

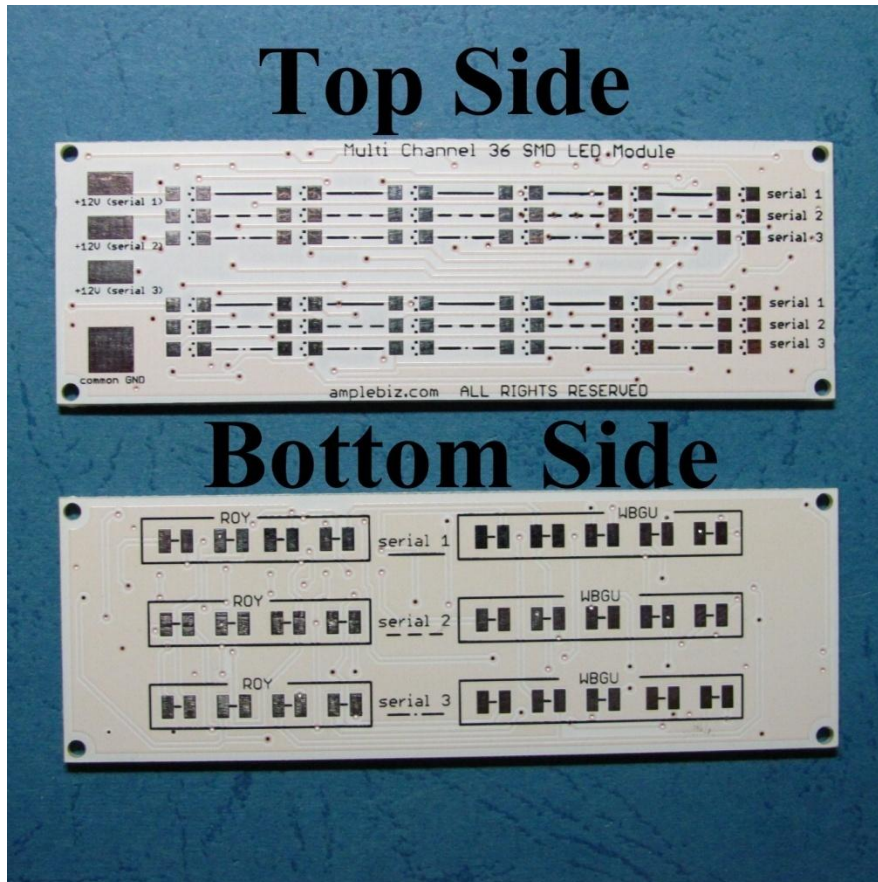


Printed Circuit Board for 36 SMD LED Module

(3 Individual Channels for color blending and dynamic effects)

Data Sheet and Operating Guide

Version 1.0





Printed Circuit Board for 36 SMD LED Module (3 Individual Channels for color blending and dynamic effects)

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1.1 General Description : -

- This Board is designed with the intension to assembly a mixed color flood mode light module OR a single color flood mode module on the same printed circuit board.
- In order to make the board thin for some lighting requirement such as under cabinet light, bedroom corner night light, the light of this board comes from 36 pcs of 1206 SMD LEDs. Thickness for a fully assembled module is less than 4mm
- This board can also satisfy requirements of color mixing/blending, 3 different colors LED can be installed and light up individually or mixed. Of course LED of same color can be installed as a very basic light source.
- Advanced users may apply PWM technology for more light effects like dimming, flashing, scrolling.

1.2 Features : -

- Single Voltage for different LED colors without resistors.
- 36 pcs 1206 SMD in 3 series (6 rows)
- Each series contains 12 LEDs (2 rows)
- Individual power input for each series for steady light source, or light show with different effects, you need a specially designed driver for fancy light sources such as flashing, dimming, scrolling among series
- Control Panel available at bottom side for different colors
- LED grouping and spacing are clearly indicated
- Holes at 4 corners for installation with screws and nuts

1.3 Applications : -

- Single color module as light source
- 3 colored module with different light color favorites
- Night Vision light source with IR LEDs, or a White + Infra Red module to provide light for different purposes
- Stage light with different light effects (need external drivers)
- Soft and flood mode under cabinet light with slim board thickness
- Auxiliary plant light, Red for flowering, Blue for leave
- Any other color blending from Ultra Violet to Infra Red

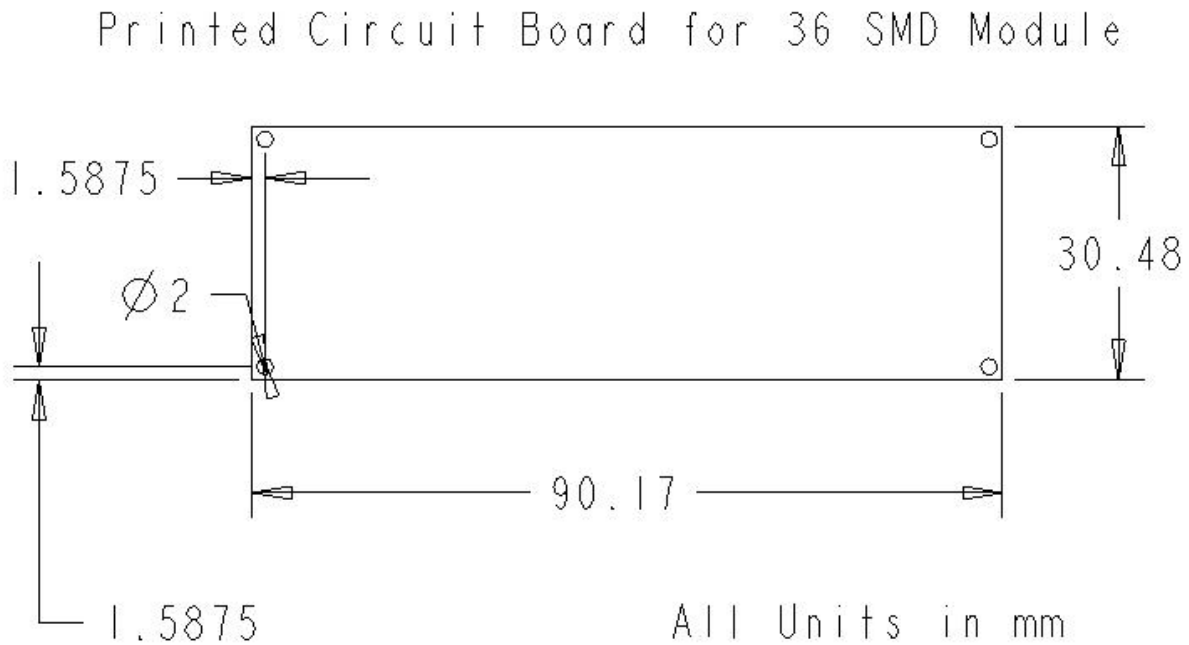


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2.1 Circuit Board Data : -

- Board Shape : Rectangular
- Board Dimension : 30.5mm x 90.2mm
- Board Thickness : 1.6mm
- Board Material : FR-4
- Board Color : White

2.2 Physical Dimension : -





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3.1 LED Grouping : -

We classify LED into 3 groups according to their forward voltages

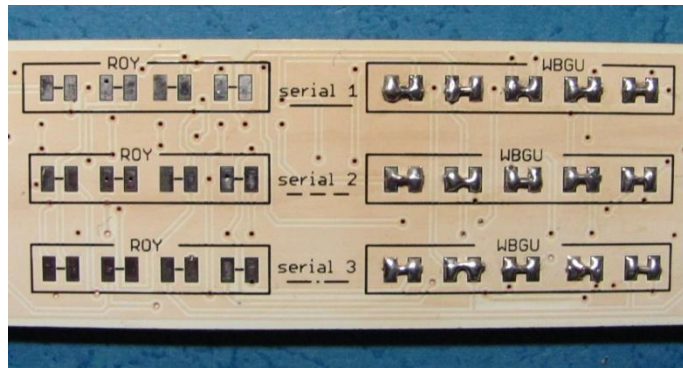
- Infra Red (IR with forward voltage 1.5V)
- Red, Orange (Amber), Yellow (ROY with forward voltage 1.8 to 2.0V)
- White, Blue, Green, Ultra Violet (WBGU with forward voltage 3.0 to 3.3V)

Understanding the classification is very important in basic and advanced setting of LED colors

3.2 Control Panel Pad Pairs : -

You can find pads in pairs on bottom layer of the board, this is what we call Control Panel.

Basically each series contains 1 group of identical LEDs, please make sure which group (IR, ROY, WBGU) of the LED belongs to. For example, if blue is intended to be installed in series 1, then all pad pairs of WBGU of series 1 should be shorted as per picture.



DO NOT short the ROY pad pairs in series 1, this will damage LEDs and in worst case, your power supply. Also be very careful after the module is turned on, an accidental shortage of the bottom part will also damage LEDs or Voltage Supply, this is common sense for an electrician

The big "Common GND" is to be connected to negative of system power. The individual power supply pads are to be connected to positive of system power.

If light effects are required, all different power pads will be connected to output of light effect driver, for example, scrolling among series. You may contact us at info@amplebiz.com for more information about light effect drivers.



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3.3 Advanced Settings : -

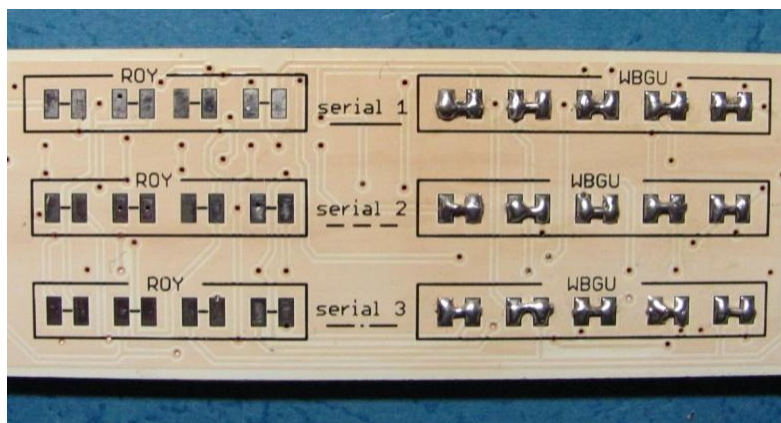
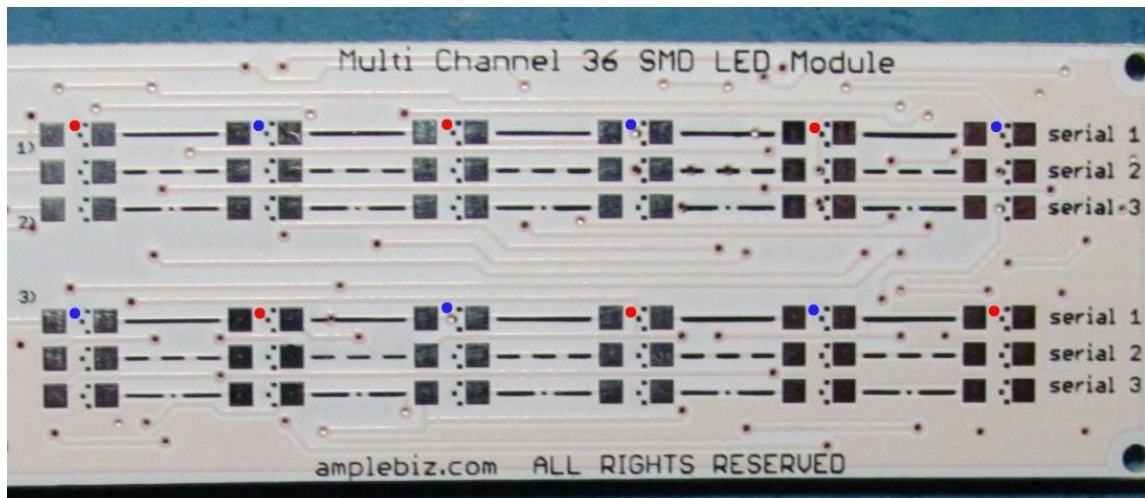
- In case of all LEDs are going to be Infra Red (IR group), there are 2 ways to do it.

Apply 9V to all 3 Power Input Pads, short all ROY pad pairs

OR

Apply 6V to all 3 Power Input Pads, short all WBGU pad pairs

- For mixing color in 1 series, forward voltage of LEDs must be considered, for example, 6 pcs of Red and 6 pcs of Blue in serial 1, WBGU Pad Pairs of Serial 1 should be shorted, System Voltage 10V, LED placing as follow :



- There may be a lot of different combinations, we welcome your questions, our email address is info@amplebiz.com



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4.1 Assembly Guides and Hints : -

Reflow solder or hand soldering are both suitable for assembly

- First Step – hand soldering of LEDs
 - apply soldering flux to all pads on top layer
 - apply solder to 1 pad of each LED position, solder 1 side of LED, make sure the LED is in good position, and the polarity is right. Negative LED pads are having 3 small black dots, negative side of SMD LED is having a small green dot on transparent case. Do the above step to all LEDs
 - solder all remaining LED pads, this is a very easy operation, but still have to make solder time as short as possible. Do not apply the hot tip to the transparent LED case
- Second Step – soldering of Pad Pairs
 - turn the board up side down, do last 2 steps to all control pad pairs that SHOULD BE shorted. DO NOT short any unnecessary pads, this will damage LEDs. You may use bare electric wire or those cut component pins to help shorting soldering
- Final Step – soldering of Power Supply Wire/s and Common Ground Wire
 - The Big Common GND pad is to be connected to negative of Power Supply
 - This maybe the easiest step but still have to be careful of swapping Power Supply polarities

Caution : Soldering time of LED should be less than 3 second for each pin, tip temperature around 250 to 300 degree Celsius

Above guides are only recommended, your suggestions and comments are welcomed



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5.1 Copyright :-

- Amplebiz.com reserves full copyright of this product
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