

# WS2812 VS WS2812B

## General description

WS2812 family is a intelligent control LED light source that the control circuit and RGB chip are integrated in a package of 5050 components. It internal include intelligent digital port data latch and signal reshaping amplification drive circuit. effectively ensuring the pixel point light color height consistent.

The data transfer protocol use single NZR communication mode. After the pixel power-on reset, the DIN port receive data from controller, the first pixel collect initial 24bit data then sent to the internal data latch, the other data which reshaping by the internal signal reshaping amplification circuit sent to the next cascade pixel through the DO port. After transmission for each pixel, the signal to reduce 24bit. pixel adopt a auto resha-ping transmit technology, making the pixel cascade number is not limited the signal transmission, only depend on the speed of signal transmission.

LED with low driving voltage, environmental protection and energy saving, high brightness, scattering angle is large, good consistency, low power, long life and other advantages. The control chip integrated in LED above becoming more simple circuit, small volume, convenient installation.

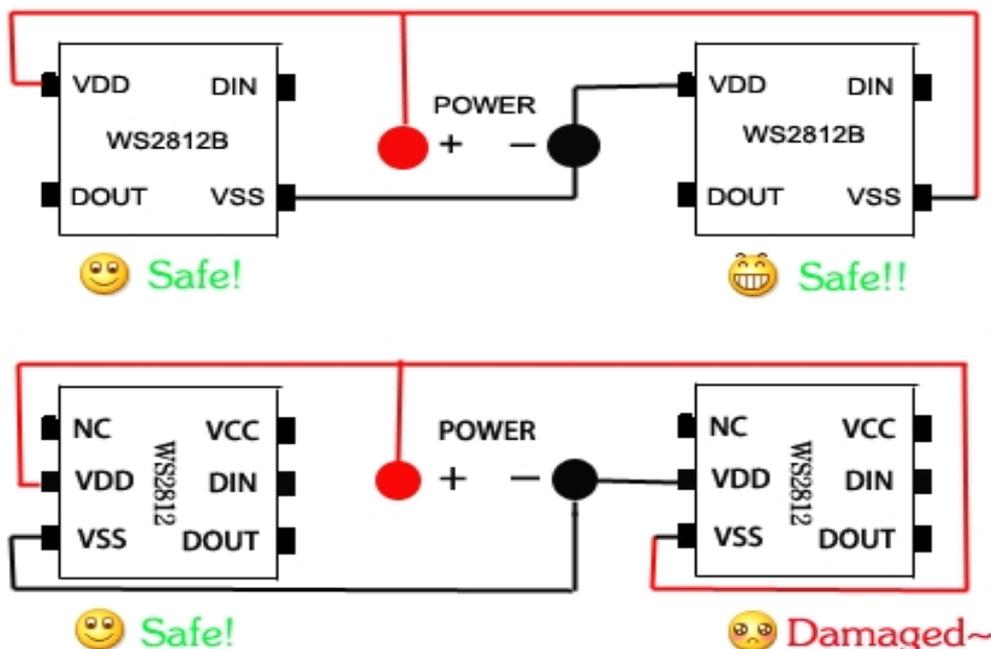
## Product upgrading

WS2812B is the development and new generation of product based on WS2812. It not only inherited all the good qualities of WS2812 but also improved the IC from mechanical arrangement outside to the structure inside, further enhance the stability and efficiency.

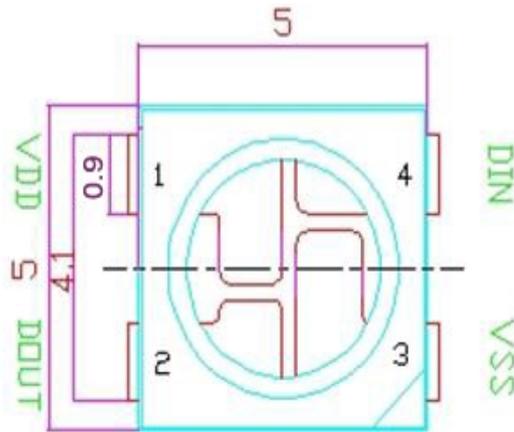
### 1. Safety performance comparison.

Compared to the ws2812 ws2812b, we add a reverse protection circuit. It will ensure you to reverse connection of power supply without any damage to the product, to increase the stability of the product which in effect.

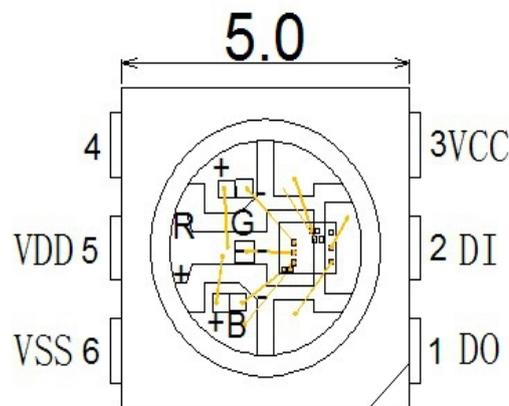
Graphical representation:



## 2. Mechanical properties comparison.



The mechanical size and pin drawing of WS2812B



The mechanical size and pin drawing of WS2812

Through drawing comparison, it is easy to find that the WS2812B WS2812 consistent in size, but the PAD number of the former are reduced to 4 Pin, with the decrease of the spacing between adjacent legs increases greatly, reduces circuit applications due to some causes problems such as short circuit. an the chip power supply PIN( VDD) and VSS are arranged diagonally, when in PCB layout area of copper foil bearing power, the power and ground can be very wide, power capacity is stronger, the higher the stability.

### 3. The brightness is higher.

An extrude advantage of is that the RGB chip on WS2812B has a higher brightness and color uniformity than WS2812.

### 4. Internal structure improved.

WS2812B has a better structure than WS2812, after we modified the structure, the control circuit and the RGB light have been separated, it has a better heat dissipation performance. The two modules work independently, one does not relate to the other, line distance is shorter and makes the work more stable than that of before.