Dial Controlled RGB Light

Description:

Drives up to 1 watt of LEDs per color. Perfect for a single 3 watt star RGB LED or up to 20 5mm RGB LED. Supports common anode or common cathode, changed via jumpers. The versitility of the driver supports a range of LED(s) and input voltage combinations.

Can be used for mood lamps, case mods, battery operated lanterns, display lights, and more.

Features:

- Drives up to 2 watt of LEDs per color.
- Dial and Pushbutton control of speed and functions.
  - Auto fade w/ speed adjust via dial
  - Manual color select via dial
  - Dimming via dial
- Remembers user settings when turned on/off
- Pushbutton changes function, quick press changes between auto and manual, push and hold enables dimming
- Compatible with common anode, common cathode or single color LED(s)

Parts shown are for Common Anode LED with 5 volt Input

Specification:

Full kit with 3 watt RGB LED

Input Voltage	5v*
Input Current	< 1 Amp
Output Red	~350ma
Output Green	~350ma
Output Blue	~350ma
Connectors	0.1" Pitch
Dimension	1.5"x1.5"x0.5"

Board with Custom Resistors

Input Voltage	5v-12v**
Input Current	< 1 Amp
Output Red	up to 2 watts
Output Green	up to 2 watts
Output Blue	up to 2 watts
Connectors	0.1" Pitch
Dimension	1.5"x1.5"x0.5"

*5v available if the 7805 is not installed

**7-12 volts availible with simple modifications

see Fig 4a & 4b

For Questions or Comments E-Mail to Support@ChromationSystems.com

Dial Controlled RGB Light

Standard Layout
see Fig. 3c for Header Info

Header 1
  1. Blue LED
  2. Green LED
  3. Red LED
  4. Positive/Negative

Header 2
  1. Positive, +5 v
  2. Negative, 0v
  3. Switch
  4. Potetiometer Center Tap

R1 - 5.1 ohm, 1w
R2 - 16z ohm, 1w
R3 - 16 ohm, 1w
R4 - 500 ohm, 1/4w
R5 - 500 ohm, 1/4w
R6 - 500 ohm, 1/4w
R7 - 10kohm
T1 - Transistor, 2.5watt
T2 - Transistor, 2.5watt
T3 - Transistor, 2.5watt
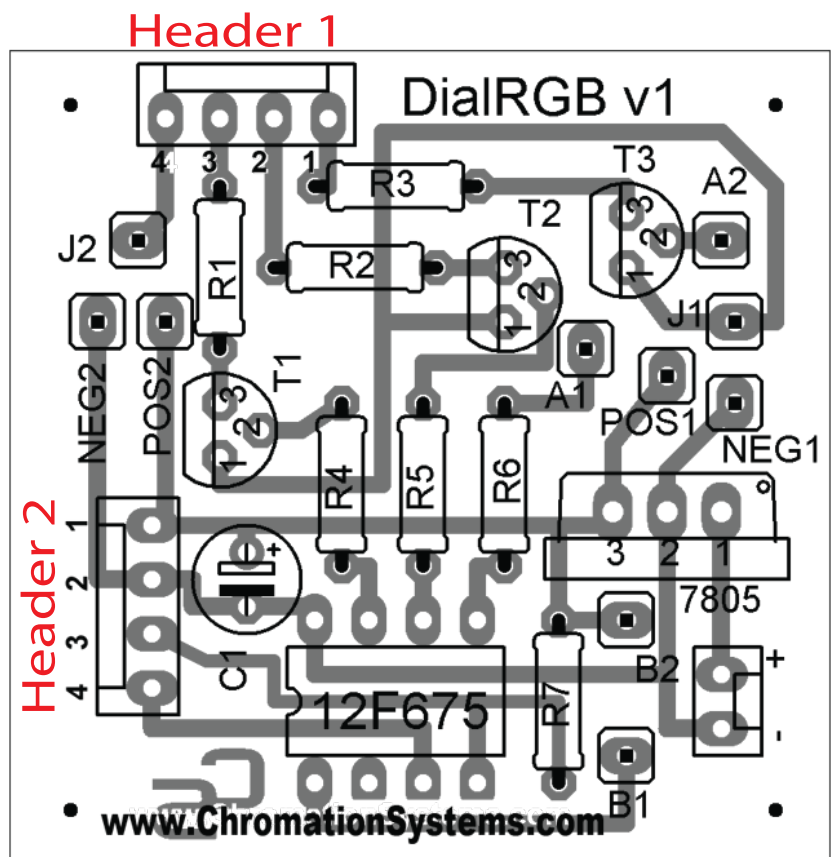C1 - 0.1 uf disc capacitor
Jumper B1 to B2
Jumper A1 to A2
Also:
2 Pin Header
8-Pin Socket
12F675 PIC Microcontroller

Header 1

Header 2

DialRGB v1

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Tools Required:
- Soldering Iron
- Solder
- Needle Nose Pliars

Optional:
- Volt Meter
- Electrical Tape
- Hot Glue Gun

Dial Controlled RGB Light

For Common Cathode LED

J1 jumped to POS1
J2 jumped to NEG2
Header 1, pin 4 goes to LED cathode
T1-T3 are placed opposite of Top-Side outline

For Common Anode LED

J1 jumped to NEG1
J2 jumped to POS2
Header 1, pin 4 goes to LED anode
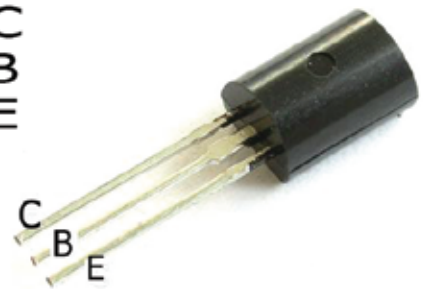**T1-T3 are placed in as pictured**

Common Anode:
1 - E
2 - B
3 - C

Common Cathode:
1 - C
2 - B
3 - E

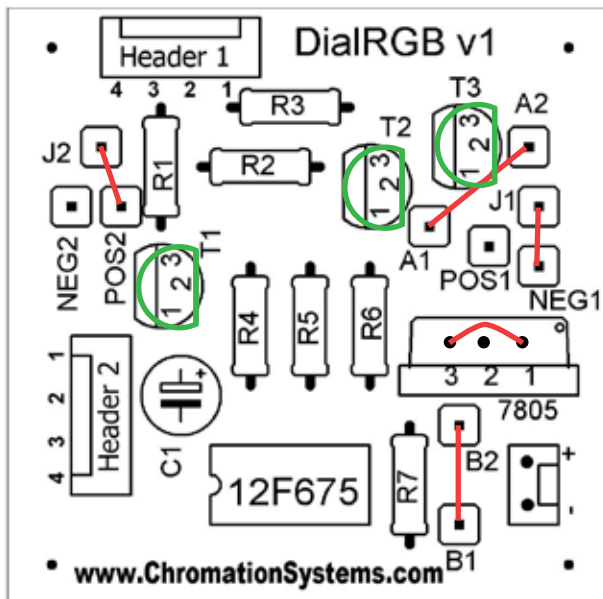**Common Anode, 5 volt Input**

Fig. 2a
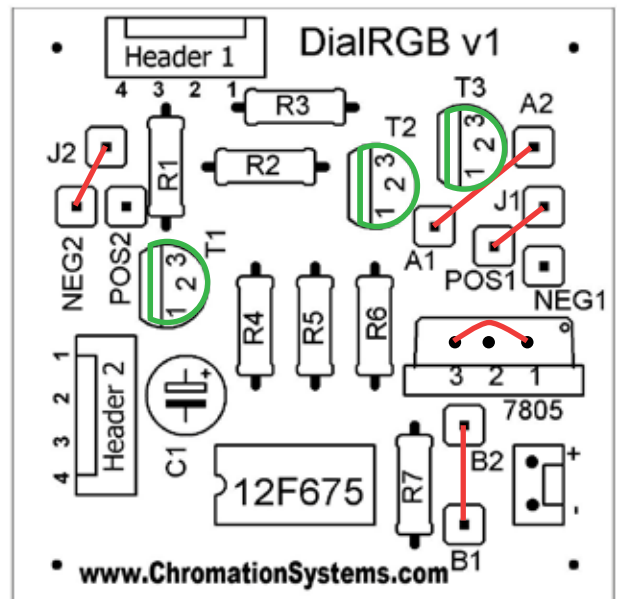
Common Cathode, 5 volt Input

Fig. 2b

When using 5 volt as the input voltage, the 7805 is not used. So a jumper must be ran from Pin 1 to Pin 3, and the Solder pad for pin 2 needs to be filled in with solder. *see Fig 2a & 2b*
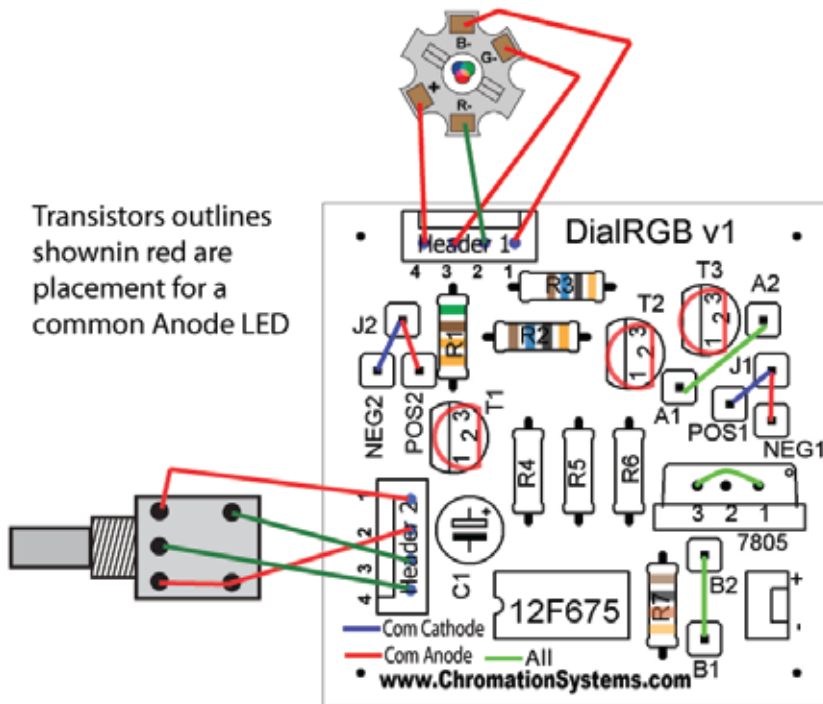
Dial Controlled RGB Light

Transistors outlines shownin red are placement for a common Anode LED

DialRGB v1

Header 1

Com Cathode
Com Anode — All
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Fig. 3c

Pictured is the layout for the full kit with 3 watt RGB LED, with 5 volt input.

Header 1
1. Blue LED
2. Green LED
3. Red LED
4. LED Positive/Negative

Header 2
1. Positive, +5 v
2. Negative, 0v
3. Switch
4. Potetiometer Center Tap
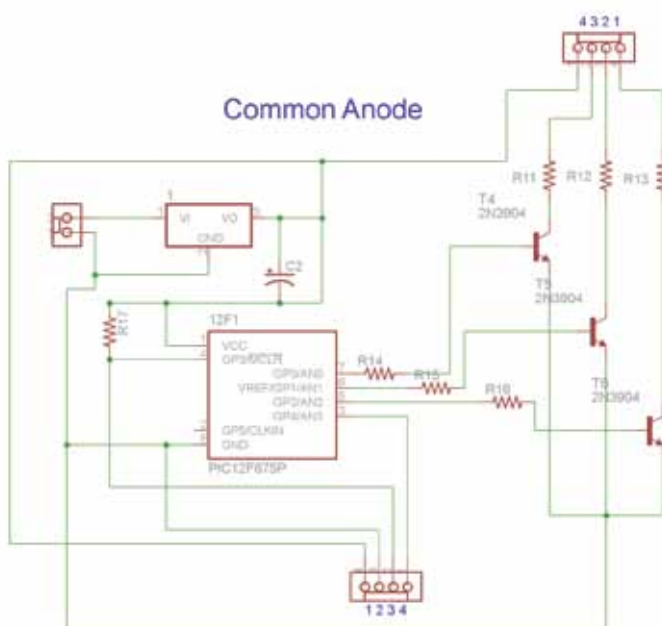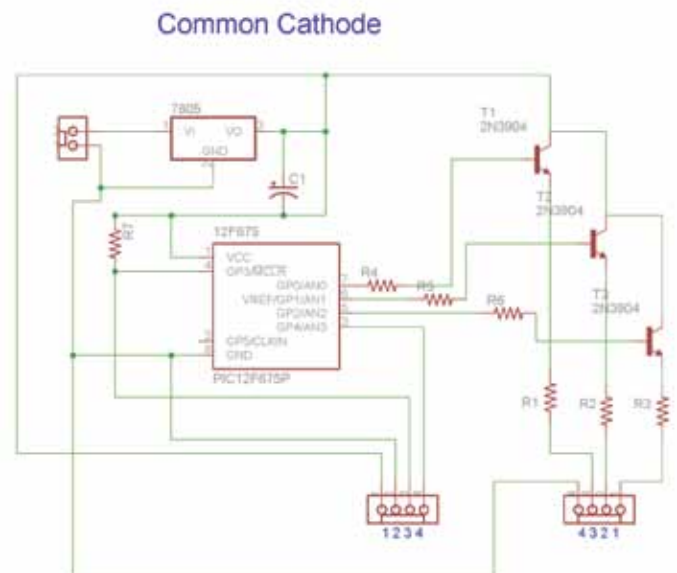
*careful not to plug the into the wrong header

Common Anode

Fig. 3a

Common Cathode

Fig. 3b

*full size schematics availble on the website.

Dial Controlled RGB Light
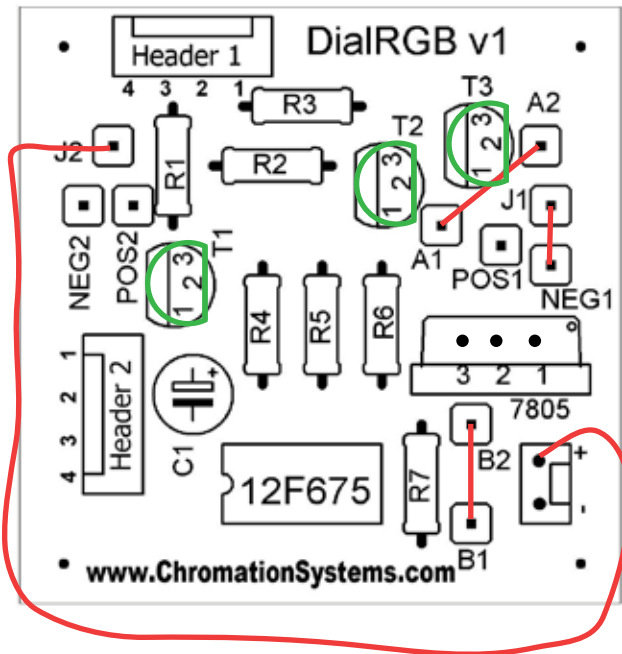
Common Anode, 7+ volt Input
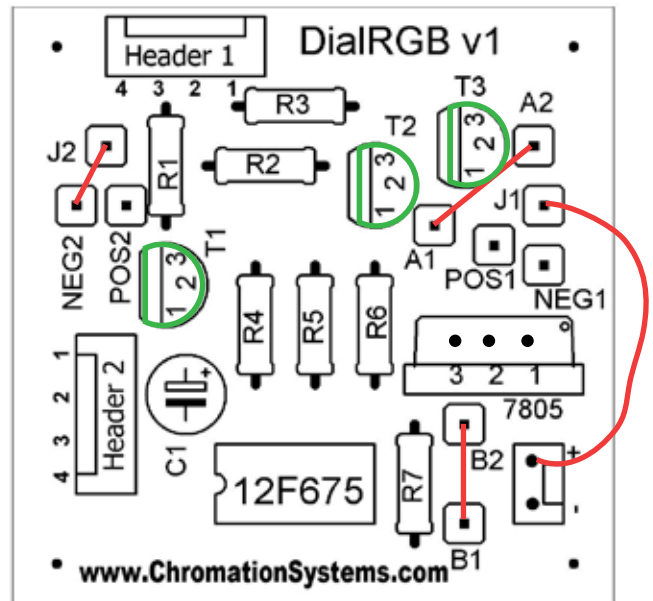

Fig. 4a

Common Cathode, 7+ volt Input

Fig. 4b

If a input voltage greater than 5 volts is desired, the voltage going to the LEDs will be the same as the input. That requires jumper wire be ran, a 7805 to be installed, and replacing R1, R2, R3 with correct values based on the LEDs being used.

The PCB and supplied components (Full Kit) can power no more than 2 watts per color channel or 500 miliamp per color channel.

If using a common anode configuration, a wire is ran from the positive voltage input to J2, and J1 is jumped to NEG1. see Fig. 4a

If using a common cathode configuration, a wire is ran from the positive voltage input to J1, and J2 is jumped to NEG2. see Fig. 4b

Again be sure that R1, R2, R3 are replaced with correct values. Do a search for "LED Resistance Calculator" or send an e-mail to our Support.

If 12 volt RGB Light Strip is used R1, R2, R3 are all jumped with 22 gauge or more solid strand wire. Since the light strip has its own current regulation.