SPECIFICATIONS

CUSTOMER	:	
SAMPLE CODE	:	SH128128T041-LAA07
MASS PRODUCTION CODE	:	PH128128T041-LAA07
SAMPLE VERSION	:	01
SPECIFICATIONS EDITION	:	002
DRAWING NO. (Ver.)	:	JLMD-PH128128T041-LAA07_002
PACKAGING NO. (Ver.)	:	JPKG-PH128128T041-LAA07_001

Customer Approved

Date:

POWERTIP
2018.05.31
RD APPROVED

Approved	Checked	Designer
閆偉	劉進	夏子豪

□ Preliminary specification for design input

■ Specification for sample approval

POWERTIP TECH. CORP.

Represented by:

FIRST Components s.r.l.
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+39 0332 1888005

SPECIFICATIONS

Features

Main LCD Panel

Item	Standard Value
Display Type	128(R、G、B) * 128 Dots
LCD Type	Normally white TN, Transmissive type
Screen size(inch)	1.44 inch
Viewing Direction	12 O'clock
Color configuration	R.G.B. vertical stripe
Backlight	White LED
Interface	8 bit Parallel Interface
Other(controller / driver IC)	Sitronix: ST7735S
ROHS	THIS PRODUCT CONFORMS THE ROHS OF PTC

Mechanical Specifications

Item	Standard Value	Unit
Outline Dimension	31.1（W）* 36.9（L）* 2.85（H）	mm

TFT LCD Panel

Item	Standard Value	Unit
Viewing Area	26.498 (W) *27.496 (L)	mm
Active Area	25.498 (W) * 26.496 (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
Supply Voltage	VDD	-	-0.3	+4.8	V
Supply Voltage(Logic)	VDDI	-	-0.3	+4.6	V
Driver supply voltage	VGH-VGL	-	-0.3	+30.0	V
Logic input voltage range	VIN	-	-0.3	VDDI+0.3	V
Logic output voltage range	VO	-	-0.3	VDDI+0.3	V
Operating Temperature	TOP	-	-20	+70	°C
Storage Temperature	TST	-	-30	+80	°C
Storage Humidity	HD	Ta ≦ 60 °C	-	90	%RH

DC Electrical Characteristics

Module GND = 0V, Ta = 25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
System voltage	VDD	-	2.7	3.0	3.3	V
Interface operation voltage	VDDI	-	1.65	1.8	3.7	V
Logic-high input voltage	VIH	-	0.7VDDI	-	VDDI	V
Logic-low input voltage	VIL	-	VSS	-	0.3VDDI	V
Logic-high output voltage	VOH	IOH=-1.0mA	0.8VDDI	-	VDDI	V
Logic-low output voltage	VOL	IOL=+1.0mA	VSS	-	0.2VDDI	V
Supply Current	IDD	VDD=3.0V	-	1.6	2.5	mA

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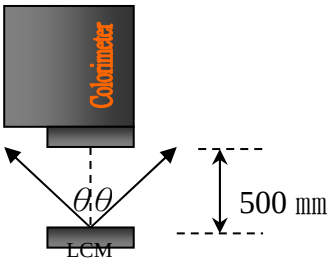
Optical Characteristics

TFT LCD Panel

VDD=3.0V, Ta=25°C

Item		Symbol	Condition	Min.	Typ.	Max.	unit	-
Response time		Tr+ Tf	-	-	-	-	ms	Note2
Viewing angle	Top	θY+	CR≥(10)	-	15	-	Deg.	Note4
	Bottom	θY-		-	45	-		
	Left	θX-		-	45	-		
	Right	θX+		-	45	-		
Contrast ratio		CR	-	150	200	-	-	Note3
Color of CIE Coordinate (With B/L)	White	X	IF=20mA	0.25	0.30	0.35	-	Note1
		Y		0.26	0.31	0.36		
	Red	X		0.59	0.64	0.69		
		Y		0.29	0.34	0.39		
	Green	X		0.27	0.32	0.37		
		Y		0.52	0.57	0.62		
	Blue	X		0.09	0.14	0.19		
		Y		0.05	0.10	0.15		
Average Brightness Pattern=white display (With B/L)		IV	IF=20mA	200	310	-	cd/m2	Note1
Uniformity (With B/L)		△B	IF=20mA	80	-	-	%	Note1





Colorimeter=BM-7 fast

Backlight Characteristics

Maximum Ratings

Item	Symbol	Conditions	Min.	Max.	Unit
Forward Current	IF	Ta =25℃	-	30	mA
Reverse Voltage	VR	Ta =25℃	-	5.0	V
Power Dissipation	PD	Ta =25℃	-	90	mW

Electrical / Optical Characteristics

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	VF	IF= 20mA	2.8	3.2	3.6	V
Average Brightness	IV	IF= 20mA	4000	5000	-	cd/m^2
Color of CIE Coordinate	X	IF= 20mA	0.27	0.30	0.33	-
	Y		0.27	0.30	0.33	
Color	White					

Circuit diagram



Other Description

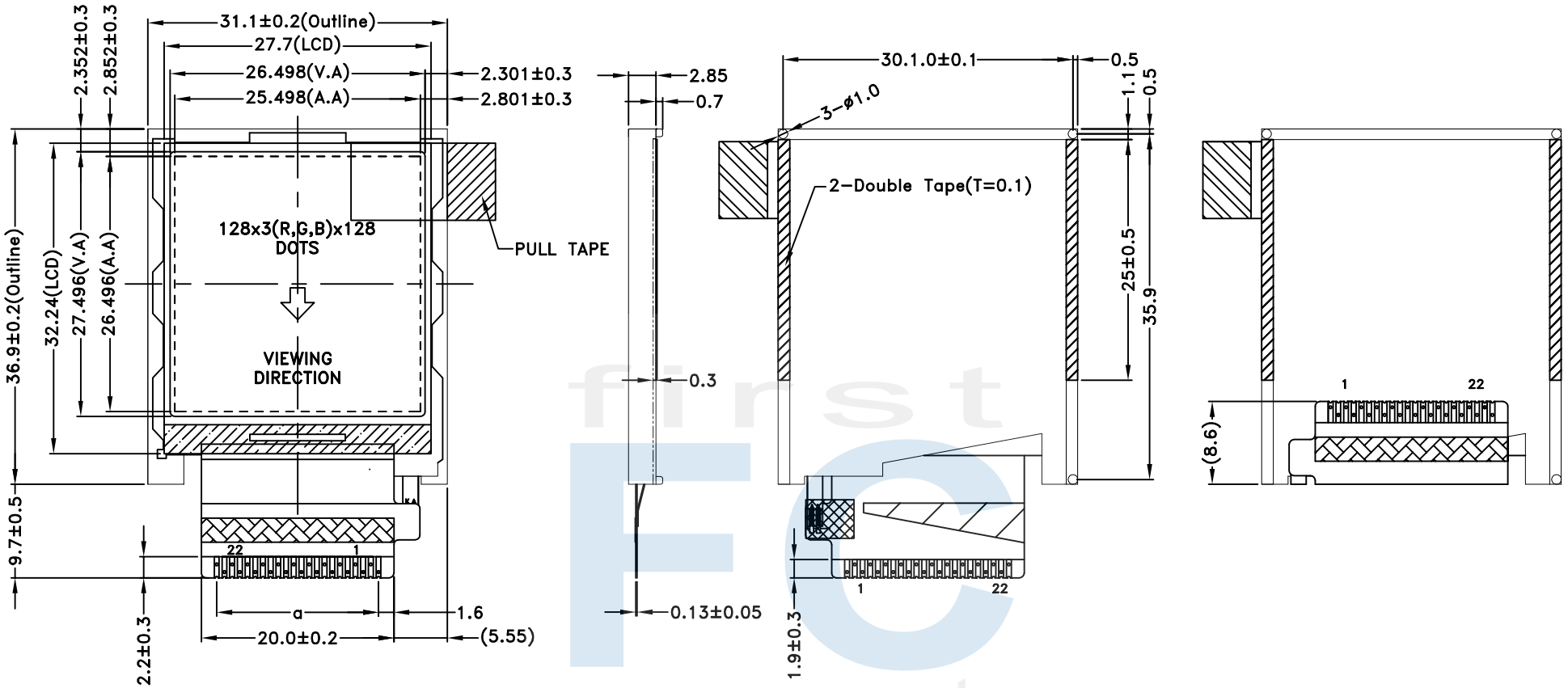
Item	Conditions	Description
Life Time	Ta =25℃ IF= 20mA	20000 hrs

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Interface Pin Description

Pin NO	Symbol	Function
1	LED+	Backlight LED anode input pin.
2	LED-	Backlight LED cathode input pin.
3	GND	System ground
4	VDD	Power supply for analog, digital system and booster circuit.
5	VDD	
6	RD	Read enable in 8080 MCU parallel interface.
7	RS	Display data/command selection pin in MCU interface. RS ='1': display data or parameter. RS ='0': command data.
8	D1	D[7:0] are used as MCU parallel interface data bus.
9	D3	
10	D5	
11	D7	
12	RST	This signal will reset the device and it must be applied to properly initialize the chip. Signal is active low.
13	/CS	Chip selection pin, Low enable
14	D6	D[7:0] are used as MCU parallel interface data bus.
15	D4	
16	D2	
17	D0	
18	WR	Write enable in MCU parallel interface.
19	GND	System ground
20	GND	
21	VDDI	Power supply for I/O system.
22	AVCL	A power supply pin for generating GVCL.Connect a capacitor for stabilization.

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NOTE:

1.DRIVING ELEMENT : 65K COLOR a-Si TFT
2.THE TOLERANCE UNLESS CLASSIFIED±0.2mm
002 3.DRIVER IC:ST7735S
4.a:P0.8X21=16.8±0.1
5.Top: -20~70°C Tst:-30~80°C

REV	REV BY	REVISER	DATE
007			
006			
005			
004			
003			
002	UPDATE DRAWING	Air	2018/03/01
001	NEW DRAWING	Air	2018/02/28

PART NO:

DRAWING NAME :

TITLE: LCD MODULE DRAWING

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

Design	Air	(3)	Surface		
Check	Terry	Unit	MM	Material	
Approve	Ryan	Scale	3:5	Thickness	
		Page	1/1	Quantity	

精度等級 / 公差 / 最小長度 (mm)	精級
1 ~ 4	-
4 ~ 16	-
16 ~ 63	-
63 ~ 250	-
250 ~ 1000	-

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