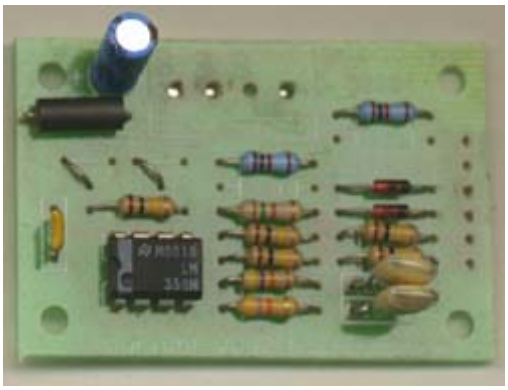
# Gate to Trigger Converter

for music synthesizers.



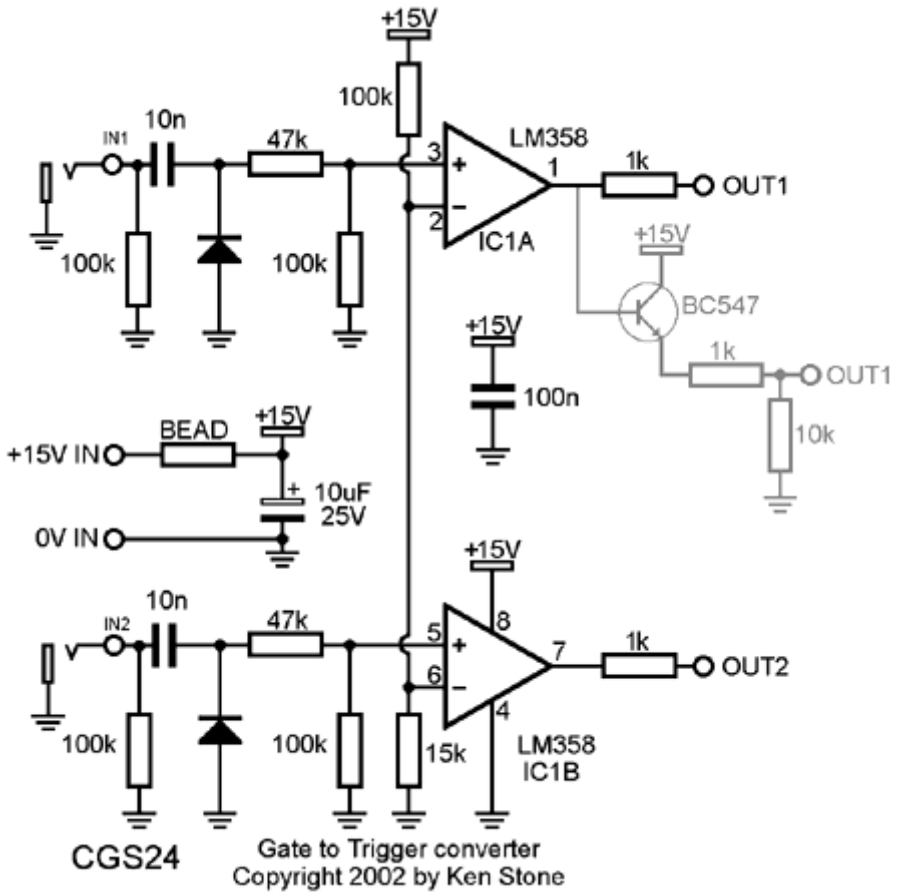
This module contains a pair of two gate to trigger converters, allowing key-down gate signals, or those from gate sequencers etc. to be converted into a much narrower trigger signal as required by some percussive effects. These may come in handy when adapting various drum sound generators to synthesizer use.

**How to use this module:**

Connect the inputs to a gate source. Connect the outputs to a module that requires a trigger input. For example, all "pulse" outputs of the gate sequencer could be converted to trigger pulses by putting one gate to trigger converter in line with the incoming clock signal.

Alternately, the module can be used as a hard wired adapter when adapting other circuits such as organ rhythm units to synthesizer use.

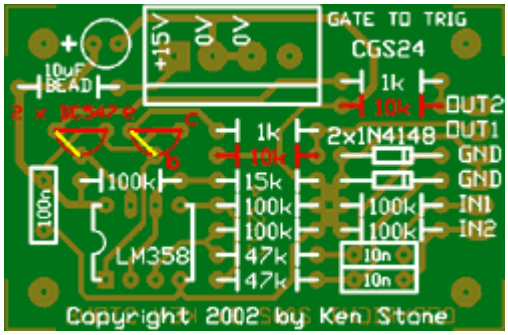
**A little on how it works:**




The schematic of the Gate to Trigger Converter.

Each of the two gate to trigger converter is functionally identically. It consists of a network designed to convert a positive going square or rectangular wave into a brief positive going pulse. An op-amp wired as a comparator cleans and buffers the resultant pulse. The output can be taken directly from the op-amp, or from the optional transistor buffered outputs, as shown in grey on the schematic (first run of PCBs only). One buffer has been omitted from the diagram for clarity.

**Construction**




The component overlay. Connections can be determined from the circuit diagram. The components in red can be omitted, if the links in yellow are included. The option for these components is only availableon the first run of this PCB.

Before you start assembly, check the board for etching faults. Look for any shorts between tracks, or open circuits due to over etching. Take this opportunity to sand the edges of the board if needed, removing any splinters or rough edges.

When you are happy with the printed circuit board, construction can proceed as normal, starting with the resistors first, followed by the IC sockets if used, then moving onto the taller components.

Take particular care with the orientation of the polarized components, the electrolytics, diodes, transistors and ICs.

When inserting the ICs in their sockets, take care not to accidentally bend any of the pins under the chip. Also, make sure the notch on the chip is aligned with the notch marked on the PCB overlay.

The optional transistor buffers have been deleted from successive runs of this PCB, so the following only applies if you have boards from the first run: If you decide not to install the optional transistor buffers, a link should be placed from the base (b) to the emitter (e) pads of each transistor position. The 10k pull-down resistors should also be omitted.

**Notes:**

- VER1.1 PCB is electrically identical to the REV1 PCB. The only difference is the addition of anchor holes for the wiring.
- Works on +/(-)12 volts.
- A 10 to 22 ohm resistor can be used instead of the ferrite bead. If you don't care about power-rail noise, just use a link instead.
- Please email me if you find any errors.

**Parts list**

This is a guide only. Parts needed will vary with individual constructor's needs.

| Part | Quantity |
|---|---|
| **Capacitors** | |
| 10n | 2 |
| 100n | 1 |
| 10uF 25V | 1 |

If anyone is interested in buying these boards, please check the PCBs for Sale page to see if I have any in stock.

Can't find the parts? See the parts FAQ to see if I've already answered the question. Also see the CGS Synth discussion group.

| | |
|---|---|
| **Resistors** | |
| 1k | 2 |
| 10k | (2) |
| 15k | 1 |
| 47k | 2 |
| 100k | 5 |
| **Semi's** | |
| LM358 | 1 |
| 1N4148 | 2 |
| BC547 (or sim) | (2) |
| **Misc.** | |
| Ferrite Bead (or 10R resistor) | 1 |
| 0.156 4 pin connector | 1 |
| cgs24 PCB | 1 |



**Modular Synth Home**

Disclaimer