Q156 Comparator, LFO, VCA, Mixer

Jan 20, 2020

The Q156 module combines a signal comparator, LFO, VCA and AC Mixer/ Coupler in a single-wide module.

The Comparator section compares two signals and produces a gate output when the + signal is higher than the - signal. A signal can also be compared to a fixed voltage set by the knob. Produce random gates, pulsing gates, convert audio into gates, create effects that apply to only a certain range of notes, and so much more.

The second section is an AC coupler and mixer. Remove DC voltage from a signal, convert gates from the comparator section or from the Q173 Gate Math module into audio, and mix signals.

The third section is a general purpose utility LFO. Triangle and square wave outputs are available. Patch the triangle wave into the comparator section to create PWM.

The bottom section is a simple VCA. Patch the LFO into the VCA to create tremolo, or use an envelope to create decaying vibrato - the possibilities are endless with this unique collection of useful functions.

Q156 Comparator Specifications

Panel Size: Single Width 2.125"w x 8.75" (Moog Unit Format).
Audio Input/Output Signals: 10Vpp
Gate Input/Output Signals: 0-5V
Control Voltage Signals: 0-5V
LFO Speed: .1hz - 25hz, 1hz-250hz
VCA Response: Linear
Power Requirement: +15V@60ma, -15V@60ma. Synthesizers.com standard.

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Panel Overview

The Q156 module consists of 4 sections - Comparator, Mixer / AC Coupler, LFO, and a VCA. These sections can be used individually or patched together for various functions.

Comparator Section. Compares 2 signals. A gate output indicates which is higher. The **-** input can be an external signal or a manually set voltage.

The top knob sets the manual voltage of the **-** input for comparing.

The invertable attenuator knob sets the gain and polarity of the incoming **-** signal.

The output is a gate signal, and can be turned into an audio signal using the AC Coupler section.

Mixer / AC Coupler Use as a 2-channel mixer or to AC-couple signals. Turn gates into audio.

LFO Section. Manual speed control. Square and triangle outputs.

Range switch selects between .1-25hz or 1hz-250hz.

LFO outputs are full 10Vpp.

VCA Section Control amplitude of a signal via voltage control.

0V CV = off.
5V CV = on (unity gain).

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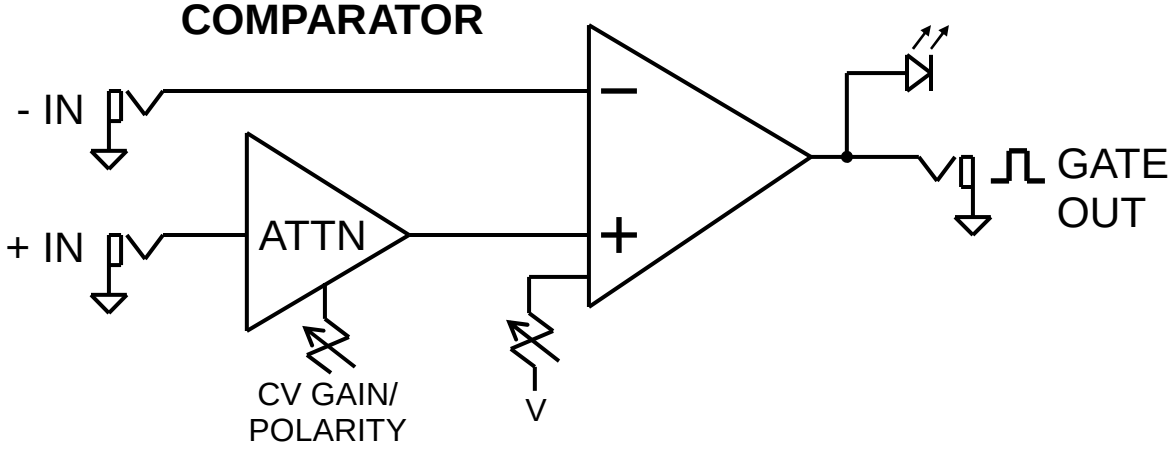
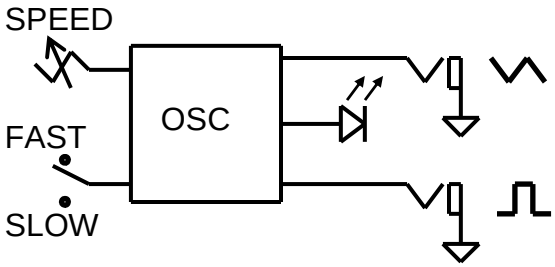
Functional Diagram

The Q156 module consists of four separate functions described by these diagrams.

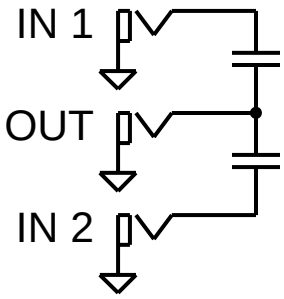
COMPARATOR



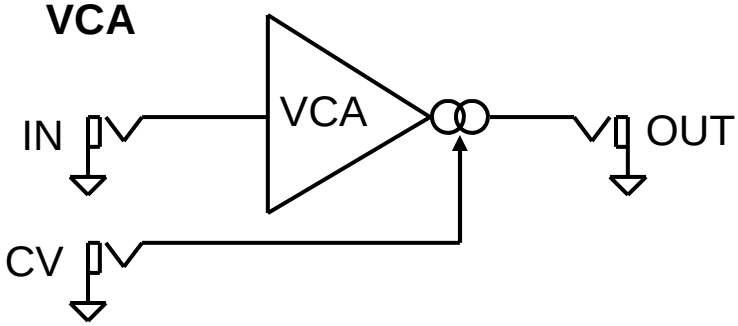
LFO



MIXER / AC COUPLER



VCA



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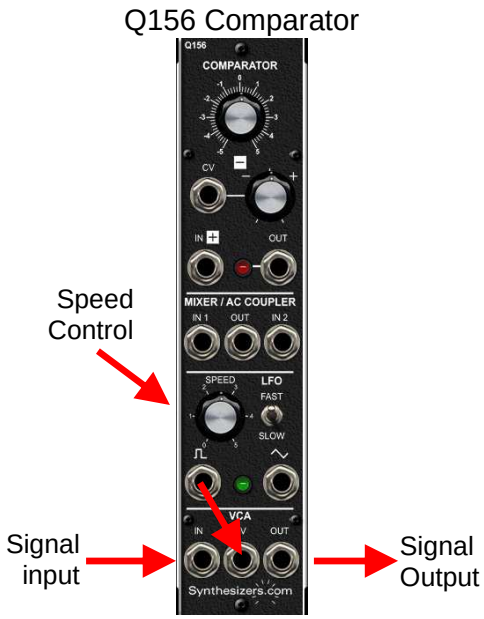
Patch Ideas

The Q156 functions can be used separately or together in many ways, and of course, along with any other module as a signal source or signal modifier.

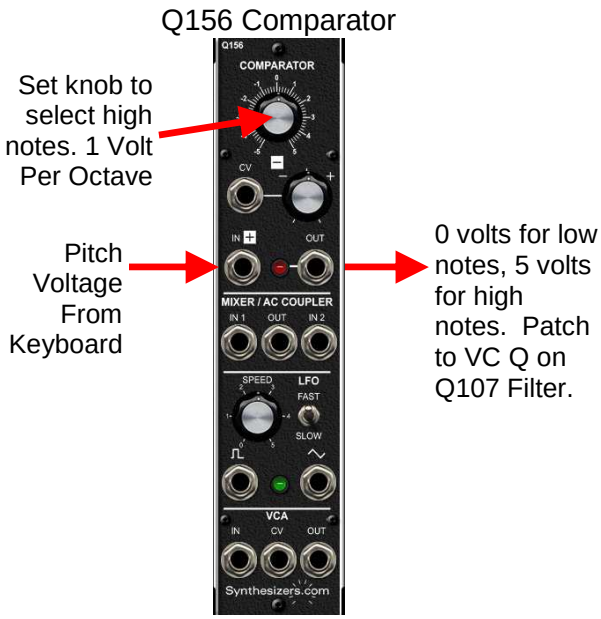
This patch lets you turn a signal on and off at a variable speed. Use it for gates or modulation.

Q156 Comparator



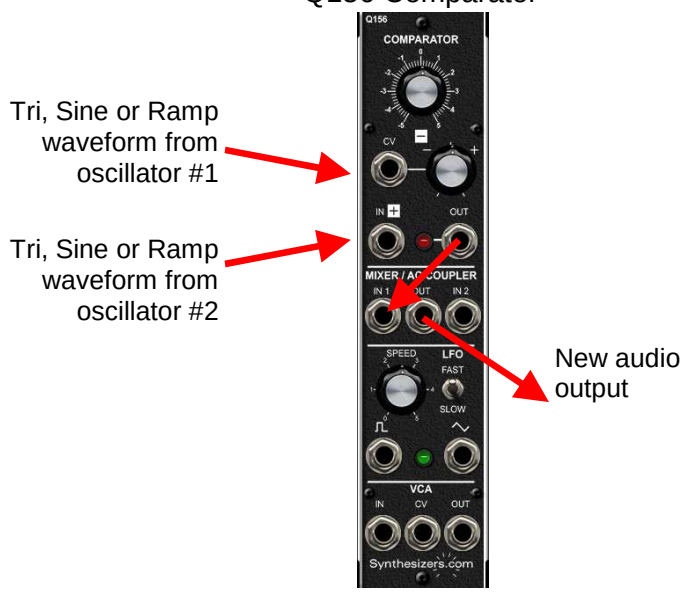
This patch produces a gate for high notes. Use this gate to boost resonance on those notes using the VC Q input on the Q107 filter.

Q156 Comparator



Use the Q156 Comparator to produce an audio signal from two VCOs. The results are an interesting mixture of metallic sounds you can't get any other way. The Coupler section creates audio from the gate.

Q156 Comparator



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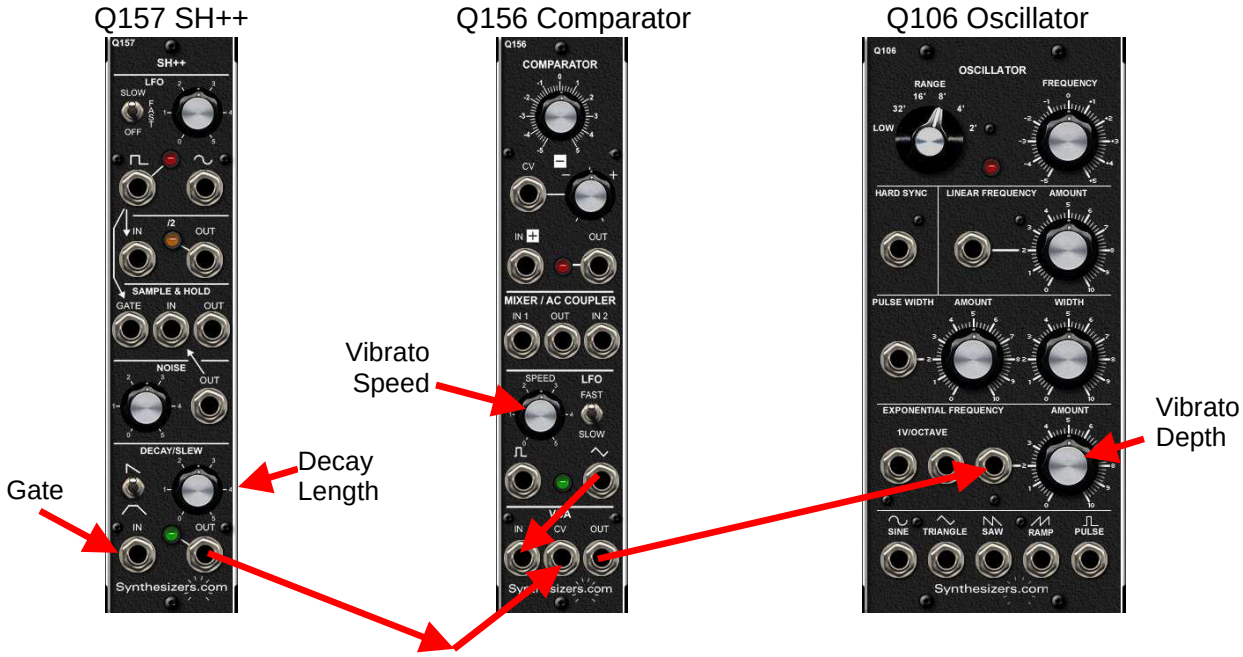
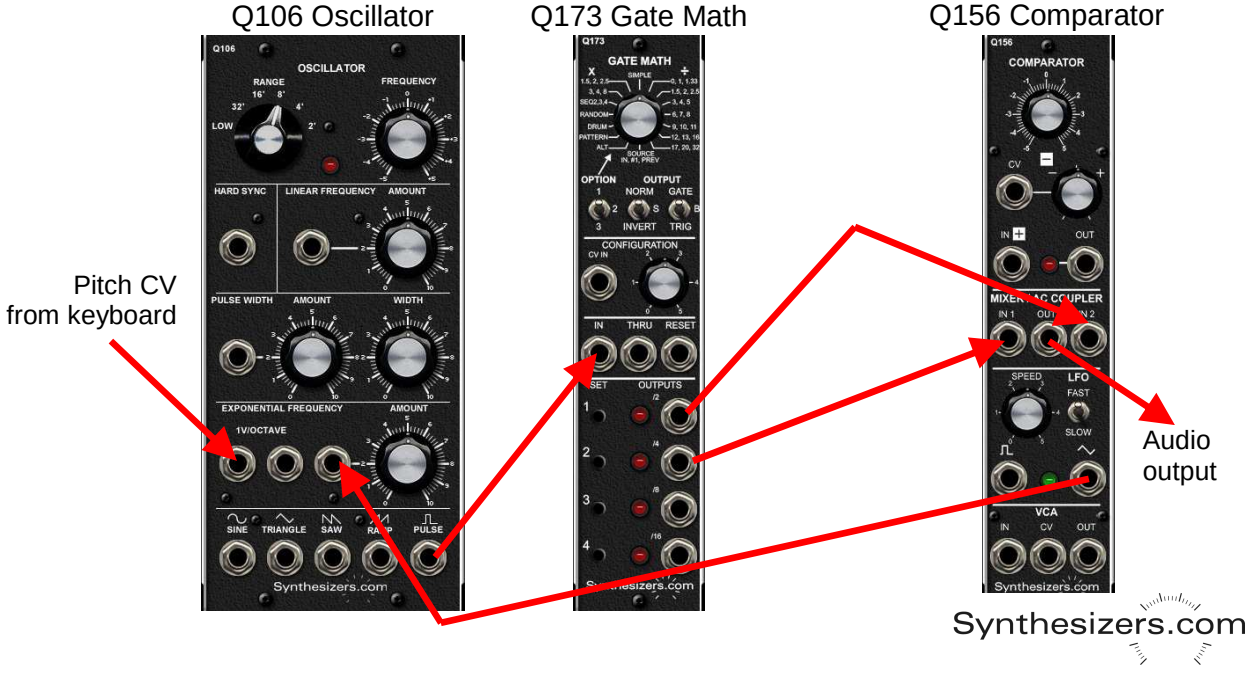
Patch Ideas

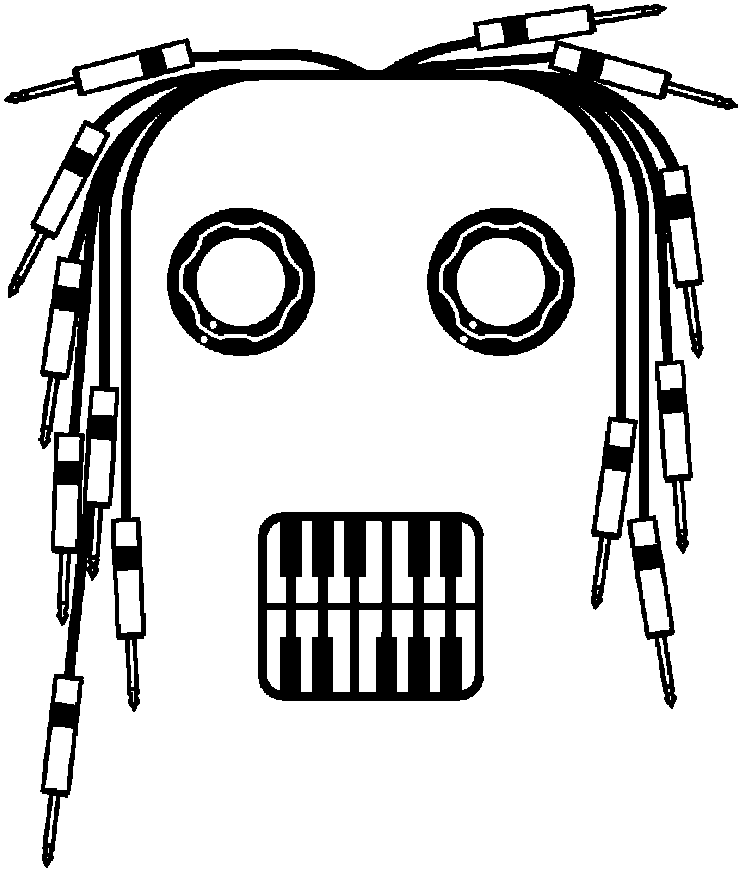
This patch uses the LFO and VCA to produce a decaying vibrato for an oscillator. It needs an envelope from another module such as a Q109 EG or a Q157 SH++ or Q179 EG++.



Use the Mixer/Coupler on the Q156 to convert gates to bipolar audio signals. The Q173 gate math can produce interesting gate patterns at low audio frequencies. You can also use the Q156's LFO to produce vibrato on the Q106 VCO.



Patcher Jack



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