

Full Color Dot Matrix LED Unit for Indoor Use LT1560W(Chip Type)

(Under development)

■ Features

- No. of dots : 16X32dots
- Outline dimensions : 96X192mm
- Dot size : 3.0X3.0mm
- Dot pitch : 6.0mm
- Radiation color : Blue+Yellow-green+Red(Full color)
- Driving method : 1/16 duty dynamic drive

■ Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Supply voltage for IC	V _{CC}	-0.3 to +5.5	V
	V _(R,G)	-0.3 to +5.5	V
Supply voltage for LED	V _(B)	-0.3 to +8.5	V
	V _I	-0.3 to V _{CC} +0.3	V
Turn-on time	t _{ON}	1	ms
Operating temperature	T _{opr}	-10 to +60	°C
Storage temperature	T _{stg}	-20 to +70	°C
Power dissipation	P	54	W

■ Optical Characteristics

(Ta=25°C, V_{CC}=5V, V_(R,G)=5V, V_(B)=8V)

Parameter	Symbol	TYP.	Unit
Luminance	Red	(80)	cd/m ²
	Yellow-green	(100)	
	Blue	(30)	
Peak emission wavelength	Red	635	nm
	Yellow-green	565	
	Blue	430	
Spectrum radiation bandwidth	Red	35	nm
	Yellow-green	30	
	Blue	65	

■ Terminal Functions

Connector	Symbol	Function
Power supply (CN1)	V(R)	Supply voltage for LED(Red, Yellow-green)+5V
	V(G,B)	Supply voltage for LED(Blue)+8V
	V _{CC}	Supply voltage for IC+5V
	GND	Ground
Input signal (CN2)	A0 to A3	Address specification signal for column driver
	RDATA GDATA BDATA	Serial data input for each color(H:ON, L:OFF) VD31→VD0
	LATCH	L: Display data is kept. H: Serial data is converted to display data.
	REENABLE GENENABLE BENABLE	Controls ON/OFF of each color of LED (H: LED OFF)
	CLOCK	Clock signal for data transmission in the shift-register.(L→H: serial data is shifted.)
Output signal (CN3)	GND	Ground for signal
	A0 to A3	Buffered input signal
	RDATA GDATA BDATA	Input signal generated through 32-bit shift register
	LATCH	Buffered input signal
	REENABLE GENENABLE BENABLE	Buffered input signal
	CLOCK	Buffered input signal
GND	Ground for signal	

Each signal is used as input signal for next unit.

*As for the terminal number, refer to the outline dimensions.

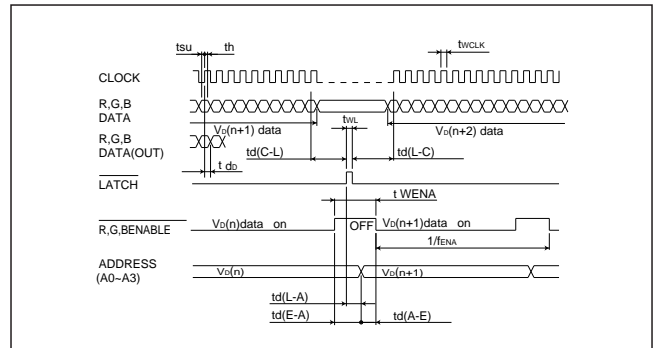
■ Electrical Characteristics

(Ta=25°C, V_{CC}=5V, V_(R,G)=5V, V_(B)=8V)

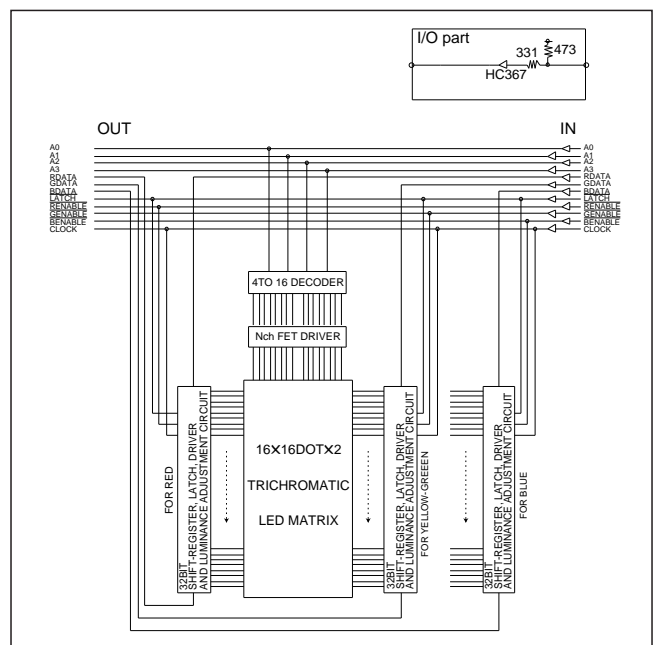
Parameter	Symbol	MIN.	TYP.	MAX.	Unit
Supply voltage for IC	V _{CC}	4.75	5.0	5.25	V
	V _(R,G) *1	4.75	5.0	5.25	V
Supply voltage for LED	V _{(B)*2}	7.75	8.0	8.25	V
	V _I	—	—	—	—
IC current dissipation	I _{CC}	—	300	500	mA
LED current dissipation	I _(R,G)	—	4.5	5.5	A
	I _{2(B)}	—	2.0	2.5	A
Input voltage	V _{IH}	3.5	—	—	V
	V _{IL}	—	—	1.5	V
Input current	I _{IH}	—	—	0.1	μA
	I _{IL}	—	—	0.12	μA
Clock frequency	f _{CLK}	—	—	10	MHz
Frame frequency	f _{FR}	70	250	1000	Hz

*1 Red, Yellow-green *2 Blue

■ Timing Chart



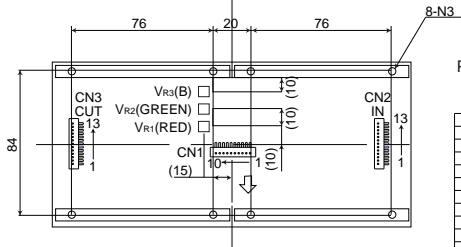
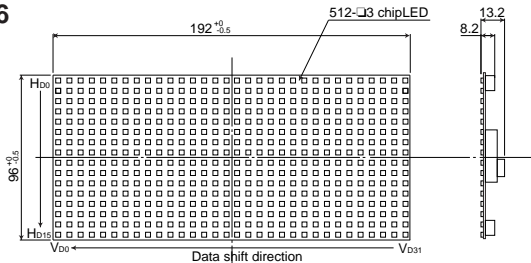
■ Block Diagram



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(Internet) • Data for sharp's optoelectronic/power device is provided for internet.(Address <http://www.sharp.co.jp/ecg/>)

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Pin connection

CN1
(Power supply)

No.	Name
1	V(B)
2	V(B)
3	V(R,G)
4	V(R,G)
5	VCC
6	GND
7	GND
8	GND
9	GND
10	GND

CN2
(Input signal)CN3
(Output signal)

No.	Name	No.	Name
1	A0	1	A0
2	A1	2	A1
3	A2	3	A2
4	A3	4	A3
5	RDATA	5	RDATA
6	GDATA	6	GDATA
7	BDATA	7	BDATA
8	LATCH	8	LATCH
9	RENABLE	9	RENABLE
10	GENABLE	10	GENABLE
11	BENABLE	11	BENABLE
12	CLOCK	12	CLOCK
13	GND	13	GND