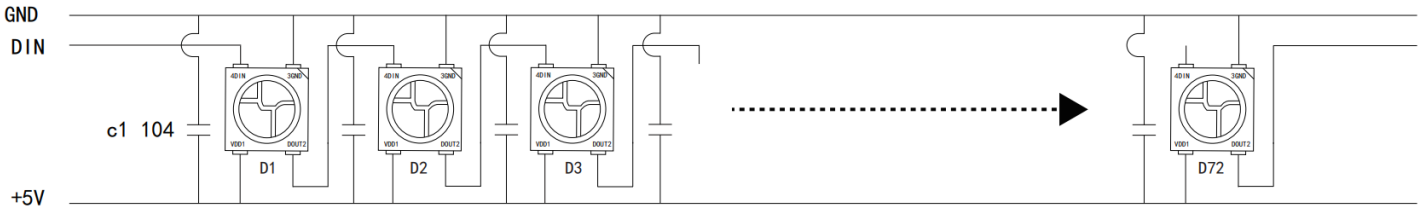
Addressable LED Strip

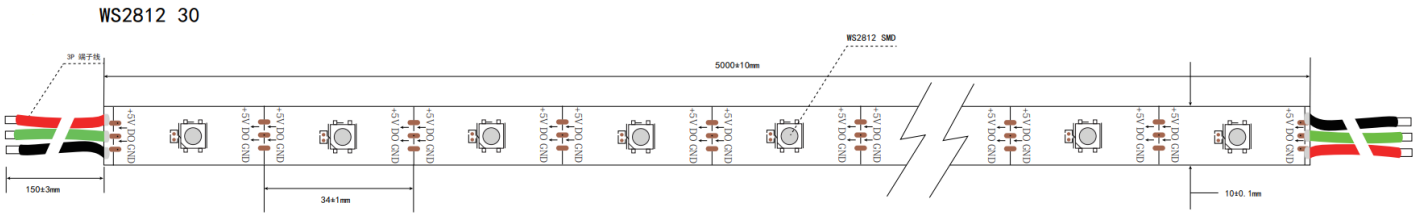
WS2812B-30LED/M

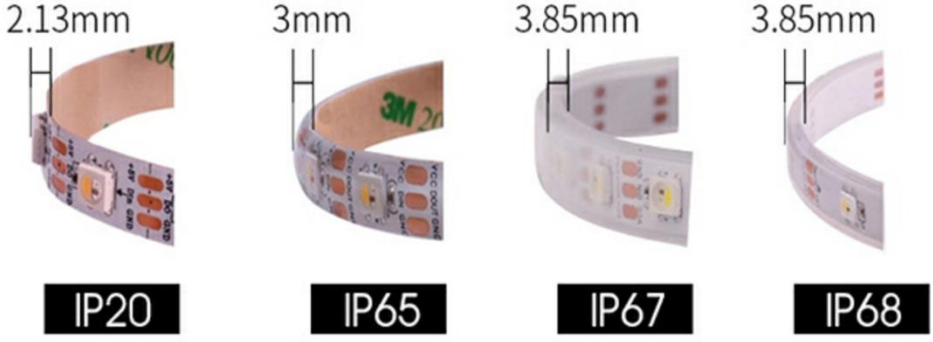
* IC:WS2812B
* Led model:5050
* led Qty:30LED/M
* Luminous color:RGB
* power:6w/m
* Voltage：5V
* LED viewing angle (20 1/2)120°
* PCB color: Black / white

Circuit schematic



Dimension





Phone: +86-075536631393
Address: 3rd Floor, No. 28, North District, Xinhe Industrial Park, Fuyong Town, Bao'an District, Shenzhen, China

Electro-optical characteristics at Ta=25℃（RGB 光电特性）

Item 项目	Symbol（符号）		Mix（最小）	Typ（平均）	Max（最大）	Unit（单位）	Conditions（测试条件）
Dominant wavelength（主波长）	λd	G	520		525	nm	IF=12mA
		R	620		625		
		B	465		470		
Luminous intensity（发光强度）	IV	G	800		1200	mcd	IF=12mA
		R	200		400		
		B	150		300		

Absolute maximum ratings at Ta=25℃（绝对最大额定值）

Parameter	Symbol	Range	Unit
Logic power supply voltage	VDD	3.5～7.5	V
Logic input voltage	VI	-0.5～5.5	V
Operating temperature	Topt	-40～85	℃
Storage temperature	Tstg	-40～120	℃
ESD withstand voltage	VESD	4K	V

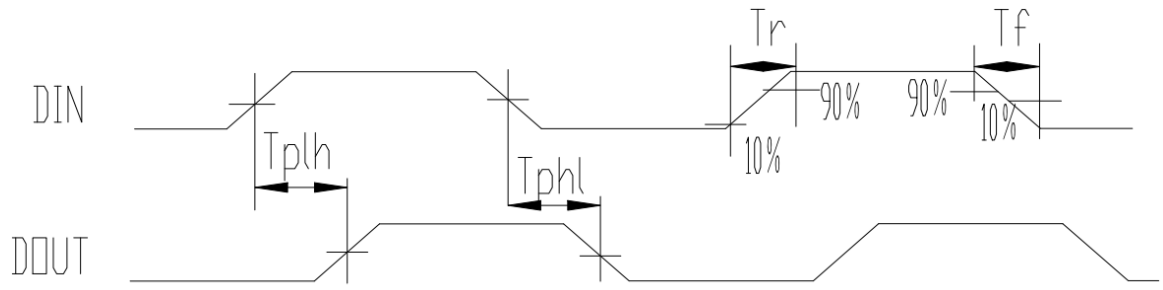
IC Electric Spec（IC 电气参数）

Parameter name	Symbol	Min	Typical	Max	Unit	Test conditions
R/G/B output port withstand voltage	Vds	8.5	9	9.5	V	--
R/G/B output drive current	IO	9.6	12	14.4	mA	--
High level input voltage	VIH	0.7V_{DD}	0.9V_{DD}	V_{DD}	V	--
Low-level input voltage	VIL	0	0.1V_{DD}	0.3V_{DD}	V	--
DO source current capability	IDOH	--	15	--	mA	--
DO source current capability	IDOL	--	30	--	mA	--
PWM frequency	FPWM	3	4	5	KHZ	--
Static power	IDD	0.6	0.8	1	mA	--

Phone: +86-075536631393
Address: 3rd Floor, No. 28, North District, Xinhe Industrial Park, Fuyong Town, Bao'an District, Shenzhen, China

Dynamic parameter（开关特性）

Parameter name	Symbol	Min	Typical	Max	Unit	Test conditions
Data transfer rate	FDIN	--	800	1100	KHZ	--
Transmission delay time	TPLZ	--	--	200	ns	DIN→DO
Output current conversion time	Tr	--	--	400	ns	V_{ds}=1.5V I_O=12mA
	Tf	--	--	400	ns	



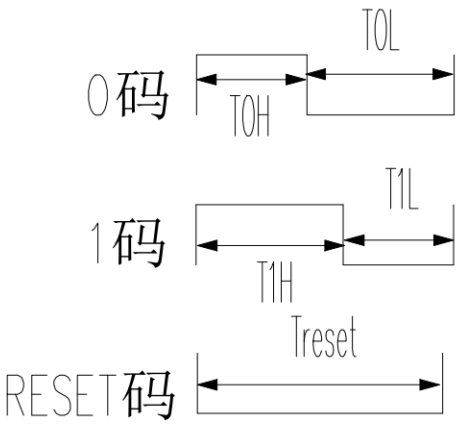
The data transmission time（数据传输时间）

TX1812CXA					
T Symbol	Code	Min	Typical	Max	Unit
TOH	0 code, high level time	245	295	345	ns
TOL	0 code, low level time	545	595	645	ns
T1H	1 code, high level time	545	595	645	ns
T1L	1 code, low level time	245	295	345	ns
Trst	Reset code, low level time	80	--	--	us

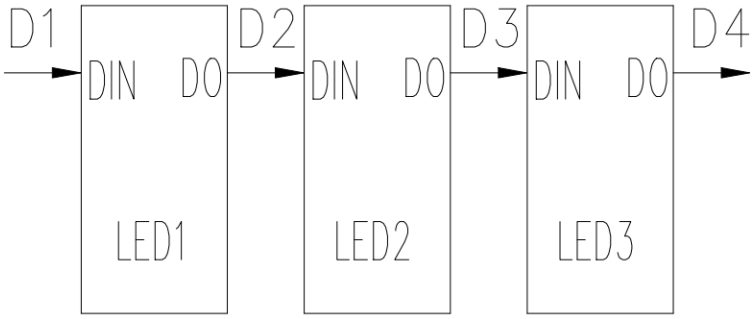
Phone: +86-075536631393
Address: 3rd Floor, No. 28, North District, Xinhe Industrial Park, Fuyong Town, Bao'an District, Shenzhen, China

Temporal waveform figure（时序波形图）

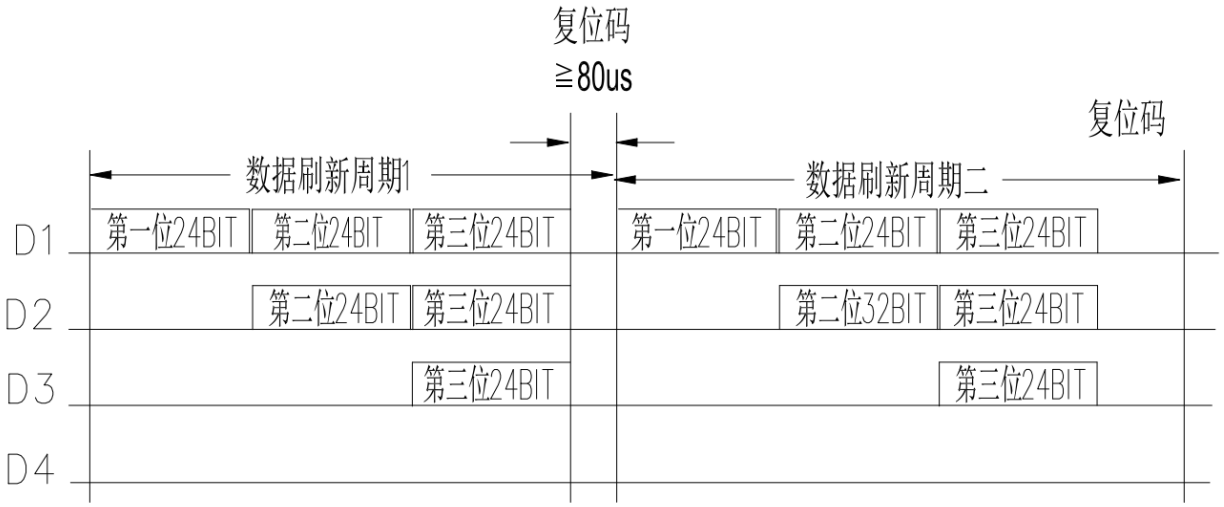
Input code:



Connect method:



Mode of data transmission（数据传输方式）



Note: D1 is the data sent by the MCU, and D2, D3, and D4 are the data that the cascade circuit automatically reshapes and forwards.

Mode of data transmission（24bit 数据结构）

G7	G6	G5	G4	G3	G2	G1	G0	R7	R6	R5	R4	R3	R2	R1	R0	B7	B6	B5	B4	B3	B2	B1	B0

Note: The high bit is sent first, and the data is sent in the order of GRB (G7→G6……B0)

Phone: +86-075536631393
Address: 3rd Floor, No. 28, North District, Xinhe Industrial Park, Fuyong Town, Bao'an District, Shenzhen, China

Install in accordance with national standards and local electrical codes.

This product must be installed and maintained by a qualified electrician.

This product can only be installed and used with a level 2 energy efficiency DC constant voltage driver. If it does not meet the level 2 energy efficiency standards, please do not use it.

The power of the driver must meet the output of the rated power and not exceed the specified output power.

The rated temperature of the cable must be greater than 80 ° C, which is suitable for external connection of electrical equipment.

Improper electrical installation can cause cables to overheat and cause a fire. Use appropriate cables between the driver, lamp, and controller. When selecting a wire, the voltage and current must match the ratings.

The LED module itself and all its components cannot withstand mechanical stress.

The assembly must not damage or destroy the conductive paths on the circuit board.

In order to avoid mechanical damage, the LED module should be safely connected to a predetermined substrate. Avoid severe vibration.

The installation of the LED module (with power supply) must comply with all applicable electrical and safety standards. Installation should only be performed by qualified personnel.

Observe whether the polarity is correct! Incorrect polarity will cause no light and may cause damage to the LED module.

It is recommended to use parallel mode as a safe electrical operation mode. A serial connection is not recommended. Unbalanced voltage drop can cause dangerous overload and damage the LED module.

When mounting on metal or other conductive surfaces, electrical insulation protection is required at the solder joints between the module and the mounting surface.

Please ensure that the power of the power supply is greater than the total load to avoid overloading the power supply.

Damage caused by corrosion will not be compensated as a material defect. It is the responsibility of the user to provide appropriate protection against corrosive agents such as moisture, condensation and other harmful components

Phone: +86-075536631393
Address: 3rd Floor, No. 28, North District, Xinhe Industrial Park, Fuyong Town, Bao'an District, Shenzhen, China