POWERTIP TECH. CORP.

SPECIFICATIONS

CUSTOMER	:	
SAMPLE CODE	:	SH800480T030-ZHA01
MASS PRODUCTION CODE	:	PH800480T030-ZHA01
SAMPLE VERSION	:	03
SPECIFICATIONS EDITION	:	008
DRAWING NO. (Ver.)	:	LMD-PH800480T030-ZHA01(Ver.004)
PACKAGING NO. (Ver.)	:	PKG- PH800480T030-ZHA01(Ver.001)

Customer Approved

Date:

Approved	Checked	Designer
廖志豪 Rex Liao	張慶源 Yuan Chang	陳宗淇 Howard Chen

POWERTIP
2023.03.14
TW RD APR

☐ Preliminary specification for design input

■ Specification for sample approval

POWERTIP TECH. CORP.

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History of Version

Date (mm / dd / yyyy)	Ver.	Edi.	Description	Page	Design by
05/09/2019	01	001	New Drawing.	-	Howard
11/05/2019	01	002	Add Surface treatment Modify Backlight Characteristics Modify CS/ID1,SDIN/ID2,SCK/ID3 Description Modify FPC suggested connector	4 9 12 Appendix	Howard
04/19/2020	02	003	Second Sample Modify System Bus Timing for RGB Interface Modify SYNC-DE Mode Add Kapton tape According to customer request modify Contents	14 16 Appendix -	Howard
04/24/2020	02	004	According to customer request modify Contents	Appendix	Howard
05/14/2020	02	005	LCD Type From IPS modify to Full Viewing Angle	4	Howard
07/14/2020	03	006	Modify Color of CIE Coordinate Modify LED Reverse Voltage	6 9	Howard
10/05/2020	03	007	Add the gap between the surface of front frame and the surface of front PLZ	Appendix	Howard
03/12/2023	03	008	Modify ID Pins Definition	12	Howard

1. SPECIFICATIONS

1.1 Features

Item	Standard Value
Display Resolution	800 * 3 (RGB) * 480 Dots
LCD Type	Full Viewing Angle, Normally Black , Transmissive type
Screen size(inch)	5.0 inch
Surface treatment	Anti-Glare
Color configuration	RGB Vertical Strip
Backlight Type	White LED B/L
Weight	60g
Interface	Parallel RGB (Data), SPI (Configuration)
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC Detail information please refer website : http://www.powertip.com.tw/news_detail.php?Key=1&cID=1

1.2 Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	121.0(W) x 75.9(L) x 3.1(H)	mm

LCD panel

Item	Standard Value	Unit
Active Area	108.0 (W) x 64.8(L)	mm

Note: For detailed information please refer to LCM drawing

1.3 Absolute Maximum Ratings

Module

Item	Symbol	Condition	Min.	Max.	Unit	Remark
Power Supply for TFT Panel	VDD	GND=0	-0.3	4.5	V	-
Power Supply for Backlight Unit	VCC	GND=0	-0.3	+20.0	V	
Operating Temperature	T_{OP} (Ts)	Note 1	-20	70	°C	
Storage Temperature	T_{ST} (Ta)	Note 2	-30	80	°C	

The absolute maximum rating values of this product are not allowed to be exceeded at any time. Should a module be used with any of the absolute maximum ratings exceeded, the characteristics of the module may not be recovered, or in an extreme case, the module may be permanently destroyed.

Note 1: Ts is the temperature of panel's surface

Note 2: Ta is the ambient temperature of samples

1.4 DC Electrical Characteristics

Module GND = 0V, Ta = 25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply for TFT Panel	VDD	GND=0V	3.0	3.3	3.6	V
Power Supply for Backlight Unit	VCC	GND=0V	5	12	15	V
Input Voltage for TFT Panel	V_{IH}	GND=0V	0.7VDD	-	VDD	V
	V_{IL}	GND=0V	0	-	0.3VDD	
Supply Current for TFT Panel	IDD	IDD@VDD=3.3V	-	75	110	mA
Supply Current for Backlight Unit	ICC	ICC@VCC=5V	-	250	380	
Supply Current for Backlight Unit	ICC	ICC@VCC=12V	-	110	160	
Input Voltage for PWM Signal	VPH	GND=0V	1.2	-	-	V
	VPL	GND=0V	-	-	0.4	V
Dimming Clock Rate	fP	GND=0V	5	-	100	KHz

1.5 Optical Characteristics

TFT LCD Module VDD= 3.3 V, Ta=25°C

Item	Symbol		Condition	Min.	Typ.	Max.	unit	-
Response time	Tr+Tf		Ta = 25°C θX, θY = 0°	-	37	56	ms	Note 2
Viewing angle	Top	θY+	CR ≥ 10		80	-	Deg.	Note 4
	Bottom	θY-			80	-		
	Left	θX-			80	-		
	Right	θX+			80	-		
Contrast ratio	CR		Ta = 25°C θX , θY = 0°	650	800	-	-	Note 3
Color of CIE Coordinate （With B/L）	White	X		0.27	0.32	0.37	-	Note1
		Y		0.30	0.35	0.40		
	Red	X		0.55	0.60	0.65		
		Y		0.30	0.35	0.40		
	Green	X		0.31	0.36	0.41		
		Y		0.53	0.58	0.63		
	Blue	X		0.08	0.13	0.18		
		Y		0.05	0.10	0.15		
Average Brightness Pattern=white display (With LCD)*1	IV		VCC=12.0V PWM="High" (Duty=100%)	800	1000	-	cd/m2	Note1
Uniformity (With LCD)*2	△ B		VCC=12.0V PWM="High" (Duty=100%)	70	-	-	%	Note1

1.6 Backlight Characteristics

Maximum Ratings

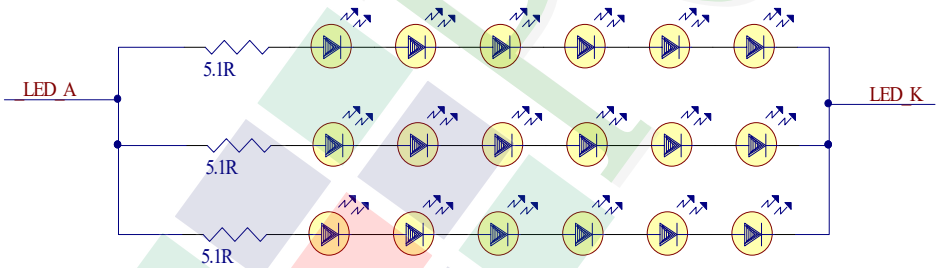
Item	Symbol	Min.	Max.	Unit	Remark
LED Forward Current	I_F	-	25*3	mA	-
LED Reverse Voltage	V_R	-	1.2*6	V	
Power Dissipation	PD		1500	mW	

Electrical / Optical Characteristics

Item	Symbol	Min.	Typ.	Max.	Unit	Remark
LED Voltage	V_L	18.0	19.0	-	V	Note1
LED Current	I_L	-	60	-	mA	-
LED life time	-	50,000	-	-	H_r	Note2

Note 1: The LED Supply Voltage is defined by the number of LED at Ta=25℃ and I_L=60 mA.

Note 2: The “LED life time” is defined as the module brightness decrease to 50% original brightness at Ta=25℃ and I_L=60 mA. The LED life time could be decreased if operating I_L is larger than 60 mA.



2.2 Interface Pin Description

TFT LCM Interface

Pin#	Name	Description
1	GND	Power ground.
2	VDD	Power for Digital Circuit.
3	VDD	Power for Digital Circuit.
4	VCC	Power For LED backlight.
5	VCC	Power For LED backlight.
6	PWM	Shutdown & Dimming control input for backlight. Do not allow this pin to float. “Hi” =100%, “Low” = 0%.
7	GND	Power ground.
8	R0	Red Data.
9	R1	Red Data.
10	R2	Red Data.
11	R3	Red Data.
12	GND	Power ground.
13	R4	Red Data.
14	R5	Red Data.
15	R6	Red Data.
16	R7	Red Data.
17	GND	Power ground.
18	G0	Green Data.
19	G1	Green Data.
20	G2	Green Data.
21	G3	Green Data.
22	GND	Power ground.
23	G4	Green Data.
24	G5	Green Data.
25	G6	Green Data.
26	G7	Green Data.
27	GND	Power ground.
28	B0	Blue Data.
29	B1	Blue Data.

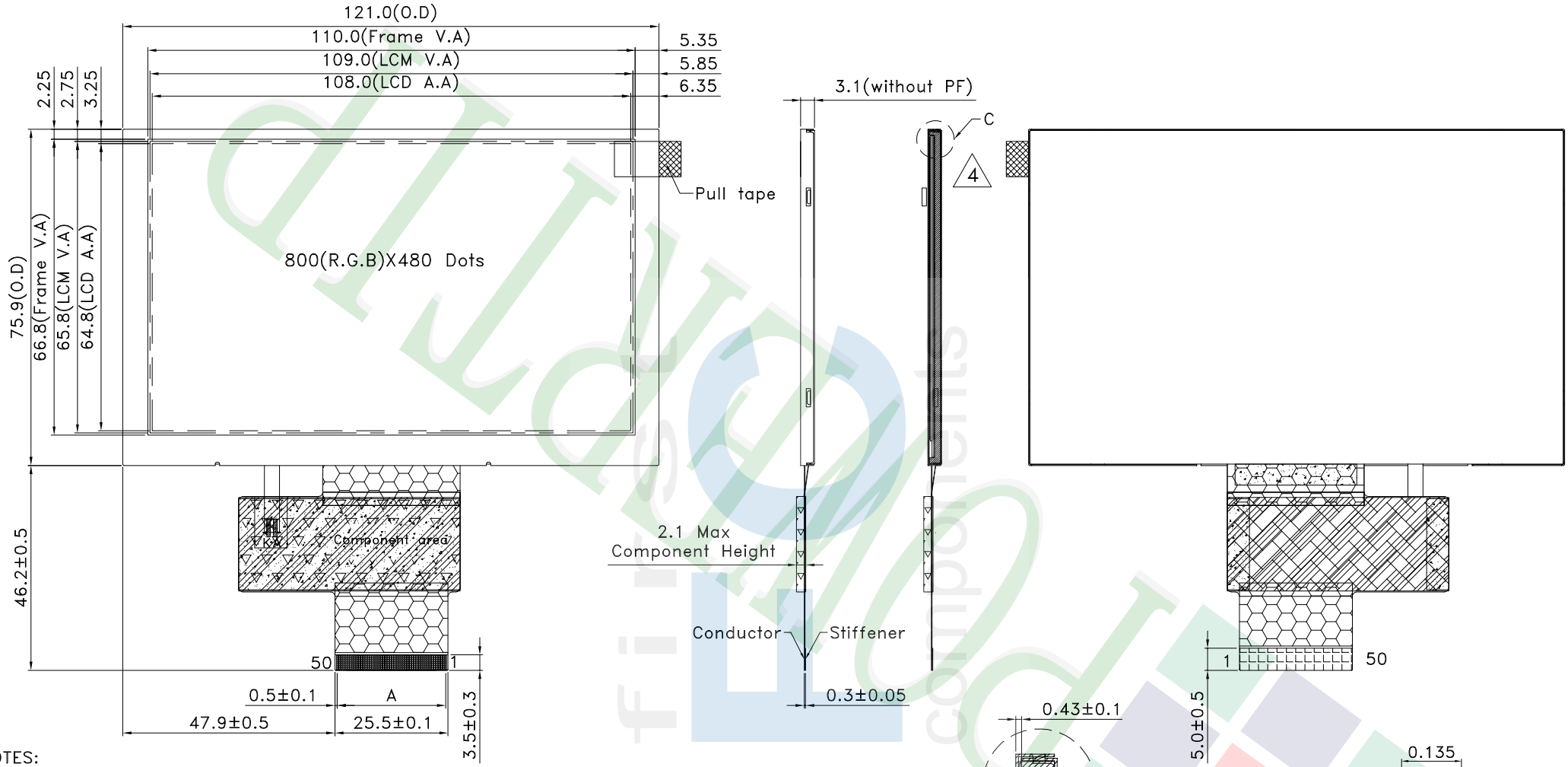
Pin#	Name	Description
30	B2	Blue Data.
31	B3	Blue Data.
32	GND	Power ground.
33	B4	Blue Data.
34	B5	Blue Data.
35	B6	Blue Data.
36	B7	Blue Data.
37	GND	Power ground.
38	HS	Line synchronization signal. Horizontal Sync Input.
39	VS	Frame synchronization signal. Vertical Sync Input.
40	GND	Power ground.
41	DE	Data Enable.
42	GND	Power ground.
43	DCLK	Sample clock. Data will be latched at the falling edge of DCLK.
44	GND	Power ground.
45	CS/ ID1	Serial communication chip selection/ID[4:1]These pins select LCM type. See NOTE1
46	SDIN/ ID2	Serial communication data/ ID[4:1]These pins select LCM type. See NOTE1
47	SCK/ ID3	Serial communication clock/ ID[4:1]These pins select LCM type. See NOTE1
48	DISPLAY CONTROL / ID4	Display Enable(Hi Active)./ ID[4:1]These pins select LCM type. See NOTE1
49	/RESET	Global Reset (Low Active).
50	GND	Power ground.

Note1:

ID Pins Definition:

	PIN 45 ID1	PIN 46 ID2	PIN 47 ID3	PIN 48 ID4
3.5” Module	X	0	0	X
4.3” Module	X	1	0	X
5.0” Module	X	0	1	X
7.0” Module	X	1	1	X

1. Resistor = 10k ohm
2. “X” = No use



NOTES:

1. LCD TYPE:TFT LCD
2. LCD DISPLAY:Normally Black/TRANSMISSIVE
3. The tolerance unless classified ±0.3mm
4. A :P0.5*49=24.5±0.05 ; W=0.35±0.05
5. :Kapton tape; :Component area; :Stiffener(SUS t=0.2mm to GND)
   :Aluminum Foil Conductive Adhesive Tape; :EMI Film;
6. FPC suggested connector : FH12A-50S-0.5SH(Hirose) or compatible

REV	REV BY	REVISER	DATE
007			
006			
005			
004	Add the gap between the surface of front frame and the surface of front PLZ	Clare	2020/10/5
003	Add Kapton tape	Clare	2020/3/20
002	Modify FPC suggested connector	Clare	2019/5/15
001	NEW DRAWING	Clare	2019/5/10

PART NO: PH800480T030-ZHA01

DRAWING NAME : LMD-PH800480T030-ZHA01

TITLE: LCD MODULE DRAWING

久正光電股份有限公司
POWERTIP TECHNOLOGY CORPORATION

Design	Clare	(3)	Surface
Check	Tina	Unit	MM
Approve	Jimmy	Scale	FIT
		Page	1/1
		Material	
		Thickness	
		Quantity	

Length(Min) (mm)	Tolerance	Precision	Precision Level
1 ~ 4			-
4 ~ 16			-
16 ~ 63			-
63 ~ 250			-
250 ~ 1000			-

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