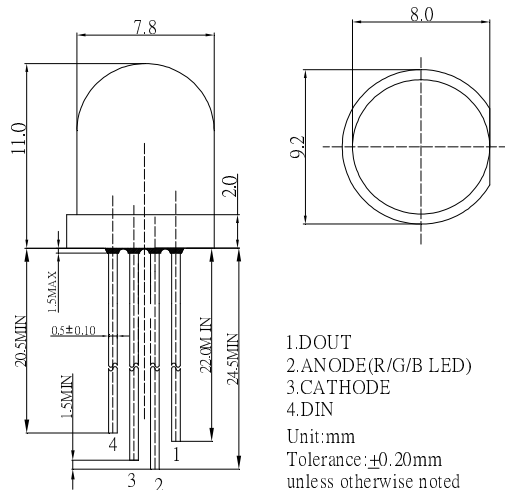


■Features

- 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 8mm 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 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..

■Outline Dimension



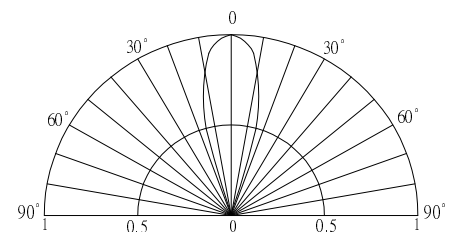
■Applications

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

■Absolute Maximum Rating (Ta=25°C)

Item	Symbol	Value	Unit
Power supply voltage	V _{DD}	+3.5~+5.3	V
Input voltage	V _I	-0.5~V _{DD} +0.5	V
Operation junction temperature	T _{opt}	-25~+80	°C
Storage Temperature	T _{stg}	-40 ~ +105	°C
Lead Soldering Temperature	T _{sol}	260°C/5sec	-

■Directivity



■Electrical Characteristics (Ta=20~+70°C, VDD=4.5~5.5V, Vss=0V unless otherwise specified)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Input current	I _I	V _I =V _{DD} /V	-	-	±1	μA
Input voltage level	V _{IH}	D _{IN} , SET	0.7V _{DD}	-	-	V
	V _{IL}	D _{IN} , SET	-	-	0.3 V _{DD}	
Hysteresis voltage	V _H	D _{IN} , SET	-	0.35	-	

■ **Switching characteristics** ($T_A = -20 \sim +70^\circ\text{C}$, $V_{DD} = 4.5 \sim 5.5\text{V}$, $V_{SS} = 0\text{V}$, $I_F = 15\text{mA}$, unless otherwise specified)

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Operation frequency	F_{osc2}	—	—	800	—	KHz
Transmission delay time	t_{PLZ}	CL=15pF, DIN→ DO, RL=10KΩ	—	—	300	ns
Fall time	t_{THZ}	CL=300pF, OTR/OU TG/OUTB	—	—	120	μs
Data transmission rate	F_{MAX}	Duty ratio 50%	400	—	—	Kbps
Input capacity	C_I	—	—	—	15	pF

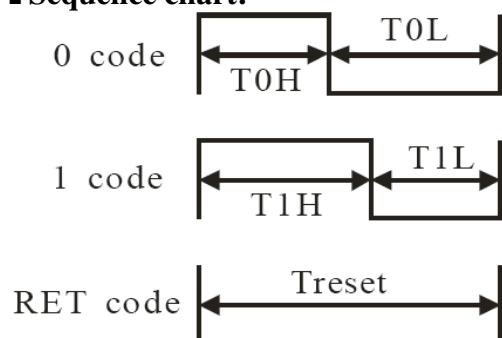
■ **LED characteristic parameter**

Emitting color	Wavelength (nm)	Luminous intensity (mcd)	Voltage(V)
Red	620-625	390-420	2.0-2.2
Green	520-525	660-720	3.0-3.4
Blue	465-470	180-200	3.0-3.4

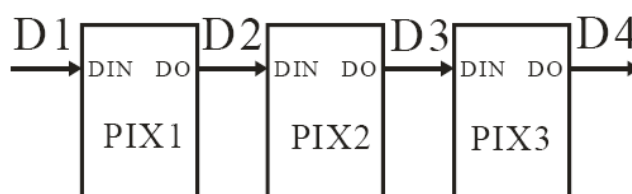
■ **Data transfer time** ($T_H + T_L = 1.25\mu\text{s} \pm 600\text{ns}$)

Parameter	Condition	Min	Max
T0H	0 code ,high voltage time	0.35μs	±150ns
T1H	1 code ,high voltage time	0.9 μs	±150ns
T0L	0 code ,low voltage time	0.9μs	±150ns
T1L	1 code ,low voltage time	0.35 μs	±150ns
RES	Low voltage time	Above 50μs	

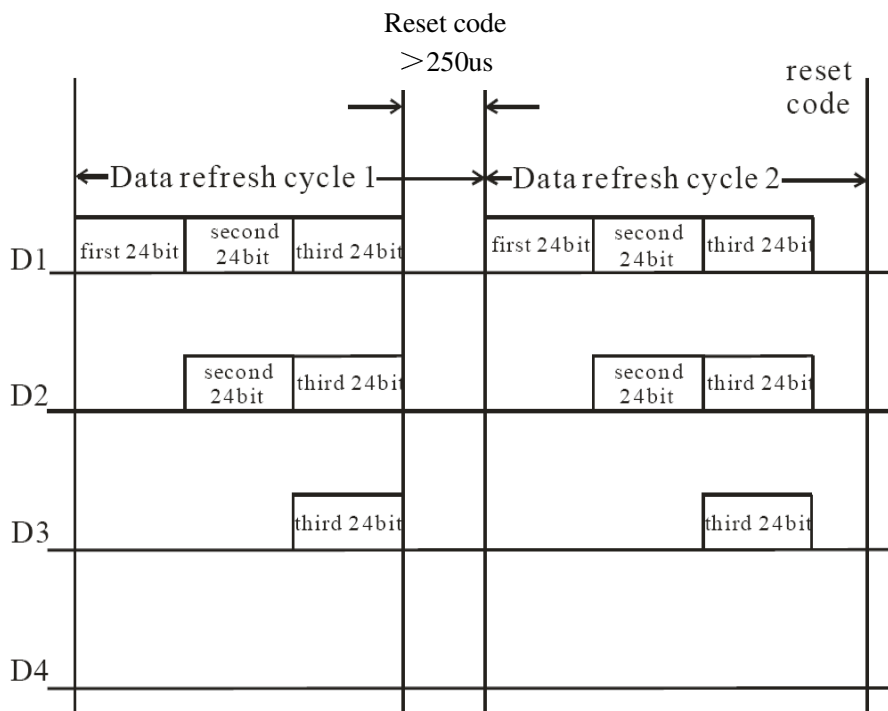
■ **Sequence chart:**



■ **Cascade method:**



■ **Data transmission method:**



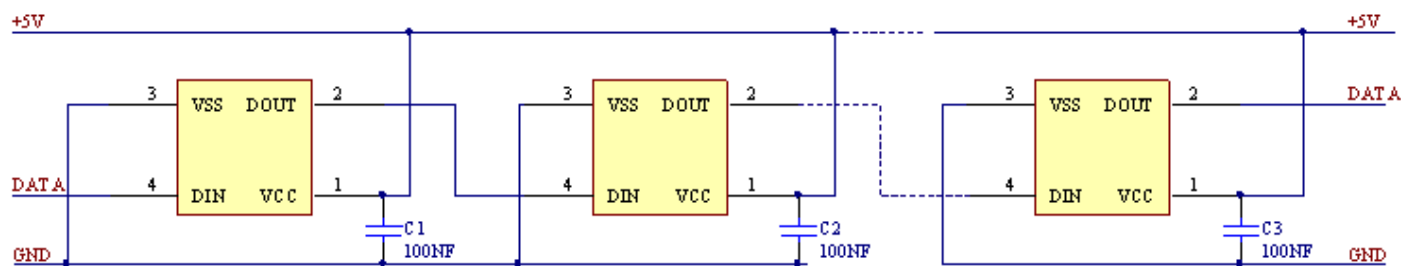
Note: The data of D1 is send by MCU, and D2, D3, D4 through pixel internal reshaping amplification to transmit.

■ **Composition of 24bit data:**

R7	R6	R5	R4	R3	R2	R1	R0	G7	G6	G5	G4	G3	G2	G1	G0	B7	B6	B5	B4	B3	B2	B1	B0
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Note: Follow the order of GRB to send data and the high bit sent at first.

■ **Typical application circuit:**



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