

■Features

- 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 4KHz/s.
- Cascading port transmission signal by single line.
- Any two point the distance more than 5m transmission signal without any increase circuit.
- When the refresh rate is 30fps, cascade number are not less than 1024 points.
- Send data at speeds of 800Kbps.
- The color of the light were highly consistent, cost-effective..

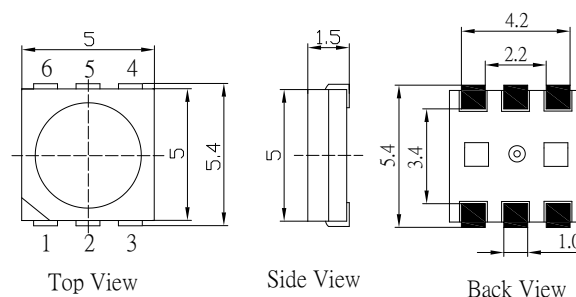
■Absolute Maximum Rating (Ta=25°C)

Item	Symbol	Value	Unit
Power supply voltage	V _{DD}	+9.5~+13.5	V
Input voltage	V _I	-0.3~V _{DD} +5.7	V
Operation junction temperature	T _{opt}	-40~+85	°C
Storage temperature	T _{stg}	-40 ~ +85	°C

■Electrical Characteristics (Ta=25°C, VDD=12V, Vss=0V unless otherwise specified)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input current	I _I	V _I =V _{DD} /V _{SS}	-	-	±1	μA
High-level Input	V _{IH}	D _{IN} , SET	2.7	-	5.7	V
Low-level Input	V _{IL}	D _{IN} , SET	-0.3	-	1.5	V

■Outline Dimension



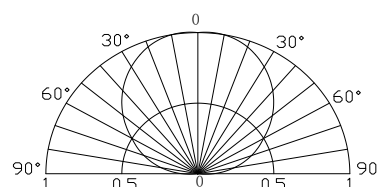
NO.	Symbol	Function description
1	NC	Suspended in PCB layout, the circuit will be out of operation when it connects to other circuits.
2	VDD	Power Voltage, connect to "5V"
3	DO	Control data signal output
4	DIN	Control data signal input
5	GND	Data & Power Grounding
6	BIN	Backup Control data signal input

Unit:mm
Tolerance:±0.20mm
unless otherwise noted

■Applications

- LED decorative lighting, Indoor/outdoor LED video irregular screen
- Full-color module, Full color soft lights a lamp strip.




■Directivity



■ Switching Characteristics (Ta=25°C, VDD=12V, Vss=0V unless otherwise specified)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Transmission Delay Time	t_{PLZ}	CL=15pF,DIN→DOUT,RL=10KΩ	-	-	300	ns
Fall Time	t_{THZ}	CL=300pF,OUTR/OUTG/OUTB	-	-	120	us
Input-capacitance	C _I	-	-	-	15	pF

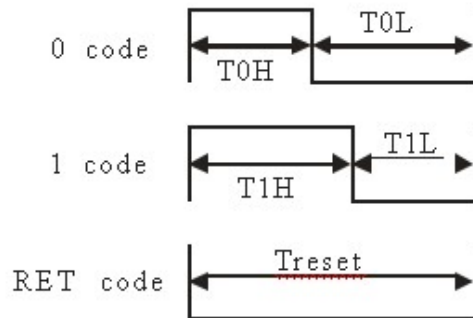
■ LED Characteristic Parameter

Color		Quiescent Current(mA)	Constant Current(mA)	I _v (mcd)	λD(nm)
Red		<2.0	12	200-300-450	620-630
Pure Green		<2.0	12	400-650-1000	520-530
Blue		<2.0	12	100-170-250	460-470

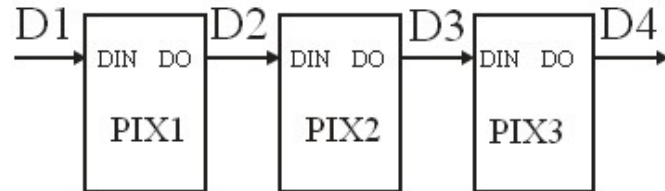
■ Data Transfer Time

T0H	0-code,High-level time	220ns~380ns
T1H	1-code,High-level time	580ns~840ns
T0L	0-code,Low-level time	900ns~5000ns
T1L	1-code, Low-level time	600ns~5000ns
RES	Frame unit, Low-level time	>280us
T _{DATA}	Data Cycle	≥1.25us

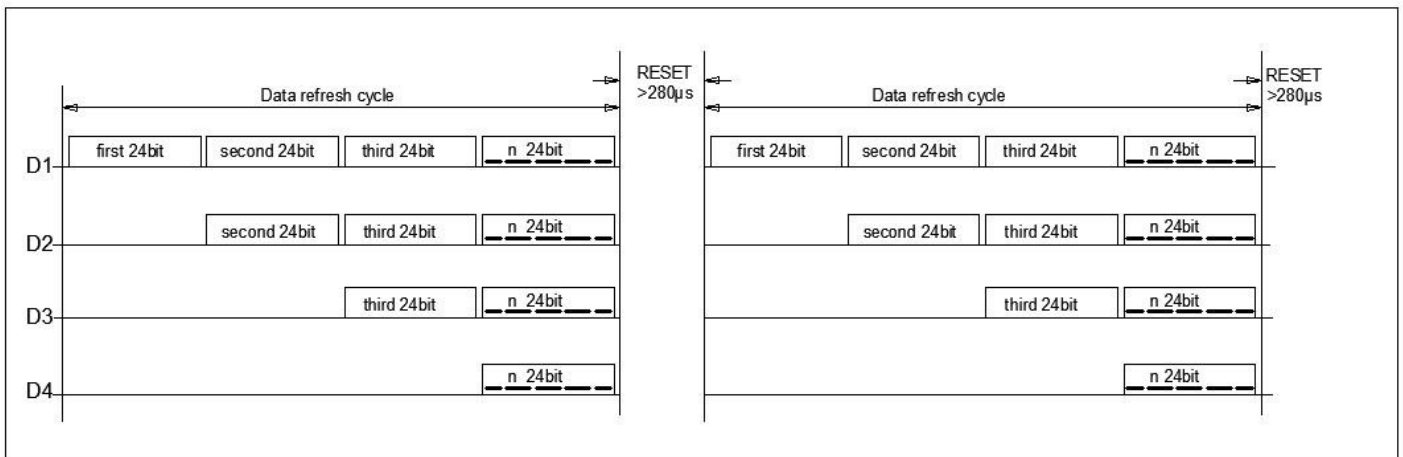
■Sequence chart



■Cascade method



■Data transmission method:

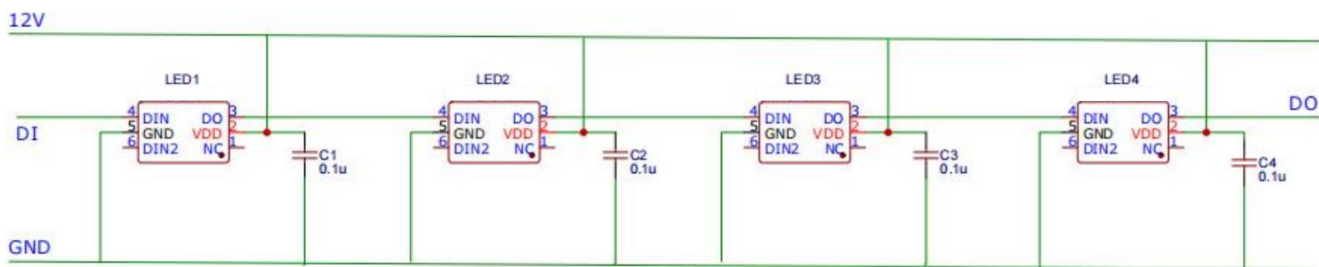


Note: D1 is the data from MCU, and D2, D3, D4 are from Cascade Circuits

■Composition of 24bit data



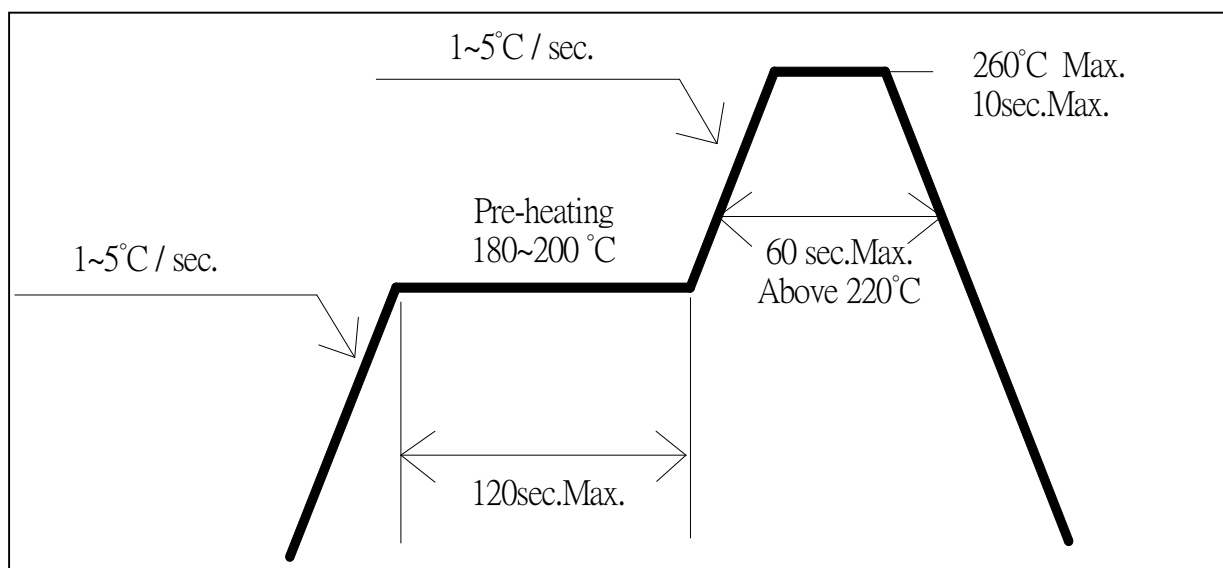
■Typical application circuit:



■ Soldering Conditions

Reflow Soldering		Hand Soldering	
Pre-Heat	180 ~ 200°C	Temperature Soldering time	350°C Max. 3 sec. Max. (one time only)
Pre-Heat Time	120 sec. Max.		
Peak temperature	260°C Max.		
Dipping Time	10 sec. Max.		
Condition	Refer to Temperature-profile		

• Reflow Soldering Condition(Lead-free Solder)



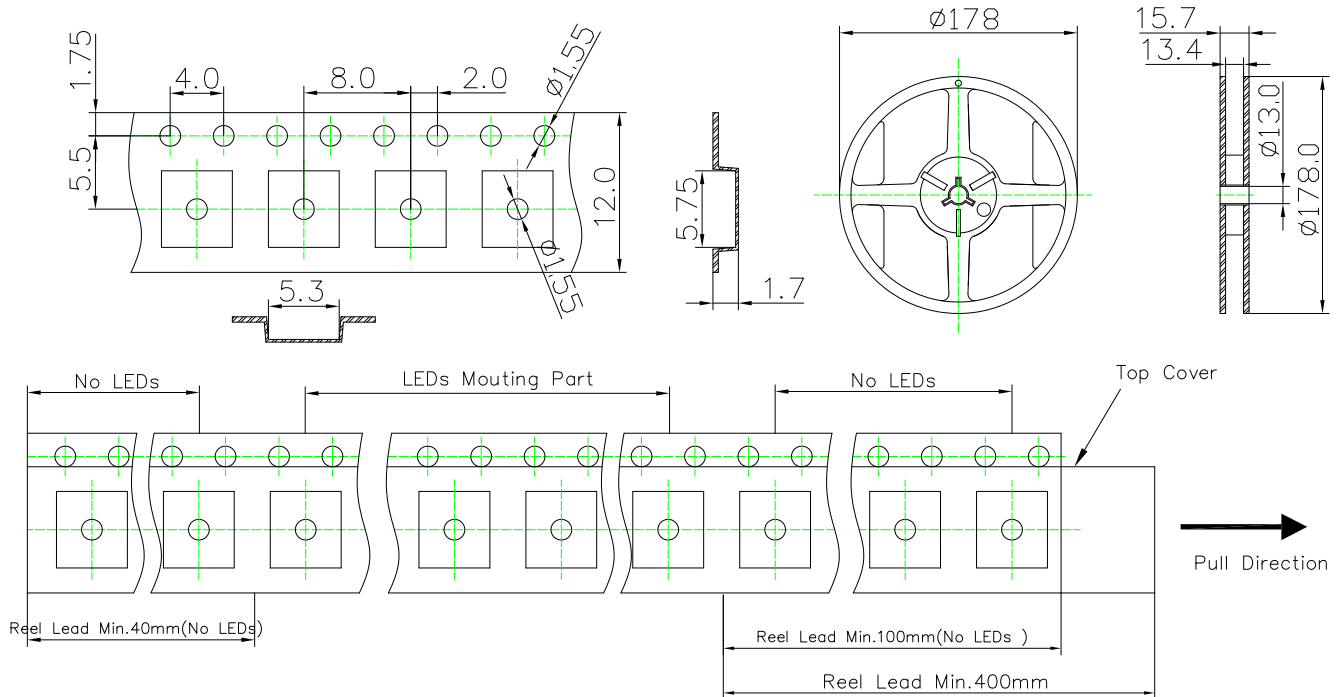
*Recommended soldering conditions vary according to the type of LED

*Although the recommended soldering conditions are specified in the above table, reflow, or hand soldering at the lowest possible temperature is desirable for the LEDs.

*A rapid-rate process is not recommended for cooling the LEDs down from the peak temperature.

- All SMD LED products are pb-free soldering available.
- Occasionally there is a brightness decrease caused by the influence of heat or ambient atmosphere during air reflow. It is recommended that the User use the nitrogen reflow method.
- Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable a double-head soldering iron should be used. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.
- Reflow soldering should not be done more than two times.
- When soldering, do not put stress on the LEDs during heating.
- After soldering, do not warp the circuit board.

PACKING DIMINTIONS



Notes:

1. Unit: mm
2. 1000pcs/Reel

Precautions in Use for Surface Mount Diode

■ Storage

· Storage Conditions

Before opening the package:

The LEDs should be kept at 30°C or less and 60%RH or less. The LEDs should be used within a year. When storing the LEDs, moisture proof packaging with absorbent material (silica gel) is recommended.

· After opening the package:

Soldering should be done right after opening the package (within 24hrs).

Keeping of a fraction, sealing and Temperature: 5~30°C Humidity: Less than 30%.

If the package has been opened more than 24 Hours, components should be dried for 12hrs, at $60 \pm 5^\circ\text{C}$.

· Optosupply LED electrode sections are comprised of a silver plated copper alloy. The silver surface may be affected by environments which contain corrosive gases and so on. Please avoid conditions which may cause the LED to corrode, tarnish or discolor. This corrosion or discoloration may cause difficulty during soldering operations. It is recommended that the User use the LEDs as soon as possible.

· Please avoid rapid transitions in ambient temperature, especially in high humidity environments where condensation can occur.