UCS2904B Datasheet

Product overview

UCS2904B is a 4 channel LED driving and controlling constannt current IC, Which include MCU, digital interface, data latch and LED high voltage driving circuit. The grey level of led is controller by peripheral MCU. Adopt S-drive technology and enhanced receiving technology. Extending the pull wire distance between two Points more than 10m under 800K transmission frequency. Excellent product performance,Realiable Quality.

Function Characteristic

1. Single line data transmission;

2. Reshape optimization and cascading technology

3. Data transmission frequency:800kps

4. S-drivig and enhancing receiving signal technology

5. PWM control 256 gray, Scan frequency 1.8Khz/s

6. Built in 5V stabilvolt, Port max withstand voltage up to 26V

7. l7mA constant current per channel

8. power on self test (white color)

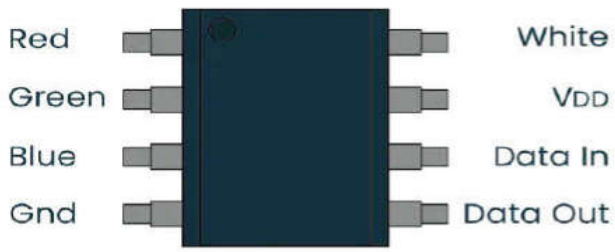
9. Industries standard

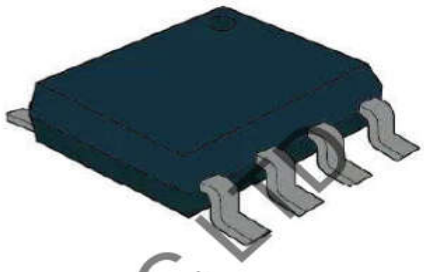
Application

1. Pixel lighting

2. Display

PIN define





	UCS2904B	
NO.	Symbol	Description
1	OUTR	Red PWM Output
2	OUTG	Green PWM Output
3	OUTB	Blue PWM Output
4	GND	Ground
5	DOUT	Data Input (800K)
6	DIN	Data Output (800K)
7	VDD	Power
8	OUTW	White PWM Output

Absolute Maximum Ratings（Ta＝ 25 ℃，Vss＝ 0 V）

Parameter	Symbol	Ratings	Unit
Logical Volt	Vdd	6.5	V
Withstand Volt	Vout	30	V
Input Volt	Vi	− 0.5～ Vdd+ 0.5	V
Operation temperature	Topt	− 45～ + 85	℃
Storage temperature	Tstg	− 55～ + 150	℃
Anti-static	ESD	8000	V
Rating Power	Pd	400	mW

Recommand operation Ratings（Ta＝－40～＋85℃，Vss＝0 V）

Parameter	Symbol	MIN	TYP	MAX	UNIT	Condition
Logical Volt	Vdd	2.6	5.5	6	V	-
Input voltage level	Vih	0.7Vdd	-	Vdd	V	-
	Vil	0	-	0.3Vdd	V	-
Withstand Volt	Vout	26			V	

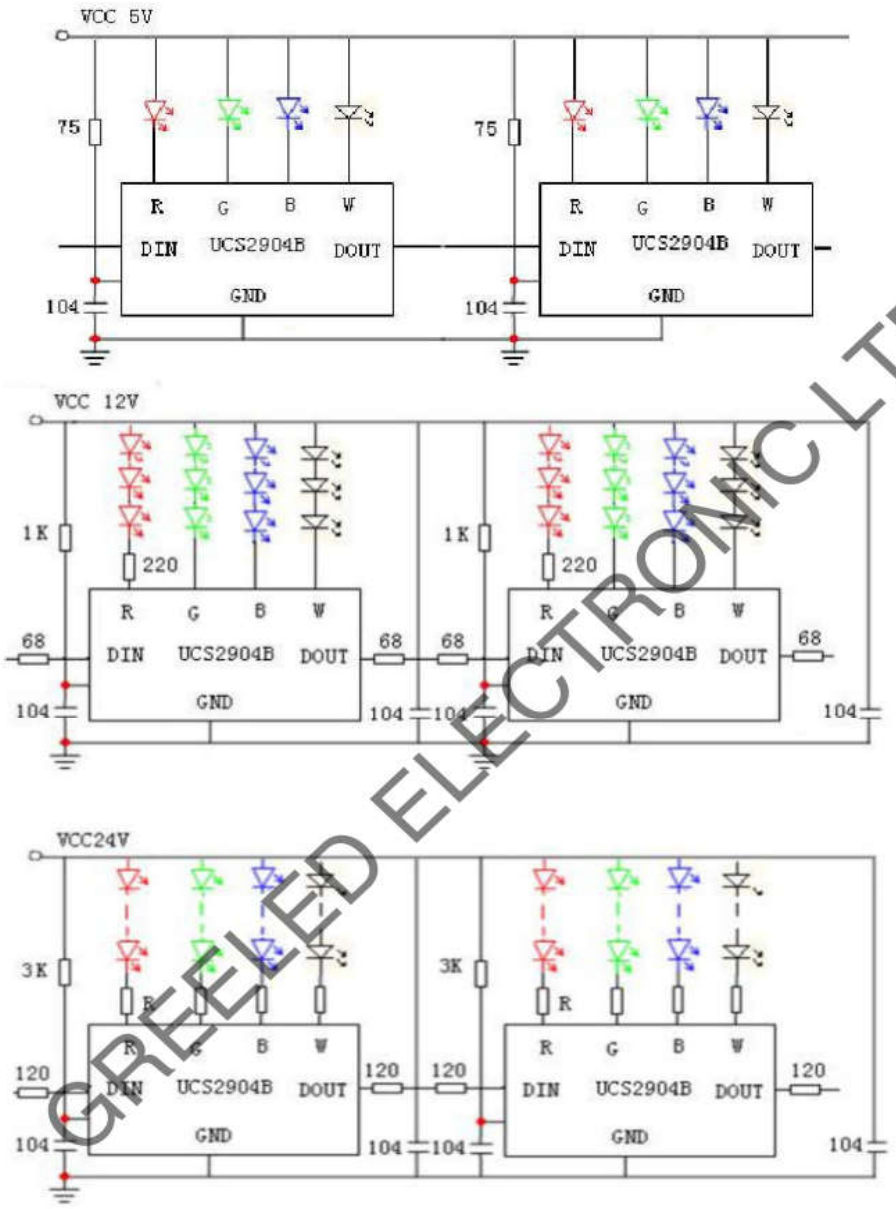
Electrical Characteristics（Ta＝－40～＋85℃，Vss＝0 V, Vdd＝4.5～5.5 V）

Symbol	MIN	TYP	MAX	UNIT	Condition
Iout		17		mA	R, G, B, W
Ido	20	-	-	mA	Vo = 0.4V, Dout
Ii	-	-	±1	μA	
Isink		17		mA	
Vih	0.7Vdd	-		V	D_{IN}, SET
Vil	-	-	0.3Vdd	V	D_{IN}, SET
Vh	-	0.35	-	V	D_{IN}, SET
dIout		±1.5	±3.0	%	Vds=1V, Iout=17mA
dIout		±3.0	±5.0	%	Vds=1V, Iout=17mA
%dVds		±0.1	±0.5	%/V	1V<Vds<3V
%dVds		±1.0	±2.0	%/V	4.5V<Vdd<5.5V
IDDdyn	无负载			1	mA
PD	(Ta=25℃)			250	mW
Rth(j-a)		80		190	℃/W

Switch Characteristics（Ta＝－40～＋85℃，Vss＝0 V, Vdd＝4.5～5.5 V）

Parameter	Symbol	Min	Typ	Max	Unit	Condition
OSC Frequecy	FOSC1	-	800	-	KHz	Vdd =5V
	FOSC2	-	10	-	MHz	Vdd =5V
Time delay	Tflz	-	-	300	ns	C_I=15pF, D_{IN} → D_{OUT}, R_I = 10kΩ
Drop time	Tthz	-	-	120	μs	C_I = 300pF, OUTR/OUTG/OUTB
Data sending	Fd	800	-	-	Kbps	占空比 50 %
Input capacitor	Ci	-	-	15	pF	-

Application Circuit



Footprint (SOP8)