



Raffar
Technology Corp.

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RT7921

4-channel RGBW LED driver IC with 8-bit PWM and 4-bit current-gain function

2020/ 01

Version: 0.3 (Preliminary)

Description

RT7921 is a 4-channel LED driver with 8 bits PWM linear control and additional 4 bits current-gain function for white-balance modulation. The RT7921 uses a single communication wire to identify LED PWM signal and in total 48 bits RGBW display. This is a very simple and cost effective for any LED system design.

The LED PWM output controlled by duty ratio which depends on the 48 bits data each for RGBW outputs. All chips will latch new data when DIN port received the latch signal (>50us low-level signal)

Features

- Operating supply voltage: 4.2 V ~ 5.5 V
- Constant current output: 18 mA (typ.)
- Max. output voltage: 17 V
- 8 bits PWM control with 256 steps grayscale for each RGBW output
- 4 bits current-gain function with 16 levels for each RGBW output
- Clock frequency: 800kbps
- Single wire signal control

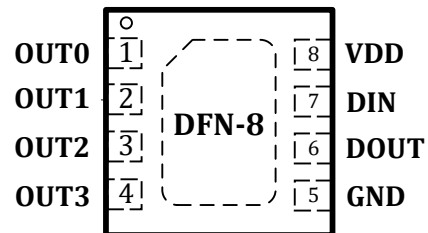
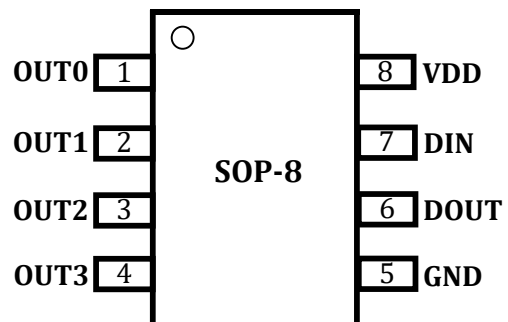
Application

Indoor/ Outdoor LED video display
Full color LED light strip
LED decorative lighting

Purchase Information

No.	Part No.	Package
1	RT7921SP	SOP8
2	RT7921BD	Bare Die
3	RT7921DN	DFN8 2x2mm

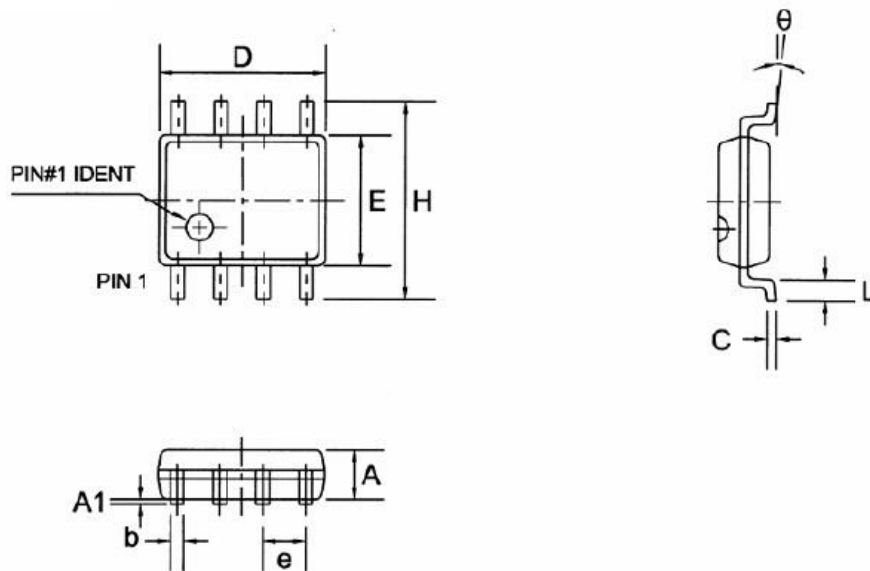
Pin Assignment



Pin No.	Pin Name	Description
1	OUT0	Current output
2	OUT1	Current output
3	OUT2	Current output
4	OUT3	Current output
5	GND	Ground terminal
6	DOUT	Serial data output
7	DIN	Serial data input
8	VDD	Supply voltage

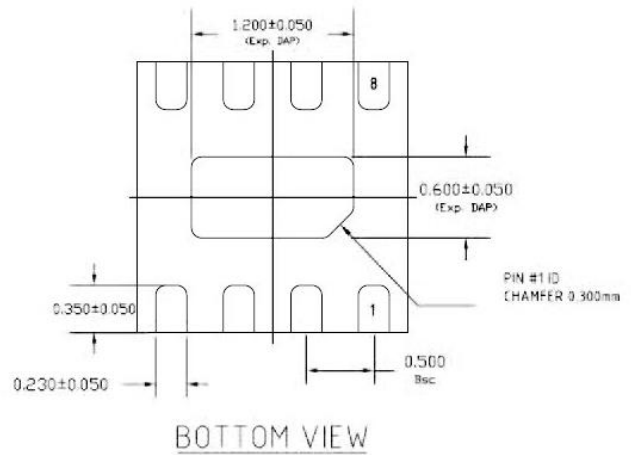
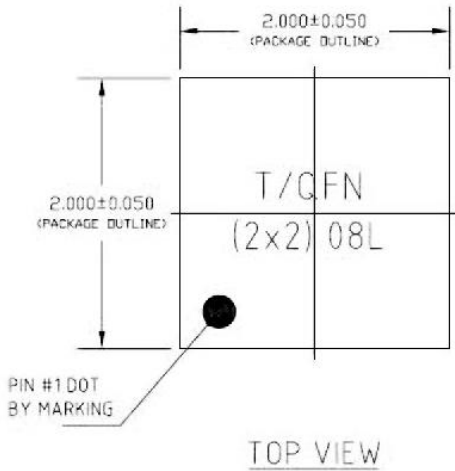
Package Outline Dimension

SOP8 Dimension

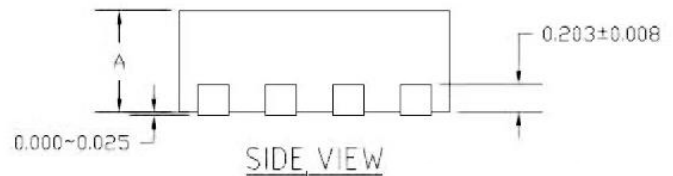


Symbol	Millimeters (mm)		Inches (in)	
	Min.	Max.	Min.	Max.
A	1.3	1.7	0.051	0.067
A1	0.06	0.26	0.002	0.010
b	0.30	0.55	0.012	0.022
c	0.15	0.35	0.006	0.014
D	4.72	5.12	0.186	0.202
E	3.75	4.15	0.148	0.163
e	1.27		0.05	
H	5.7	6.45	0.224	0.254
L	0.45	0.85	0.018	0.033
θ	0°	8°	0°	8°

DFN8 Dimension



NOTE:
All dimensions are in mm unless otherwise specified.



Symbol	Millimeters (mm)		
	Min.	Nom.	Max.
A	0.7	0.75	0.8

Note

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