SPECIFICATIONS

CUSTOMER	:	
SAMPLE CODE	:	SH800480T037-ZHA
MASS PRODUCTION CODE	:	PH800480T037-ZHA
SAMPLE VERSION	:	01
SPECIFICATIONS EDITION	:	002
DRAWING NO. (Ver.)	:	LMD-PH800480T037-ZHA (Ver.002)
PACKAGING NO. (Ver.)	:	PKG-PH800480T037-ZHA (Ver.001)

Customer Approved

Date:

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

POWERTIP
2023.11.29
TW RD APR

☐ Preliminary specification for design input

■ Specification for sample approval

POWERTIP TECH. CORP.

Represented by:

FIRST Components s.r.l.
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SPECIFICATIONS

Features

Item	Standard Value
Display Resolution	800 * 3 (RGB) * 480 Dots
LCD Type	Full Viewing Angle, Normally Black , Transmissive type
Screen size(inch)	7.0 inch
Color configuration	RGB Vertical Strip
Backlight Type	White LED B/L
Weight	110g
Interface	Parallel RGB (Data), SPI (Configuration)
Other(controller/driver IC)	ST72568 (Or Compatible IC)
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC

Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	164.9(W) x 100.0(L) x 3.4(H)	mm

LCD panel

Item	Standard Value	Unit
Active Area	153.84 (W) x 85.632(L)	mm
Pixel Size	0.1923(W) * 0.1784(H)	mm

Note: For detailed information please refer to LCM drawing

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Absolute Maximum Ratings

Module

Item	Symbol	Condition	Min.	Max.	Unit	Remark
Power Supply for TFT Panel	VDD	GND=0	-0.3	4.0	V	-
Power Supply for Backlight Unit	VCC	GND=0	-0.3	26.5	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

DC Electrical Characteristics

Module

GND = 0V, Ta = 25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply for TFT Panel	VDD	GND=0V	3.1	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	-	100	150	mA
Supply Current for Backlight Unit	ICC	ICC@VCC=5V	-	570	855	
Supply Current for Backlight Unit	ICC	ICC@VCC=12V	-	225	340	
Input Voltage for PWM Signal	VIH	GND=0V	1.6	-	-	V
	VIL	GND=0V	-	-	0.8	V
Dimming Clock Rate	fP	GND=0V	0.1	-	8	KHz

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°	-	30	45	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			500	600	-	-	Note 3
Color of CIE Coordinate（With B/L）	White	X	Ta = 25°C θX , θY = 0°	0.24	0.29	0.34	-	Note1
		Y		0.32	0.37	0.42		
	Red	X		0.54	0.59	0.64		
		Y		0.32	0.37	0.42		
	Green	X		0.27	0.32	0.37		
		Y		0.54	0.59	0.64		
	Blue	X		0.08	0.13	0.18		
		Y		0.09	0.14	0.19		
Average Brightness Pattern=white display（With B/L ）*1	IV		VCC=12.0V PWM="High" (Duty=100%)	800	1000	-	cd/m2	Note1
Uniformity（With B/L ）*2	△ B		VCC=12.0V PWM="High" (Duty=100%)	70	-	-	%	Note1

Backlight Characteristics

Maximum Ratings

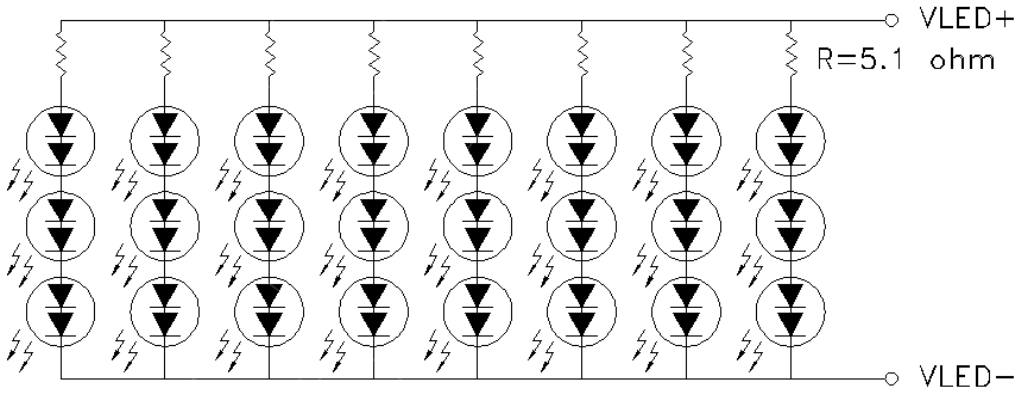
Item	Symbol	Min.	Max.	Unit	Remark
LED Forward Current	I_F	-	30	mA	EACH LED
LED Reverse Voltage	V_R	-	5	V	
Power Dissipation	PD		210	mW	

Electrical / Optical Characteristics

Item	Symbol	Min.	Typ.	Max.	Unit	Remark
LED Voltage	V_L	-	18.0	19.2	V	Note1
LED Current	I_L	-	160	-	mA	-
LED life time	-	50000	-	-	H_r	Note2

Note 1: The LED Supply Voltage is defined by the number of LED at Ta=25℃ and I_L=160mA.

Note 2: The “LED life time” is defined as the module brightness decrease to 50% original brightness at Ta=25℃ and I_L=160 mA. The LED life time could be decreased if operating I_L is larger than 160mA.



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.

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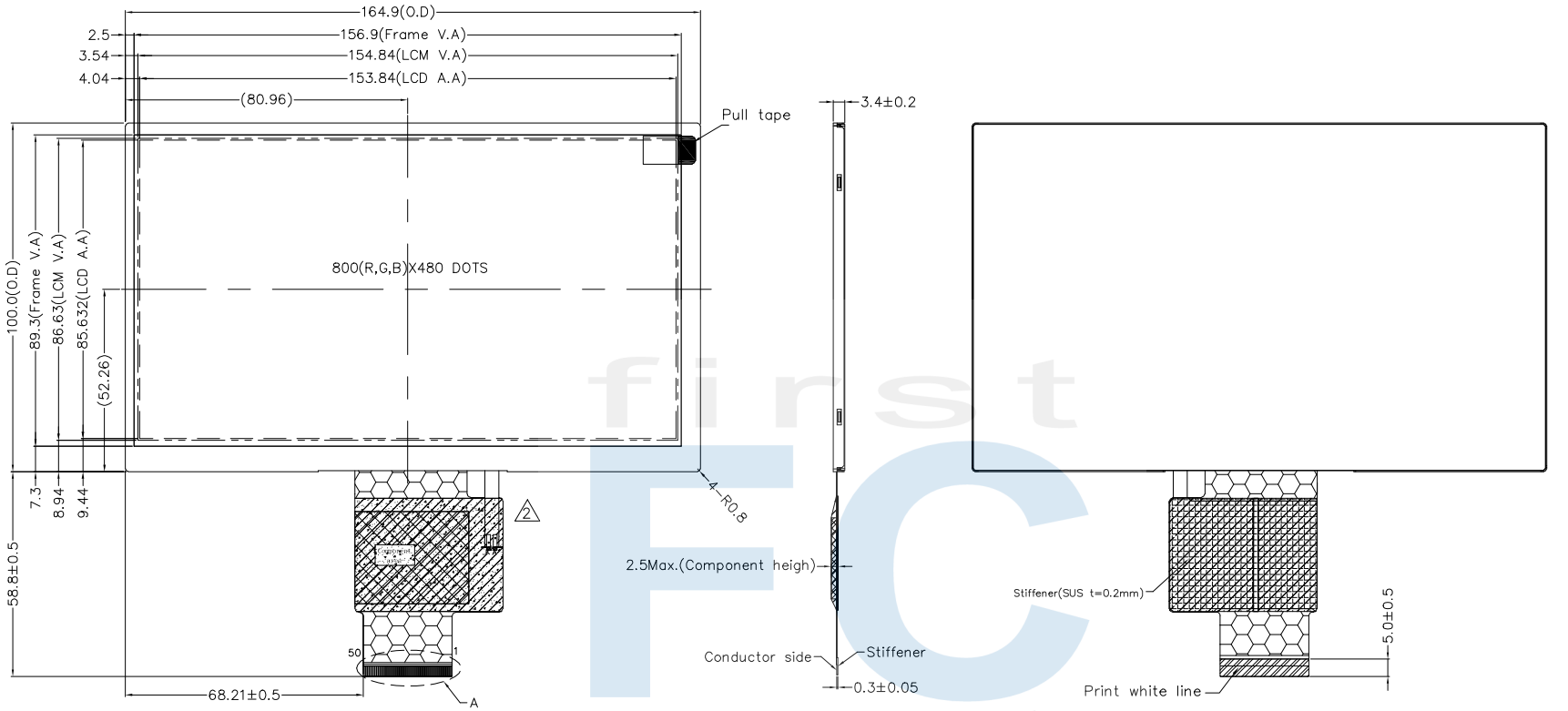
Pin#	Name	Description
30	B2	Blue Data.
31	B3	Blue Data.
32	GND	Power ground.
33	B4	Blue Data.
34	B5	Blue Data.
35	B6	Blue Data.
36	B7	Blue Data.
37	GND	Power ground.
38	HS	Line synchronization signal. Horizontal Sync Input.
39	VS	Frame synchronization signal. Vertical Sync Input.
40	GND	Power ground.
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 ID3
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: IPS LCD
2. LCD DISPLAY: Normally Black/Transmissive
3. The tolerance unless classified ±0.3mm
4. LCM FPC Matching Connector: FH12A-50S-0.5SH (Hirose) or Compatible
5. Component Area; Aluminum Foil Conductive Adhesive Tape; Kapton tape; EMI; Stiffener

REV	REV BY	REVISER	DATE
007			
006			
005			
004			
003			
002	MODIFY DRAWING	Kevin	2023/11/08
001	NEW DRAWING	Kevin	2023/08/30

PART NO: PH800480T037-ZHA

DRAWING NAME: LMD-PH800480T037-ZHA

TITLE: LCD MODULE DRAWING

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

Design	Kevin	(3)	Surface		
Check	Stone	Unit	MM	Material	
Approve	Rex	Scale	1:1	Thickness	
		Page	1/1	Quantity	

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