SPECIFICATIONS

CUSTOMER	:	
SAMPLE CODE	:	SH102600T013-ZHC05
MASS PRODUCTION CODE	:	PH102600T013-ZHC05
SAMPLE VERSION	:	01
SPECIFICATIONS EDITION	:	003
DRAWING NO. (Ver.)	:	JLMD-PH102600T013-ZHC05_001
PACKAGING NO. (Ver.)	:	JPKG-PH102600T013-ZHC05_001

Customer Approved

Date:

POWERTIP
2022.03.09
JS RD APPROVED

Approved	Checked	Designer
劉進	劉進	陳璐

☐ Preliminary specification for design input

■ Specification for sample approval

POWERTIP TECH. CORP.

Represented by:

first FC components
FIRST Components s.r.l.
www.first-components.com
technical@first-components.com
+39 0332 1888005

SPECIFICATIONS

Features

Item	Standard Value
Display Type	1024 * 3 (RGB) * 600 Dots
LCD Type	Full Viewing Angle , Normally Black , Transmissive type
Screen size(inch)	7.0 inch
Color configuration	RGB-Strip
Interface	RGB Interface
Other(controller/driver IC)	ST5021-G3-1 + ST5651CB-G3-1 (Or Compatible IC)
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC

Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	186.8(W) * 110.56(L) * 7.59(H)	mm

LCD panel

Item	Standard Value	Unit
Viewing Area	155.28(W) x 87.12 (L)	mm
Active Area	154.2144(W) * 85.92 (L)	mm

Note : For detailed information please refer to LCM drawing

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Absolute Maximum Ratings

Module

Item	Symbol	Condition	Min.	Max.	Unit
Power Supply for TFT Panel	V_{DD}	GND=0V	-0.3	3.96	V
Power Supply for Backlight Unit	V_{CC}	GND=0V	-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

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 Signal Voltage	VIH	-	0.7V_{DD}	-	V_{DD}	V
	VIL	-	0	-	0.3 V_{DD}	V
Supply Current for TFT Panel	IDD	IDD@VDD=3.3V	-	140	210	mA
Supply Current for Backlight Unit	ICC	ICC@VCC=5V	-	1.0	1.5	A
Supply Current for Backlight Unit	ICC	ICC@VCC=12V	-	400	600	mA
Input Voltage for PWM Signal	VPH	GND=0V	1.2	-	-	V
	VPL	GND=0V	-	-	0.4	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		-	-	32	48	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	VCC=12.0V PWM="High" (Duty=100%)	650	800		-	Note 3
Color of CIE Coordinate (B/L+LCD+CTP)	White	X		0.25	0.30	0.35	-	Note1
		Y		0.31	0.36	0.41		
	Red	X		0.56	0.61	0.66		
		Y		0.30	0.35	0.40		
	Green	X		0.28	0.33	0.38		
		Y		0.53	0.58	0.63		
	Blue	X		0.09	0.14	0.19		
		Y		0.06	0.11	0.16		
Average Brightness Pattern=white display (B/L+LCD+CTP)*1		IV	VCC=12.0V PWM="High" (Duty=100%)	900	1000	-	cd/m^2	Note1
Uniformity (B/L+LCD+CTP)*2		△B	VCC=12.0V PWM="High" (Duty=100%)	70	-	-	%	Note1

Backlight Characteristics

Maximum Ratings

Item	Symbol	Conditions	Min.	Max.	Unit
LED Forward Current	IF	Ta =25℃	-	120/LED	mA
LED Reverse Voltage	VR	Ta =25℃	-	5	V
Power Dissipation	PD	Ta =25℃	-	4.824	W

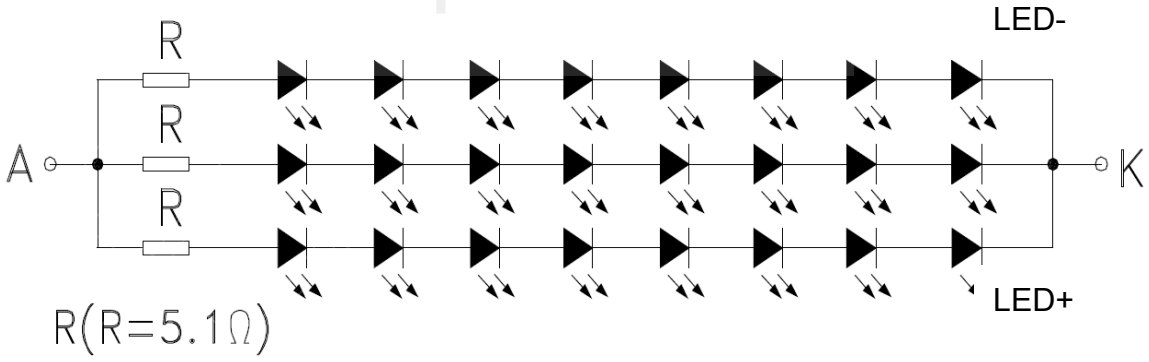
Backlight Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	VF	IF=180mA	22.0	24.0	26.8	V
Average Brightness (Without LCD & CTP)	IV		11500	13000	-	cd/m^2
CIE Color Coordinate (Without LCD & CTP)	X		0.25	0.28	0.31	-
	Y		0.26	0.29	0.32	
Uniformity *1	△B		80	-	-	*2
Color	White					

*1：This value will be changed while mass production.

*2：△B=B(min) / B(max)%

B/L Internal Circuit Diagram



Other Description

Item	Conditions	Description
Life Time	Ta =25℃ IF=180mA	50000 hrs

Touch Panel Characteristics

Features

Item	Standard Value
Touch Panel Size	7”
Touch type	Projective capacitive touch panel
Input Method	True Multi-touch with up to 5 Points of Absolution X and Y Coordinates
Output Interface	I^2C
IC	HY4635

I^2C Address

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
0	1	1	1	0	0	0	**R/W**

Bit 0: 0 for Write / 1 for Read

Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	Refer to drawing	-

Absolute Maximum Ratings

Item	Symbol	Condition	Min.	Max.	Unit
Supply voltage	TPVDD	-	-0.2	4.0	V
Operating Temperature	T_{OP}	Non condensing	-20	70	°C
Storage Temperature	T_{ST}	Non condensing	-30	80	°C

DC Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Power Supply Voltage	TPVDD	-	2.8	3.3	3.6	V

Optical Characteristics

Item	Standard Value	Unit
Total light transmittance	85% or more	-
Hardness	⩾7H	-

Interface Pin Description

TFT LCM Interface

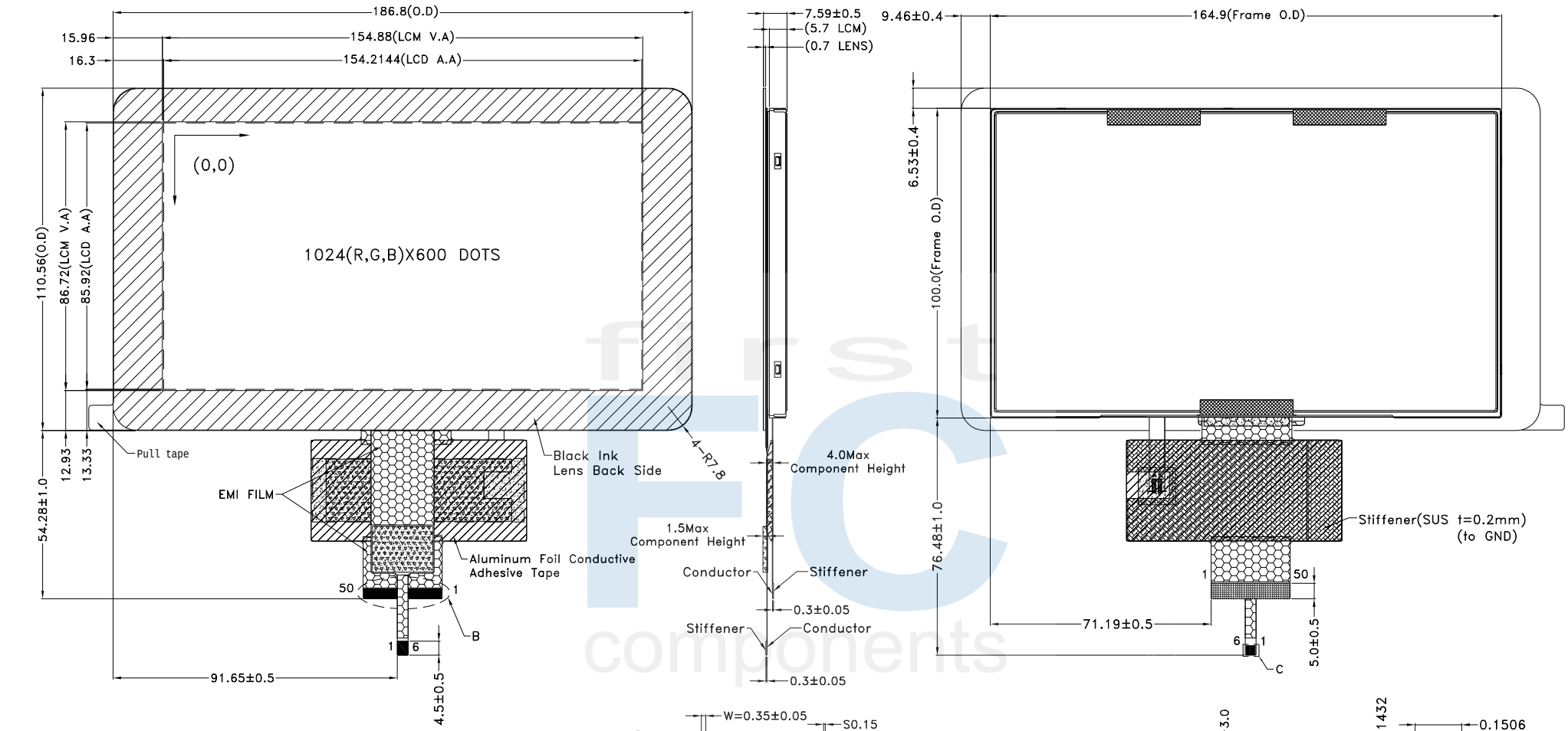
Pin#	Name	Description
1	GND	Power ground.
2	VDD	Power for Digital Circuit.
3	VDD	Power for Digital Circuit.
4	VCC	Power For LED backlight.
5	VCC	Power For LED backlight.
6	PWM	Shutdown & Dimming control input for backlight. Do not allow this pin to float. “Hi” =100%, “Low” = 0%.
7	GND	Power ground.
8	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.

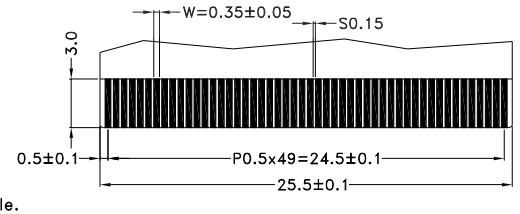
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30	B2	Blue Data.
31	B3	Blue Data.
32	GND	Power ground.
33	B4	Blue Data.
34	B5	Blue Data.
35	B6	Blue Data.
36	B7	Blue Data.
37	GND	Power ground.
38	HS	Line synchronization signal. Horizontal Sync Input.
39	VS	Frame synchronization signal. Vertical Sync 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	NC	Not Connect
46	NC	Not Connect
47	NC	Not Connect
48	NC	Not Connect
49	/RESET	Global Reset (Low Active).
50	GND	Power ground.

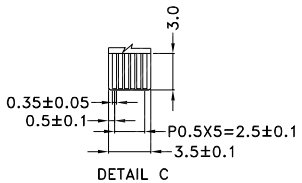
CTP Interface

Pin#	Name	Description
1	GND	Power ground.
2	TPVDD	Power supply for CTP
3	SCL	I^2C Clock.
4	SDA	I^2C Data.
5	INT	The interrupt from the CTP to the Host H: CTP interrupt not requested L: CTP request interrupt
6	RESET	RESET pin for CTP

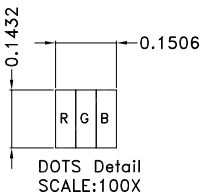




DETAIL B
SCALE 4X



DETAIL C
SCALE: 3X



DOTS Detail
SCALE:100X

NOTES:
1.LCD TYPE: TFT LCD
2.LCD DISPLAY: Normally Black/TRANSMISSIVE
3.CTP FPC IC: FT5426
4.The tolerance unless classified ±0.3mm
5. :Kapton tape; :Component area; :Stiffener(SUS t=0.2mm to GND)
:Aluminum Foil Conductive Adhesive Tape; :EMI Film;
6.LCM FPC suggested connector : "Hirose" FH12A-50S-0.5SH or compatible.
T/P FPC suggested connector : "Hirose" FH34SRJ-6S-0.5SH(50) or compatible.

REV		REVISER	DATE
007			
006			
005			
004			
003			
002			
001	NEW DRAWING	Air	2021/9/7

PART NO: PH102600T013-ZHC05

DRAWING NAME : LMD-PH102600T013-ZHC05

TITLE: LCD MODULE DRAWING

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

Design	Air	(3)	Surface		
Check	-	Unit	MM	Material	
Approve	Liujin	Scale	1:1	Thickness	
		Page	1/1	Quantity	

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

sales@first-components.com