RGB LED RIBBON 12V DC

FEATURES

- Red, green, blue LEDs integrated into one LED package for superior color mixing control
- Flexible printed circuit board construction with adhesive backing which can be applied to a range of contours
- 12V DC operation, common anode on the LEDs
- Easy control of RGB LED with the LED Painter PCB or 16 Ch. TLC5940 Driver PCB
- Large solder pads at each end of the ribbon for attaching wire leads or chaining multiple RGB Ribbon segments together

OVERVIEW

Brilldea is proud to present the RGB LED Ribbon 12V DC lighting product. This product is a unique arrangement of red, green, blue LEDs on a thin and flexible printed circuit board. The RGB LED Ribbon is sold in 10cm segments and each unit contains 3 RGB LEDs.

The RGB LED Ribbon is preassembled with RGB LEDs and dropping resistors on a 2 layer flexible printed circuit board with an adhesive backing. Each end of the ribbon has four large solder pads. One pad is for attaching a positive voltage (up to 12V DC), while the other three pads are the cathode of the red, green and blue LEDs. The three LEDs are wired in series, and multiple 10cm segments can be chained together in parallel with the voltage bus already designed into the flexible printed circuit board.

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Datasheet

10 cm (3 LEDs)

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Rev 01.0

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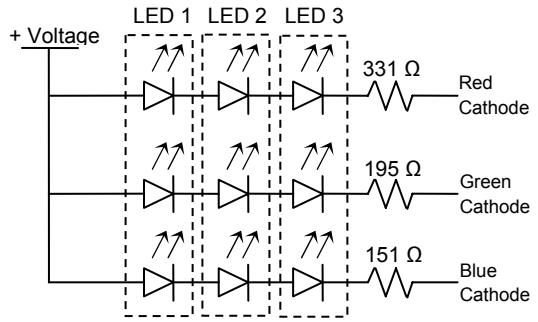
PRODUCT DETAILS

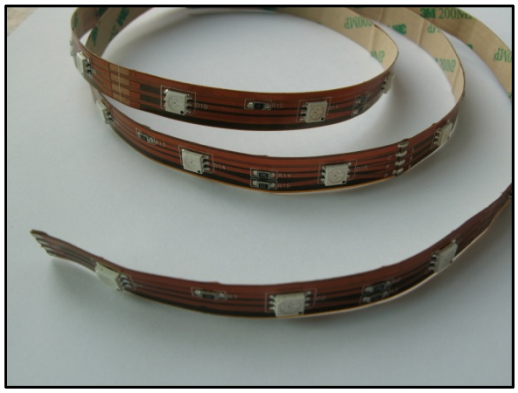
The RGB LED Ribbon is designed on a 2 layer flexible printed circuit board (FPC). The top layer of the FPC contains the LEDs and dropping resistors. Both layers contain traces for routing power to the LEDs.

A 10cm segment of the RGB Ribbon contains 3 RGB LEDs and 3 dropping resistors. A schematic of a 10 cm unit is drawn below. The RGB LEDs are arranged in a common anode format leaving the cathode of each colored LED available to control the on/off/intensity state of the LED.

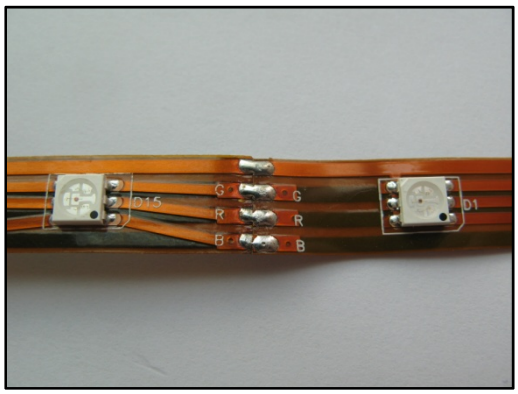


The RGB Ribbon is designed for use in 12V DC systems. The intensity of the LEDs can be controlled using various LED drivers and techniques such as PWM or current control. Brilldea recommends our LED Painter PCB which uses a TLC5940 IC from Texas Instruments to control multiple ribbon segments.

Multiple 10cm segments can be combined to form larger chains. (Note when the product is ordered, one total length of ribbon is sent, not individual segments.) The unique design of the RGB LED Ribbon allows multiple units to be attached in parallel seamlessly. This means that the control voltage can be maintained at 12V DC even with long lengths of RGB Ribbon.



The RGB LED Ribbon can be cut on the marks every 10 cm (3 LEDs). Multiple segments can also be combined by overlapping the solder pads and applying solder or using jumper wires between segments.



The approximate forward voltage of a single RGB LED used on the RGB LED Ribbon is shown in the table below. Remember that the RGB Ribbon is made up of 3 RGB LEDs arranged in series as shown in the schematic above.

Color LED	Forward Voltage
Red	~1.72 V DC
Green	~2.47 V DC
Blue	~2.50V DC

REVISION HISTORY

Release Date	Document Revision	Change Description
2008-05-10	01.0	Initial Release

Brilldea

www.brilldea.com

sales@brilldea.com

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