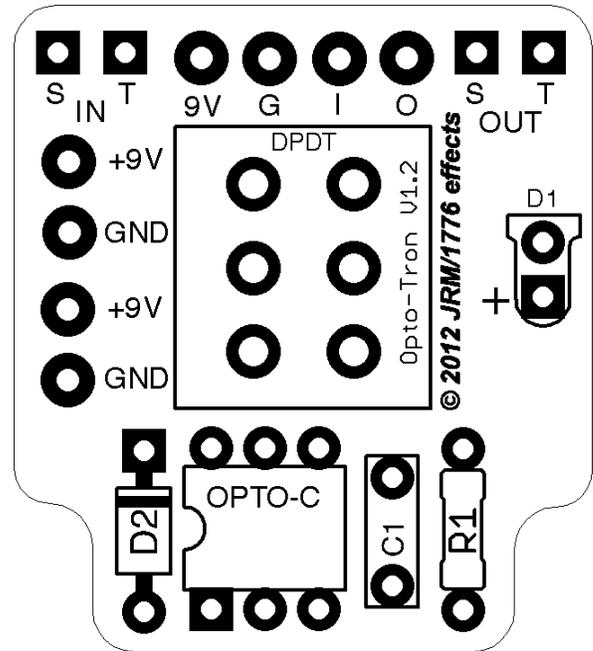
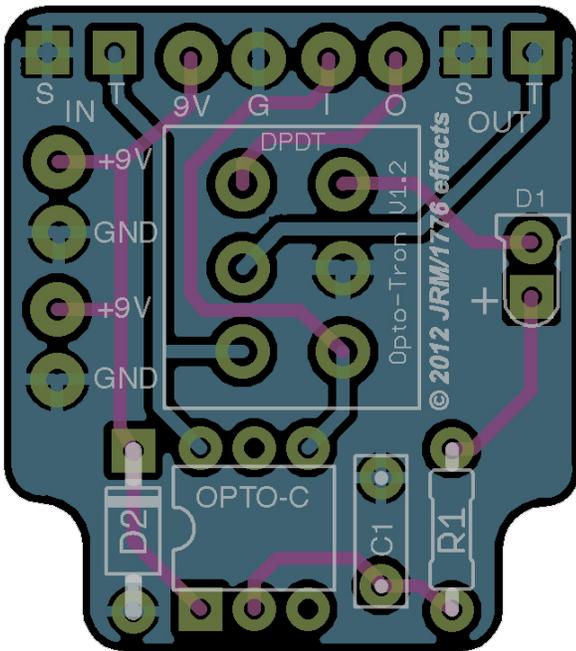


# OPTO-TRON

OPTICAL BYPASS BOARD

©2012 1776 EFFECTS/JRM



## COMPONENTS

C1	220nF (film)
D1	LED
D2	1n4001
OPTO-C	H11F1
R1	1k to 4k7 (CLR, do not use a resistor higher than 4k7)
DPDT	Alpha 107-SF12011-L DPDT

## Opto-Tron

The Opto-Tron bypass board is based off of the Voodoo Labs style of bypass. It utilizes an optocoupler which acts as an on/off switch. The optocoupler essentially has two sides, pins 1 and 2 are hooked up to an infrared emitting diode (IRED), and the other side, pins 4 and 6 are hooked to a photodetector. When voltage is applied to pin 1 the optocouplers IRED lights up, the photodetector on the other side of the optocoupler then decreases in resistance “opening the switch” When voltage is removed the IRED turns off and the photosensor increases in resistance “closing the switch”

The pedal indicator LED and current limiting resistor are wired in series to the optocouplers IRED so it will turn on and off together through the DPDT

When you hit the DPDT switch to activate the effect, the input is connected through the “open” optocoupler and sent to the circuit input. The circuit output is then directly connected to the output jack via the DPDT switch.

When you turn the effect off the optocoupler shuts off the connection between input jack and the circuit input. It routes the untouched input signal to the output jack via the DPDT. While the pedal is turned off the ground connection through the DPDT is now grounding the effect input. (It was previously used to complete the LED/IRED circuit)

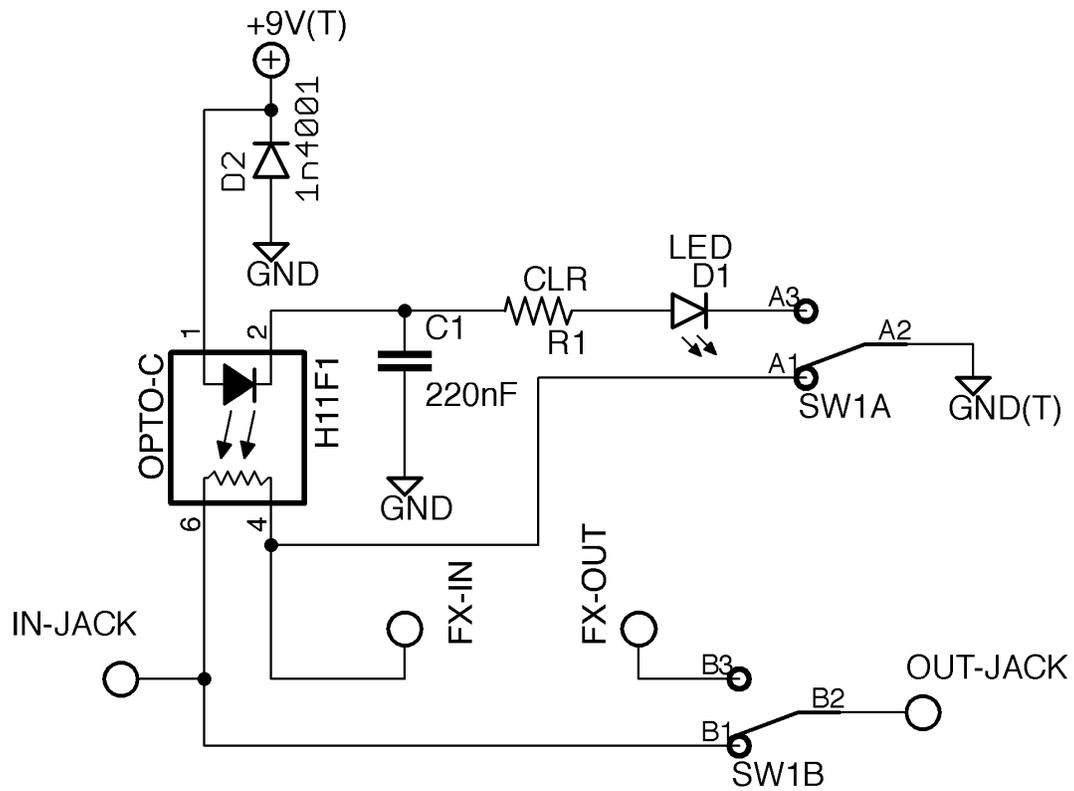
The “true-bypass” diehards would not consider this design true bypass because the optocoupler is in the circuit, but it functions the same in bypass mode as a standard mechanical 3PDT switch. The input signal does incur a very minimal amount of resistance (less than 300 ohms) when it travels through the optocoupler to the effect input, but on bypass the signal does not travel through the optocoupler as it is “closed” and no resistance to the virgin signal is incurred.

### ADDITIONAL NOTES:

The Opto-Tron can be powered above 9V but is not recommended for over 18V. For -9V effects a road rage board or equivalent must be used. The auxiliary pads can power the road rage board. The -9V effect can then be powered via the road rage.

Socket or carefully solder the H11F1. Take note that pin 1 is soldered to the square pad!

# OPTO-TRON SCHEMATIC



# OPTO-TRON WIRING

