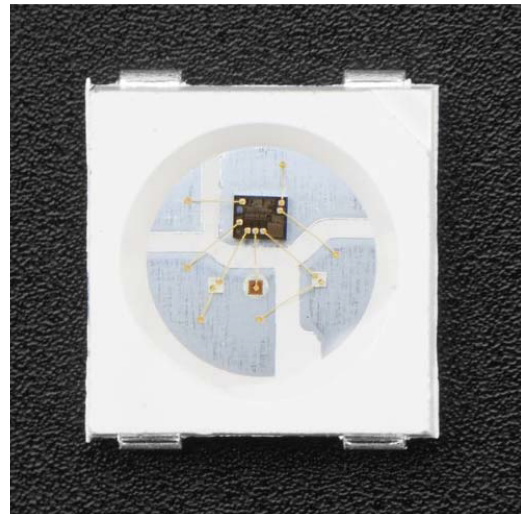




NeoPixel RGB 5050 LED with Integrated Driver Chip – 100 Pack

PRODUCT ID: 3094



Description

Make your own smart LED arrangement with the same integrated LED that is used in our NeoPixel strip and pixels. This tiny 5050 (5mm x 5mm) RGB LED is fairly easy to solder and is the most compact way possible to integrate multiple bright LEDs to a design. The driver chip is inside the LED and has ~18mA constant current drive so the color will be very consistent even if the voltage varies, and no external choke resistors are required making your design minimal. Power the whole thing with 5VDC and you're ready to rock.

This is the 4 pin LED chip version, not 6. It is code compatible and the same over-all shape and functionality but not the same pinout so you cannot use these to replace an 'S' chip. If you are designing a new PCB we suggest going with the B, since it has built in polarity protection. Other than that, B and S are the same brightness, and use the exact same code interface.

The LEDs are 'chainable' by connecting the output of one chip into the input of another - see the datasheet for diagrams and pinouts. To allow the entire chip to be integrated into a 6-pin package, there is a single data line with a very timing-specific protocol. Since the protocol is very sensitive to timing, it requires a real-time microcontroller such as an AVR, Arduino, PIC, mbed, etc. It cannot be used with a Linux-based microcomputer or interpreted microcontroller such as the netduino or Basic Stamp. The LEDs basically have a WS2811 inside, but fixed at the 800KHz 'high speed' setting. Our wonderfully-written Neopixel library for Arduino supports these pixels! As it requires hand-tuned assembly it is only for AVR cores but others may have ported this chip driver code so please google around. An 8MHz or faster processor is required.

These raw LEDs are cut from a reel and/or might be loose. They may not be suitable for pick & place + reflow. We recommend these for careful hand soldering only! Comes in a package with 100 individual LEDs. We have a ready-to-go component for this in the Adafruit EAGLE library

<https://github.com/adafruit/Adafruit-Eagle-Library>

Technical Details

- **WS2812 Datasheet**
 - <https://cdn-shop.adafruit.com/datasheets/WS2812.pdf>
- **SK6812 Datasheet**
 - <https://www.adafruit.com/images/productfiles/1138/SK6812%20LED%20datasheet%20.pdf>
- May ship with either WS2812B or SK6812-based LEDs. They are the same brightness, color, and protocol.

Product Dimensions: 5.0mm x 5.0mm x 1.5mm / 0.2" x 0.2" x 0.1"

Product Weight: 0.1g / 0.0oz



<https://www.adafruit.com/product/3094> 9-8-17