

Crystalfontz America, Inc.

CUSTOMER : _____

MODULE NO.: CFAL25664A-Y-B1

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
ISSUED DATE:			

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PRELIMINARY

1. Module Classification Information

CFA L 25664 A - Y - B1
① ② ③ ④ ⑤ ⑥

①	Brand : CRYSTALFONTZ AMERICA, INCORPORATED	
②	Display Type : H→Character Type, G→Graphic Type , L→OLED	
③	Display's Logical Dimensions : 256 columns by 64 rows.	
④	Model Variant: A	
⑤	Color :	Y→Yellow
⑥	Special Code	B1

2. Precautions in use of OLED Modules

- (1) Avoid applying excessive shocks to the module or making any alterations or modifications to it.
- (2) Don't make extra holes on the printed circuit board, modify its shape or change the components of OLED module.
- (3) Don't disassemble the OLED.
- (4) Don't operate it above the absolute maximum rating.
- (5) Don't drop, bend or twist OLED.
- (6) Soldering: only to the I/O terminals.
- (7) Storage: please storage in anti-static electricity container and clean environment.

3. General Specification

Item	Dimension	Unit
Number of Characters	256 columns x 64 Rows	—
Module dimension	91.04 x 29.24 x 2.2 (MAX)	mm
View area	81.33 x 21.81	mm
Active area	79.33 x 19.81	mm
Dot size	0.28 x 0.28	mm
Dot pitch	0.31 x 0.31	mm
LCD type	OLED , Yellow	
Duty	1/64	

4. Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T _{OP}	-20	—	+70	°C
Storage Temperature	T _{ST}	-30	—	+80	°C
Input Voltage	V _I	0	—	V _{DD}	V
Logic Supply Voltage	V _{DD}	2.4	3.0	3.5	V
Panel Supply Voltage	V _{PP}	0	14.0	16.5	V

5. Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Logic Supply Voltage	V_{DD}		3.0	3.3	3.6	V
DC/DC Supply Voltage	V_{DC}		3.0	5	10	V
OLED Driver Supply	V_{PP}		-	14	-	V
Program Voltage	V_{PRG}		14		16.5	V
High-level Input Voltage	V_{IH}	Logic	$0.8 \cdot V_{DD}$	-	-	V
Low-level Input Voltage	V_{IL}	Logic	-	-	$0.2 \cdot V_{DD}$	V
High-level Output Voltage	V_{OH}	Sinking	$0.8 \cdot V_{DD}$	-	V_{DD}	V
High-level Output Voltage	V_{OL}	Sinking	-	-	$0.2 \cdot V_{DD}$	V

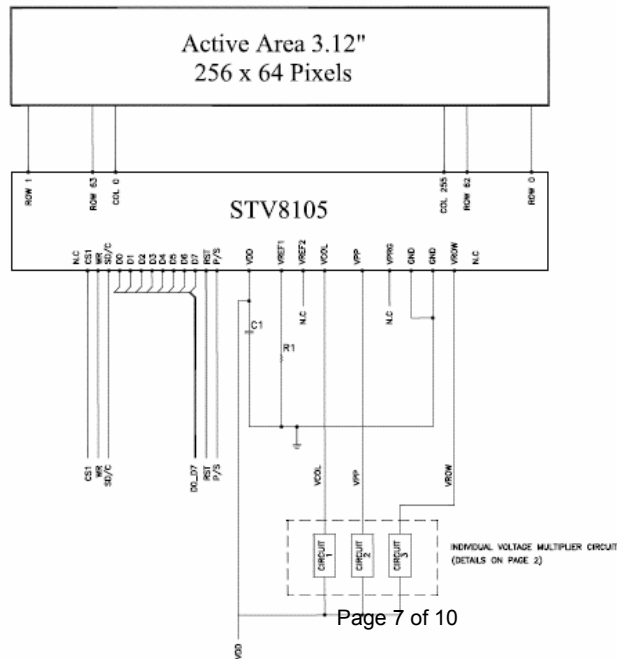
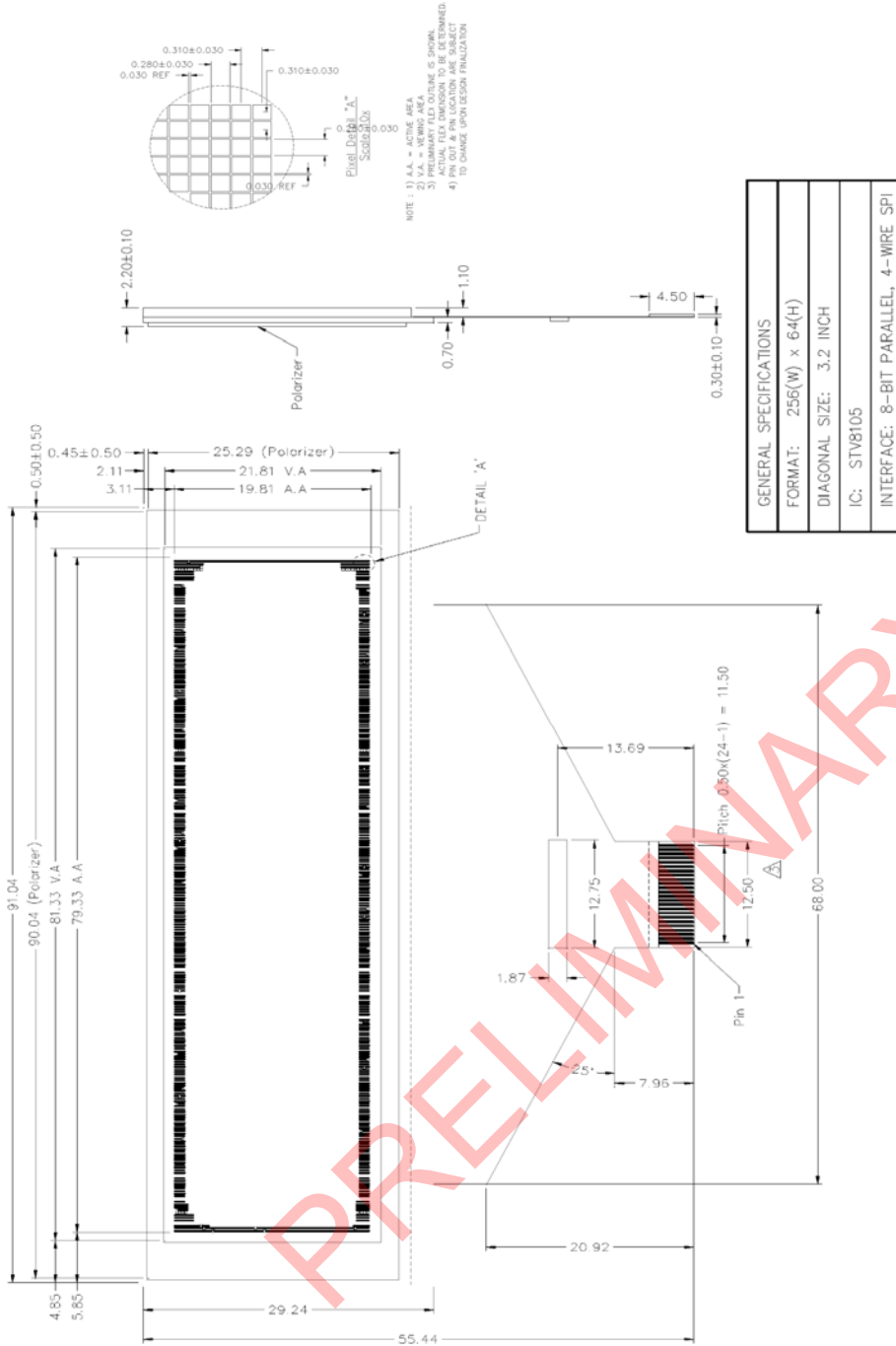
6. Optical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
View Angle	(V) θ			>160		deg
	(H) ϕ			>160		deg
Contrast Ratio (Dark Room)	CR	80cd/m ²	-	>100:1	-	-
Brightness		With polarizer		80		cd/m ²

7. Interface Pin Function

PIN	Name	DESCRIPTION
1	NC	No connected
2	CS1	Chip Select 1 Input. <i>This pin is Master Device Chip Select. The chip is enabled for MCU communication only when CS1 is pulled low.</i>
3	WR	Write <i>This pin should pulled low to enable write mode.</i>
4	SD/C	Data/Command control. <i>This pin is Data/Command Control pin. When this pin is pulled High, the input D0~D7 is treated as Display Data. When this pin is pulled Low, the inout D0~D7 will be transferred to the command register.</i>
5	D0	Parallel Data 0
6	D1	Parallel Data 1
7	D2	Parallel Data 2
8	D3	Parallel Data 3
9	D4	Parallel Data 4
10	D5	Parallel Data 5
11	D6	Parallel Data 6 (Serial : SCLK – Serial clock Input)
12	D7	Parallel Data 7 (Serial : SDATA – Serial Data)
13	RST	System Reset Input. <i>When the pin is pulled Low, initialization of the chip is executed</i>
14	P/S	Communicating Protocol Select. <i>When this pi is pulled High, Parallel interface is selected When this pin is pulled Low, Serial interface is selected</i>
15	VDD	Power Supply for logic circuit. <i>This is Analog/Digital low-voltage controller supply. It must be cometed to external source.</i>
16	VREF1	Reference Voltage. <i>A resistor should be connected to each of the Pin to Gnd.</i>
17	VREF2	
18	VCOL	Column Supply Voltage. <i>This is Odd and Even column supply voltage. It must be connected to external source</i>
19	VPP	Column Driver Power Supply. <i>This is Odd and Even column supply voltage. It must be connected to external source</i>
20	VPRG	OTP Power Supply. <i>This is non-volatile OTP memory program power supply. It must be connected to external source</i>
21	GRD	Analog/Digital Ground. <i>It also acts as reference for the logic pin, the OEL driving voltage and analog circuit. It must be connected to external source.</i>
22	GND	
23	VROW	Row Driver Supply. <i>This is Odd and Even row power supply. It must be connected to external source.</i>
24	NC	No connect

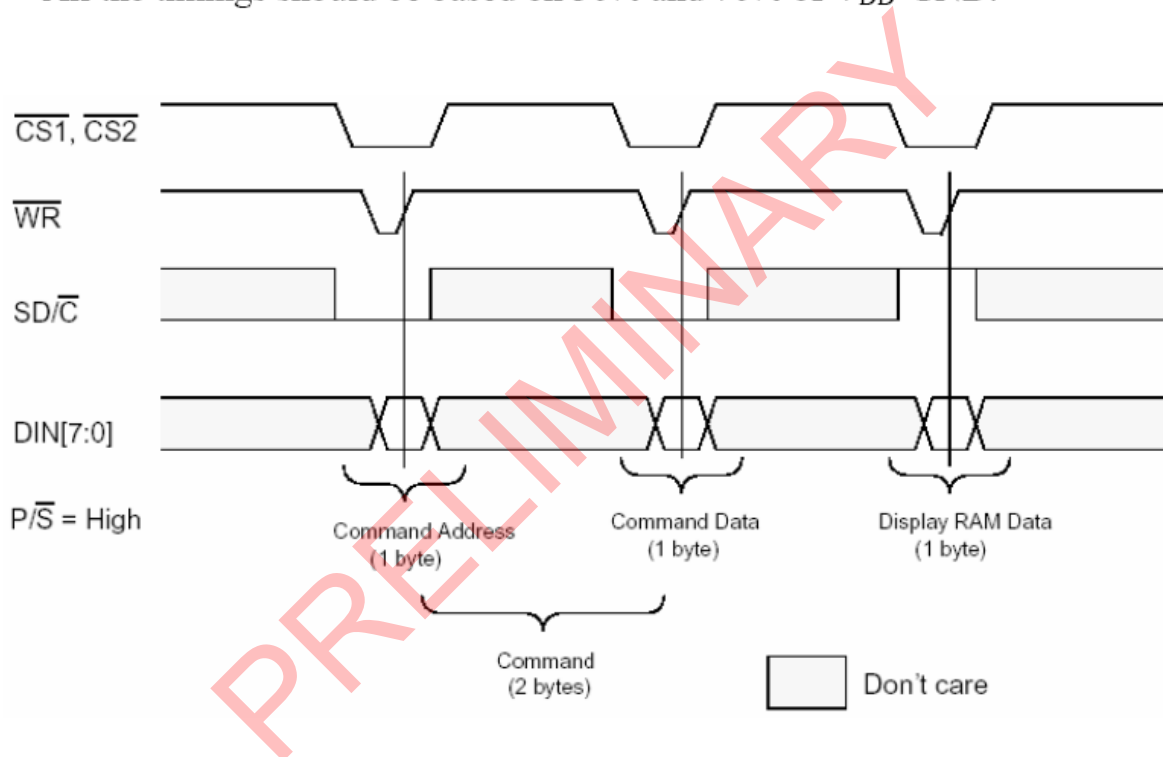
8. Contour Drawing & Block Diagram



9. Timing Characteristics

Symbol	Description	Min	Max	Unit
T_{ah}	Address Hold Time	10	-	ns
T_{aw}	Address Setup Time	0	-	ns
T_{cyc}	System Cycle Time	200	-	ns
T_{ds}	Data Setup Time	60	-	ns
T_{dh}	Data Hold Time	10	-	ns
T_{cclw}	Write Pulse Width	60	-	ns

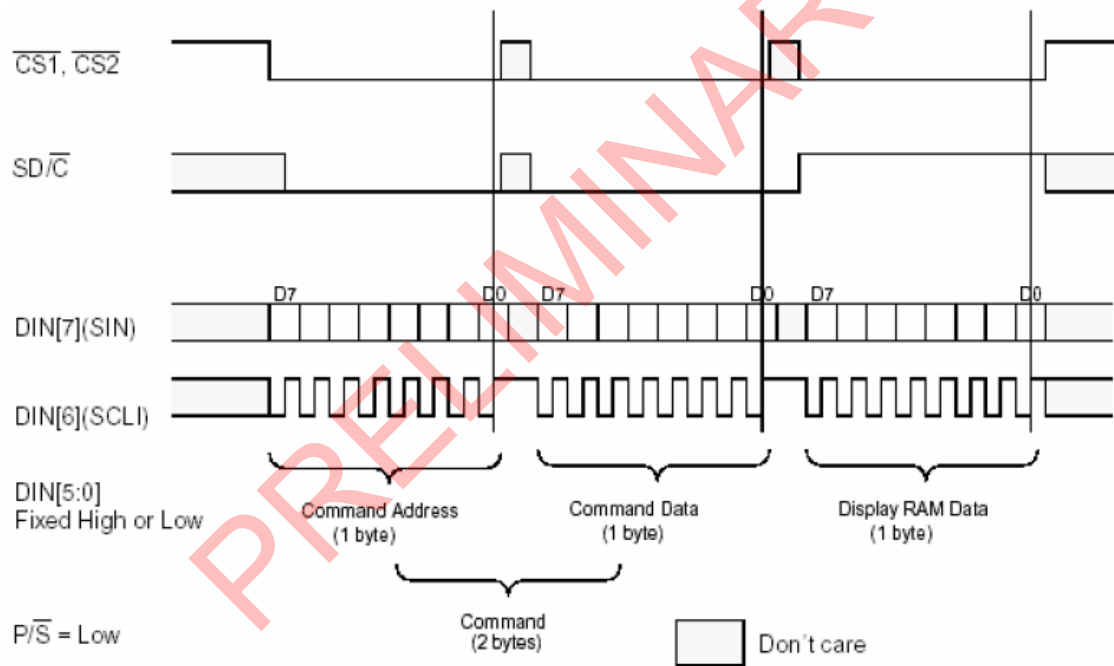
* All the timings should be based on 30% and 70% of V_{DD} -GND.



Serial Interface Timing Characteristics:

Symbol	Description	Min	Max	Unit
T _{scyc}	Serial Clock Cycle Time	200	-	ns
T _{sas}	Address Setup Time	20	-	ns
T _{sah}	Address Hold Time	20	-	ns
T _{css}	Chip Select Setup Time	20	-	ns
T _{csH}	Chip Select Hold Time	20	-	ns
T _{sds}	Data Setup Time	20	-	ns
T _{sdh}	Data Hold Time	20	-	ns
T _{slw}	Pulse Width (Low)	90	-	ns
T _{shw}	Pulse Width (High)	90	-	ns

* All the timings should be based on 30% and 70% of V_{DD}-GND.



10. OLED Lifetime

Conditions :

Temperature : 25°C

Brightness decay to 50% of original value

Panel lifetime is a function of the brightness as follows :

Average Brightness (cd/m²)	Lifetime (Hours)
80	10,000
40	20,000

PRELIMINARY