BMC069 Gate 2 Trigger
https://www.bartonmusicalcircuits.com/4hp/g2t/index.html

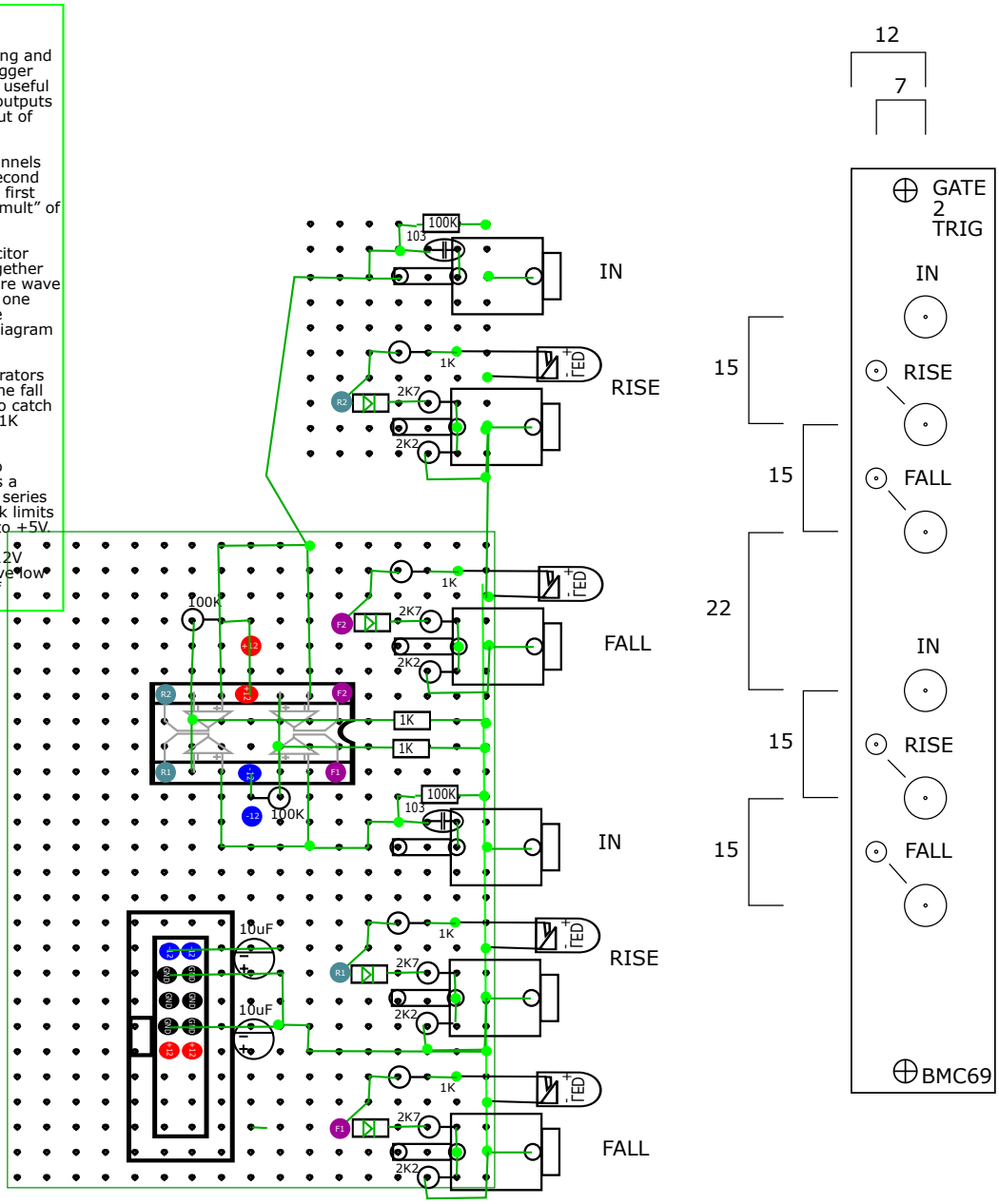
This module creates trigger outputs from the rising and falling edges of a gate or square wave input. Trigger length is ~1ms and outputs +5V. The module is useful when needing a trigger from a source that only outputs gates, or for converting a clock signal into two out of phase clock signals of the same frequency.II.

Above is the schematic. The module has two channels thatare identical except that the switch on the second channel's inputjack is connected to the tip of the first channel, this lets channeltwo act as a buffer or "mult" of channel 1 when not in use.

The input jack's tip is connected to a .01uf capacitor whichconnects to a 100K resistor to ground. Together these for a highpass filter. When applying a square wave through this filter, youget two very short pulses, one positive from the rising edge of thewave and one negative from the falling edge of the wave. Thediagram to the right shows the difference between input andfiltered.
The filtered wave is then sent to a pair of comparators oneinverting with a threshold of -.12V to catch the fall and one non-inverting with a threshold of .12V to catch the rise. The thresholdvoltages are set by 100K/1K voltage dividers.

The outputs of the comparators are connected to LEDsthrough current limiting resistors, as well as a network of aswitching diode and 2.7K resistor in series and finally a 2.2Kresistor to ground. This network limits the comparators' outputs of-12V to +12V to 0V to +5V.

T he power connections are on the left. The +/-12V voltage rails are filtered by a 10 ohm/10uf passive low pass filter and further filtering is done by a .01uf capacitor at each power pin of the TL074.



SEMICONDUCTORS

Name/Value	QTY
TL074	1
1N4148	4
LED	4

RESISTORS

Name/Value	QTY
10 ohms	2
1K	6
2.2K	4
2.7K	4
100K	4

CAPACITORS

Name/Value	QTY
.01uf (103)	4
10uf	2

OTHER

Name/Value	QTY
14 pin DIP socket	1
Power connecter	1
Jacks	6

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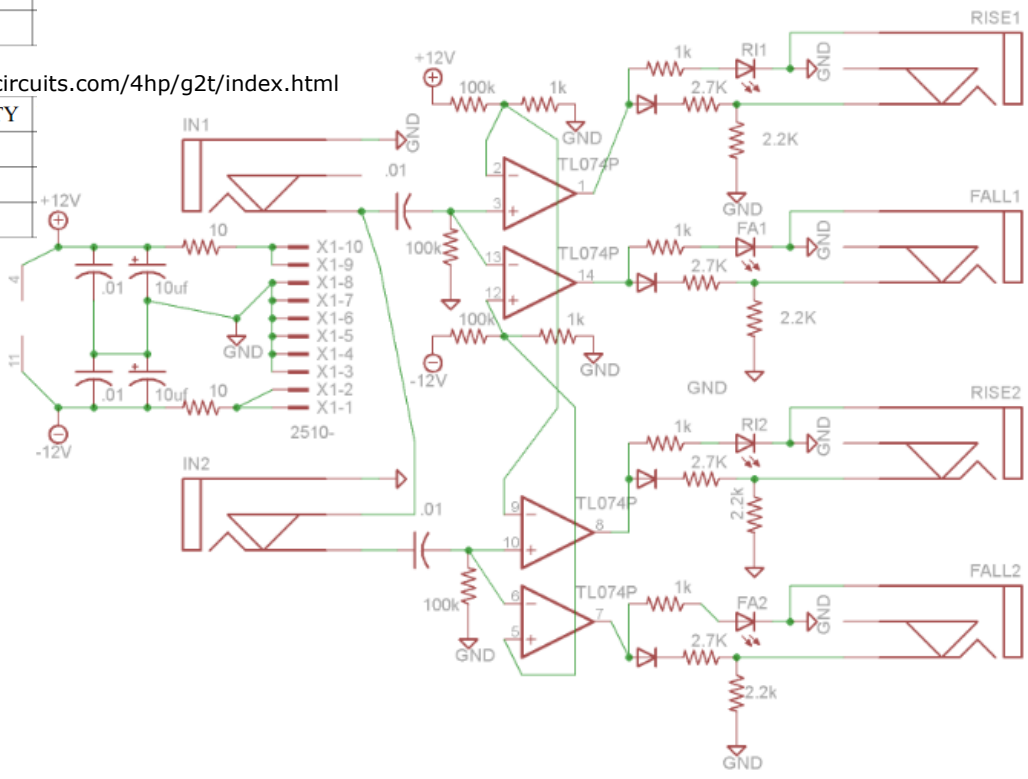

I. Schematic