Q117 Sample & Hold

Jan 2014

The Q117 Sample and Hold module is used to capture a signal's voltage level and hold it. The sampling can be gated by an external signal such as an oscillator, by the internal oscillator, or manually. An LED indicates when a sample is being taken.

Specifications

Panel Size: Single width 2.125"w x 8.75"h.
Signal Levels: 10V PP maximum
Internal Oscillator: .5 to 25hz
Power: +15V@30ma, -15V@30ma.

Controls and Connectors

Input Level Control
Allows attenuation of the input signal.

Sample Rate
Sets the rate of the internal sample oscillator.

Internal/External Switch
Selects a sample gate from the internal oscillator or an external source.

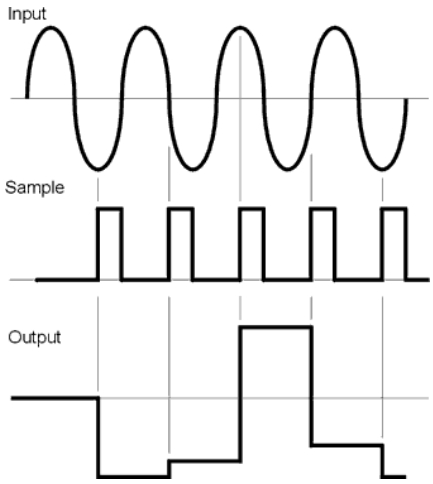
Sample LED
Indicates that a sample gate is present. When the LED comes on, the input voltage will be captured.

Gate Connector
External gate signal input. Active high threshold of 1.5 volts. Must be in External mode. The input signal is latched on the rising edge of the gate signal.

Manual Button
Allows manual creation of a gate signal.

Input Connector
Signal to be sampled (latched).

Output Connector
The sampled signal. This is the value of the input signal when the gate was released.



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Attenuates level of Input signal →

Internal oscillator speed. Flashing LED shows rate →

Determines what causes sampling - either the internal oscillator or an external gate. →

A gate (positive voltage) causes sample when in External mode. In Internal mode, this becomes an output for the internal oscillator pulse. →

Signal to be sampled →

← LED lights when voltage sample being taken.

← Manual sample.

← .Signal Output.

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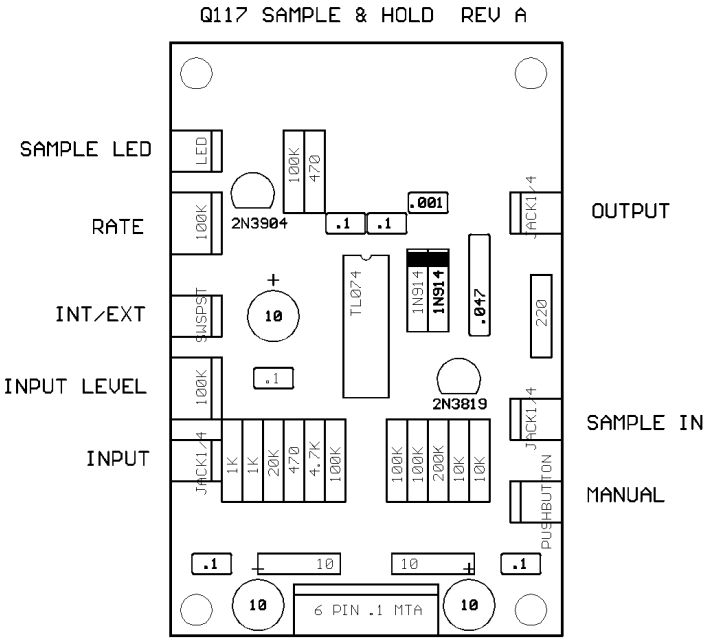
Calibration and Testing

No calibration is required for this module.

1. Turn the Sample rate knob to 10.
2. Switch to Internal mode.
3. Turning Sample rate knob should adjust the speed of the LED.
4. Switch to External mode.
5. Pressing the Manual button should make the LED light.
6. Set the Input level to 10.
7. Apply a 100hz triangle to the input jack.
8. Apply a 10hz square wave to the gate input.
9. Connect the Output jack to an oscilloscope.
10. Oscilloscope should show stair-step triangle.
11. Input level knob should control the signal level.

PC Board Layout



Power Connector

6 pin .1” MTA type connector made by AMP. Available from Mouser Electronics or Digi-Key. Modules have a male PCB mount connector and cable harnesses have a female.

Part Numbers:
Female cable mount: #6404416
Male PCB mount: #6404566

Pinout:
1 = +15v
2 = key (pin removed)
3 = +5v
4 = gnd
5 = -15v

Not all voltages are used on all modules.