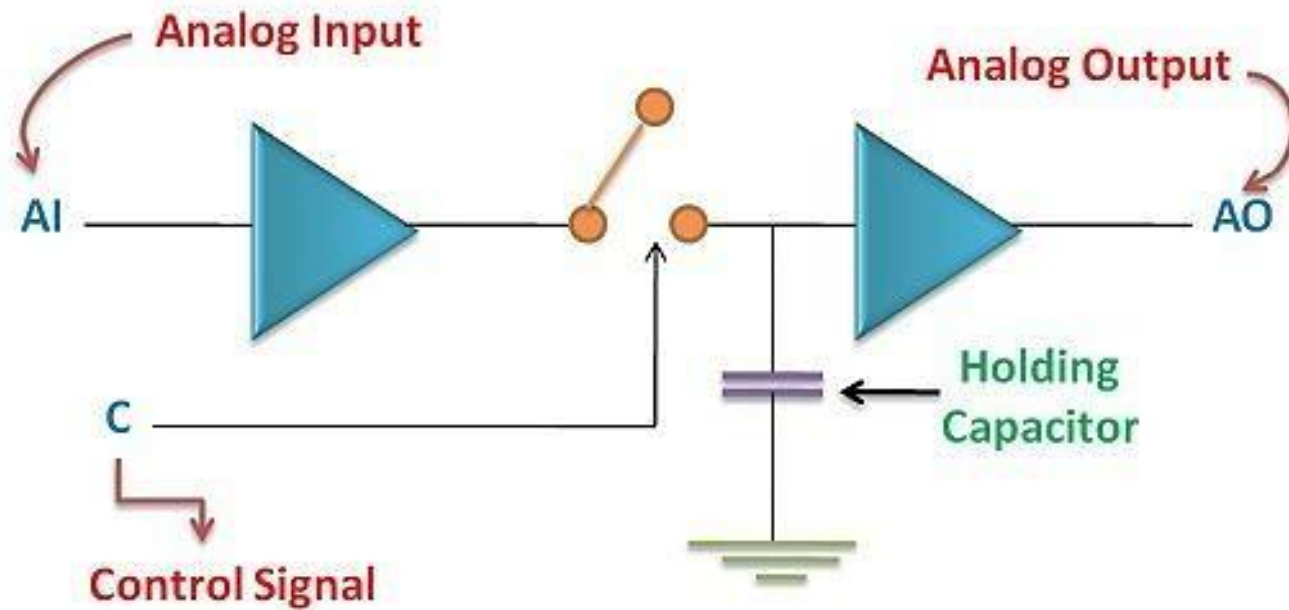
- ✿ It's an electronic circuit which **creates the samples of the input voltage** given, and after that, it **holds these samples** for the definite time.
- ✿ **Sampling time:** The time duration of the circuit generates the sample of the input signal.
- ✿ **Holding time:** The time duration of the circuit during which it holds the sampled value.
- ✿ Sampling time is generally between **1 μ s** to **14 μ s** while the holding time can assume any value as required in the application.

Circuit Diagram of Sample and Hold Circuit

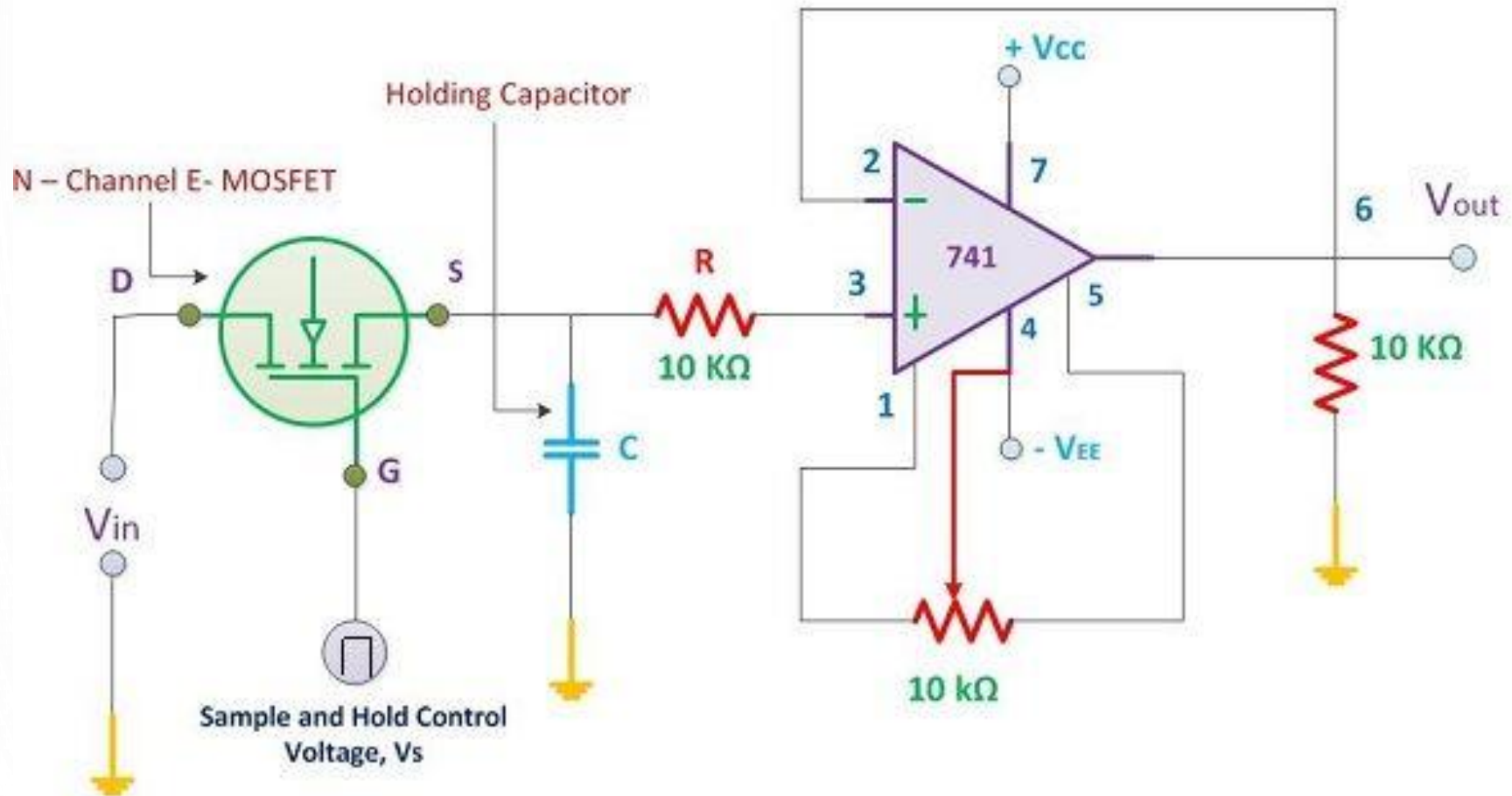


- ✿ When the **switch is closed** sampling process will come into the picture and when the **switch is opened** holding effect will be there.
- ✿ The capacitor connected to the second operational amplifier is nothing but a **holding capacitor**.

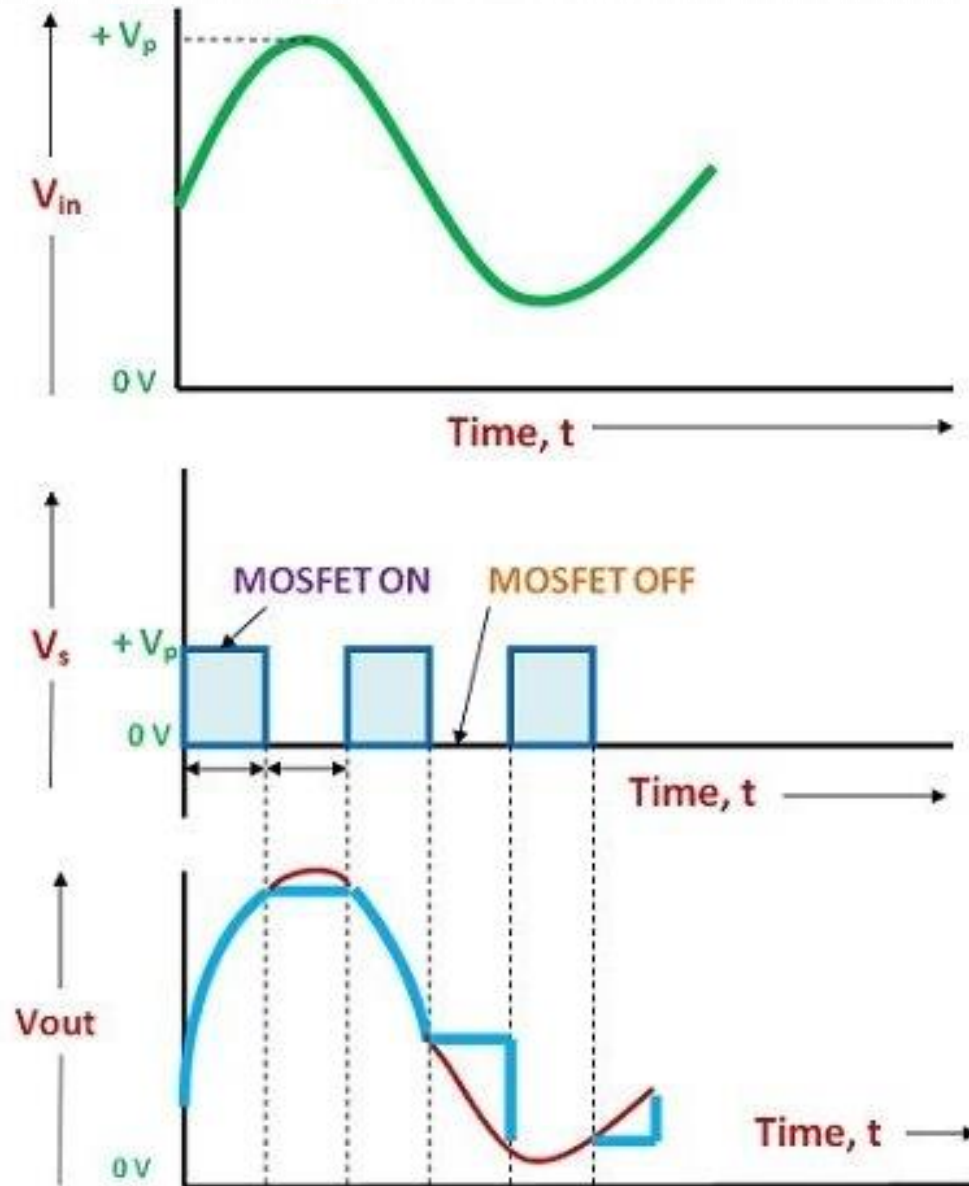
Working of Sample and Hold Circuit



Working of Sample and Hold Circuit

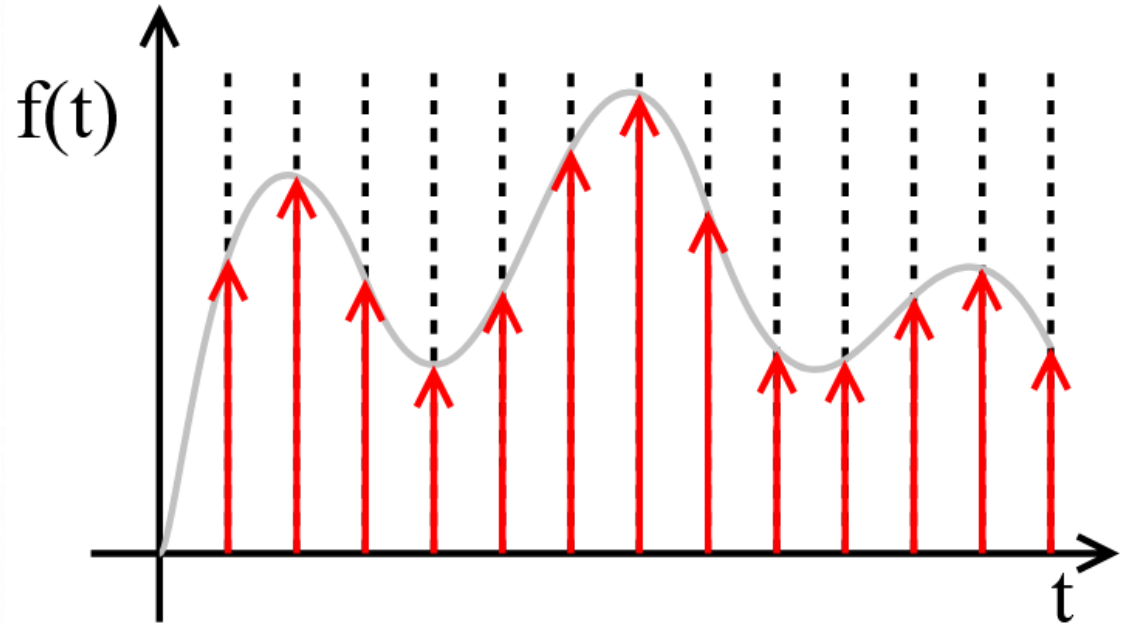


Input and Output Waveforms

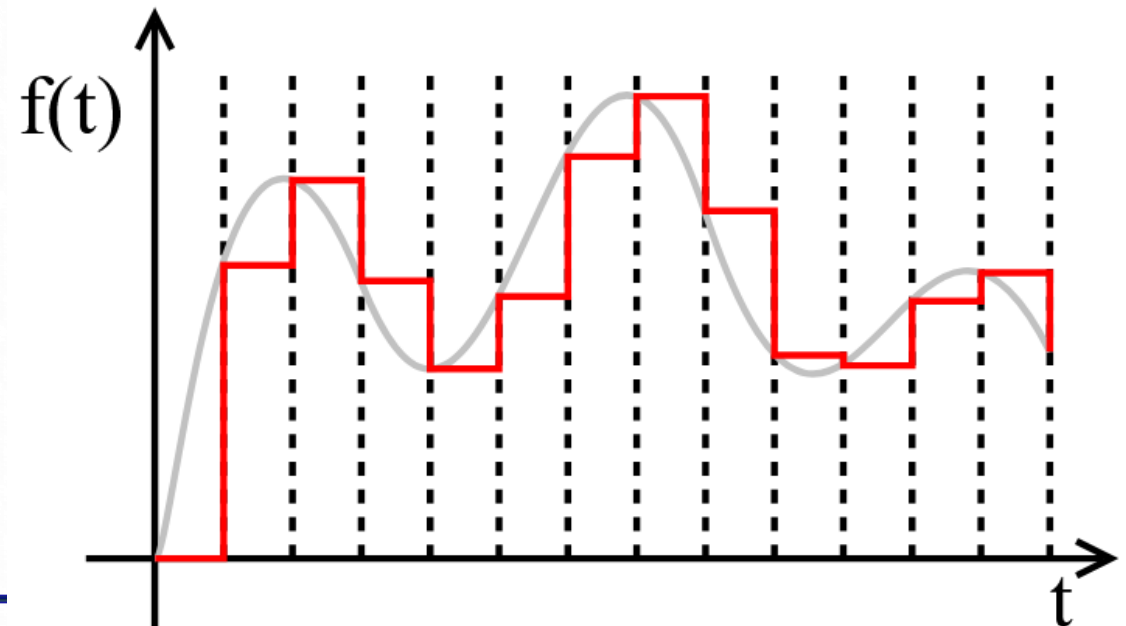


Input and Output Waveforms

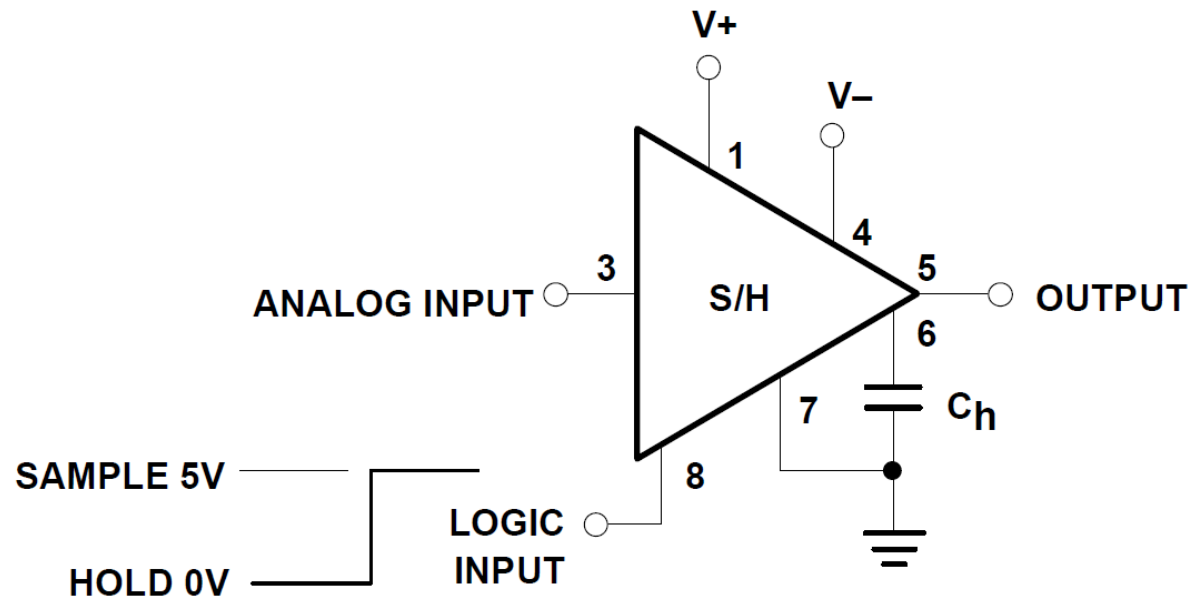
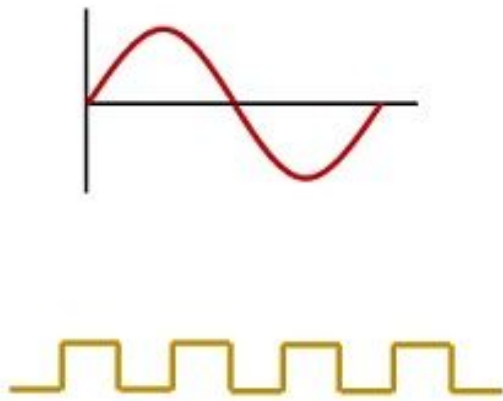
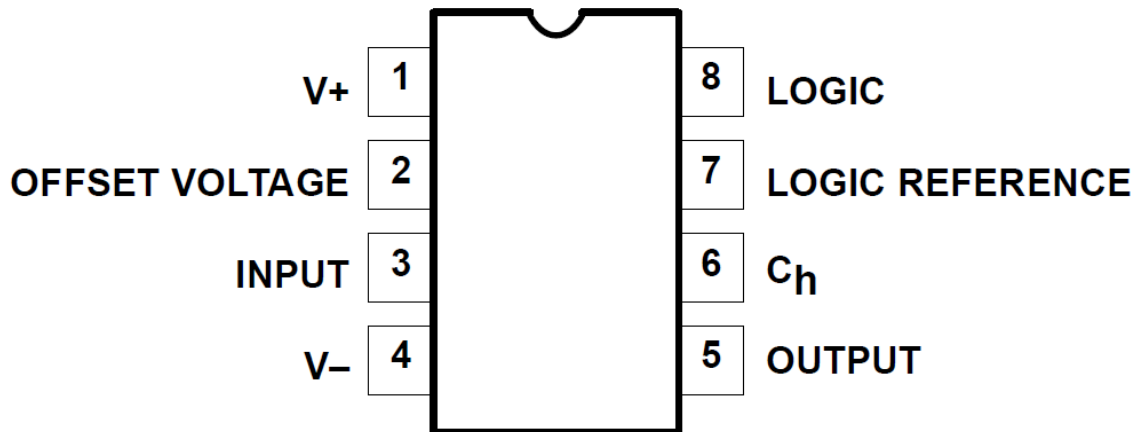
Sample times.



Sample and hold.



LF398 and It's Typical Connection Diagram



Functional Diagram of LF398

