

● APA102 chip built in SMD5050

Features and Benefits

- Intelligent reverse connect protection, the power supply reverse connection does not damage the IC.
- The control circuit and the LED share the only power source.
- Control circuit and RGB chip are integrated in a package of 5050 components, form a complete control of pixel point.
- Built-in signal reshaping circuit, after wave reshaping to the next driver, ensure wave-form distortion not accumulate.
- Built-in electric reset circuit and power lost reset circuit.
- Each pixel of the three primary color can achieve 256 brightness display, completed 16777216 color full color display, and scan frequency not less than 400Hz/s.
- Cascading port transmission signal by (DAT CLK) two line.
- Any two point the distance less than 5m transmission signal without any increase circuit.
- When the refresh rate is 30fps, cascade number are not more than 512 pixels
- Send data at speeds of 800Kbps or 1200Kbps
- The color of the light were highly consistent, cost-effective..

General description

APA102 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 3 groups shift register and Self-detection signdecoder circuit. Also include a 4.5V voltage regulator part and continuous oscillator effectively ensuring the pixel point light color height consistent.

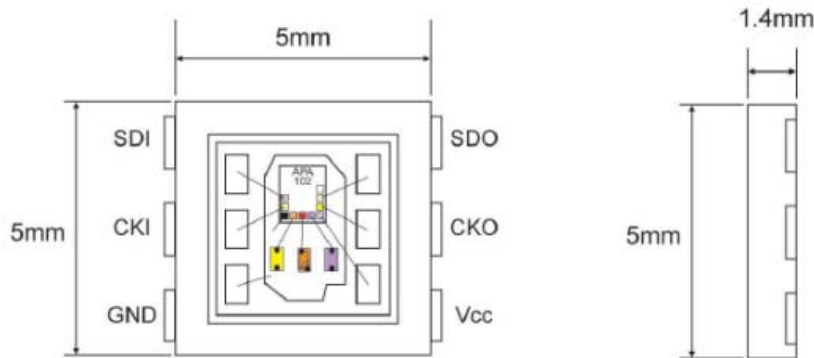
The data transfer protocol use two line decoder mode. After the pixel power-on reset, the DIN port receive data from controller after decoder , the first pixel collect initial 24bit data then sent to the internal data register, the other data which reshaping by the internal signal decoder circuit sent to the next cascade pixel through the DO CO port. After transmission for each pixel.

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.

Application:

- Led bill board, Led sign
- Led display, landscape lighting
- Building edge projects

Mechanical Dimensions



Picture:



PIN function

NO.	Symbol	Function description
1	SDI	Data Input
2	CKI	Clock Input
3	SDO	Data Output
4	CKO	Clock Output
3	GND	Ground
4	VCC	+ 5V

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Power supply voltage	V_{DD}	+4.5~+5.5	V
Input voltage	V_I	-0.5~ $V_{DD}+0.5$	V
Operation junction temperature	T_{opt}	-40~+70	°C
Storage temperature range	T_{stg}	-40~+100	°C

