TFT-LCD Module

Development Specification

EPSON

L5F30878 (ECB, Transflective with High-reflectance)

* This document is the specification of development target. Therefore information in this document is subject to change without notice.

<Feature>

- **Display size (diagonal)** : 7.6cm (3.0inch)
- **Resolution** : Wide-QVGA (240RGB ×400lines)
- **LCD mode** : ECB, Transflective with High-Reflectance
- **Viewing Direction** : 1:30
- **Interface** : Parallel 18bit RGB
- **Power supply** : (Analog) +3V (I/O) +3V
- **Operating temperature range** : -10 ~ +60℃
- **Storage temperature range** : -20 ~ +70℃

<Outline Specification>

☐ General specification

Ta=25℃

Item	Parameter	Unit	Remarks
Module Outline	45.15 (H) ×76.6 (V) × 2.66 (D)	mm	*1
Active area	39.24 (H) ×65.40(V)	mm	
Number of dots	240RGB (H) ×400 (V)	dots	
Number of color	262,144	colors	
Display Size	3.0	inch	
Dot format	RGB stripe		
Pixel pitch	0.1635 (H) ×0.1635 (V)	mm	
Weight	(15.3)	g	

*1 exclude FPC, parts area

☐ Maximum rating

Ta=25℃

Item	Symbol	MIN	MAX	Unit	Remarks
Power Supply Voltage	VDD / VDDI	0	3.3	V	
Input Voltage	Vi	0	VDD+0.3	V	
Operating Temperature	Top	-10	60	℃	*1, *2
Storage Temperature	Tst	-20	70	℃	*1
Humidity			95	%RH	within 240H operation *3

*1 Maximum temperature in the panel surface is 70℃
*2 The temperature range is ambient temperature.
please consider high fever in the case you attach it to case etc.
*3 Without condensation

☐ Recommended operating condition

Item		Symbol	Condition	MIN	TYP	MAX	Unit	Remarks
Power Supply Voltage		VDD	—	2.7	—	3.3	V	
		VDDI	—	1.7	—	3.3	V	
Input Voltage		VIH1	—	0.8VDDI	—	VDDI	V	*1
		VIL1	—	0	—	0.2VDDI	V	
Common electrode Voltage	amplitude	Vcom_H	—	—	—	—	Vpp	*2
	center value	Vcom_L	—	—	—	—	V	
			—					

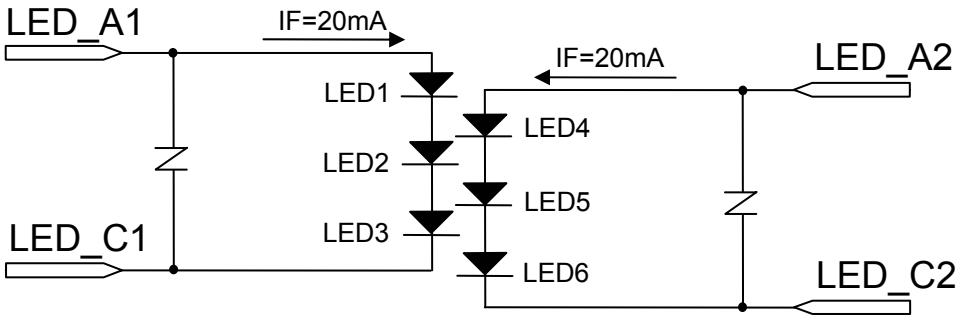
*1 applicable terminal pin : signal interface terminal pin
*2 Optimum flicker value is set up at factory shipment

☐ Optical specification

Ta=25℃

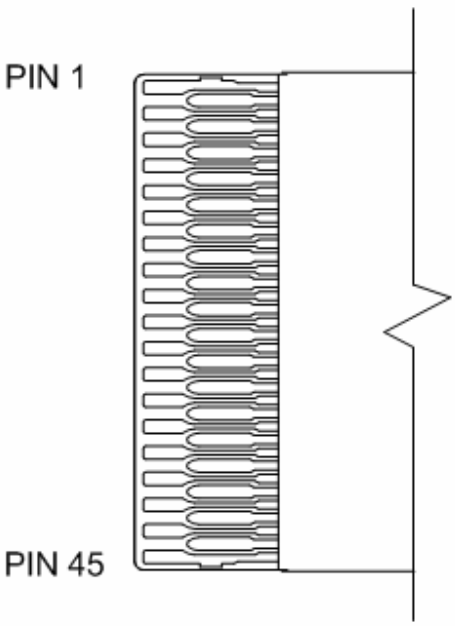
Item	Symbol	Condition		Min	Typ	Max	Unit	Remarks
		B/L	Others					
Brightness	B	on	Φ=0deg.	-	200	-	cd/㎡	6LEDs (20mA)
Contrast Ratio	K	on	Φ=0deg.	-	180	-		
		off	Φ=0deg.	-	15	-		
Color coordinates (White)	x	on	Φ=0deg.	-	-	-		
	y		Φ=0deg.	-	-	-		
NTSC Ratio	-	on	Φ=0deg.	-	37	-	%	
		off	Φ=0deg.	-	8	-		
Reflectance	-	off	Φ=0deg.	-	6	-	%	

☐ Backlight circuit



Item	Condition	Rating			Unit
		Min	Typ	Max	
B/L Forward Voltage	IF=20mA/circit		(9.6)		V

<Pin assignment>



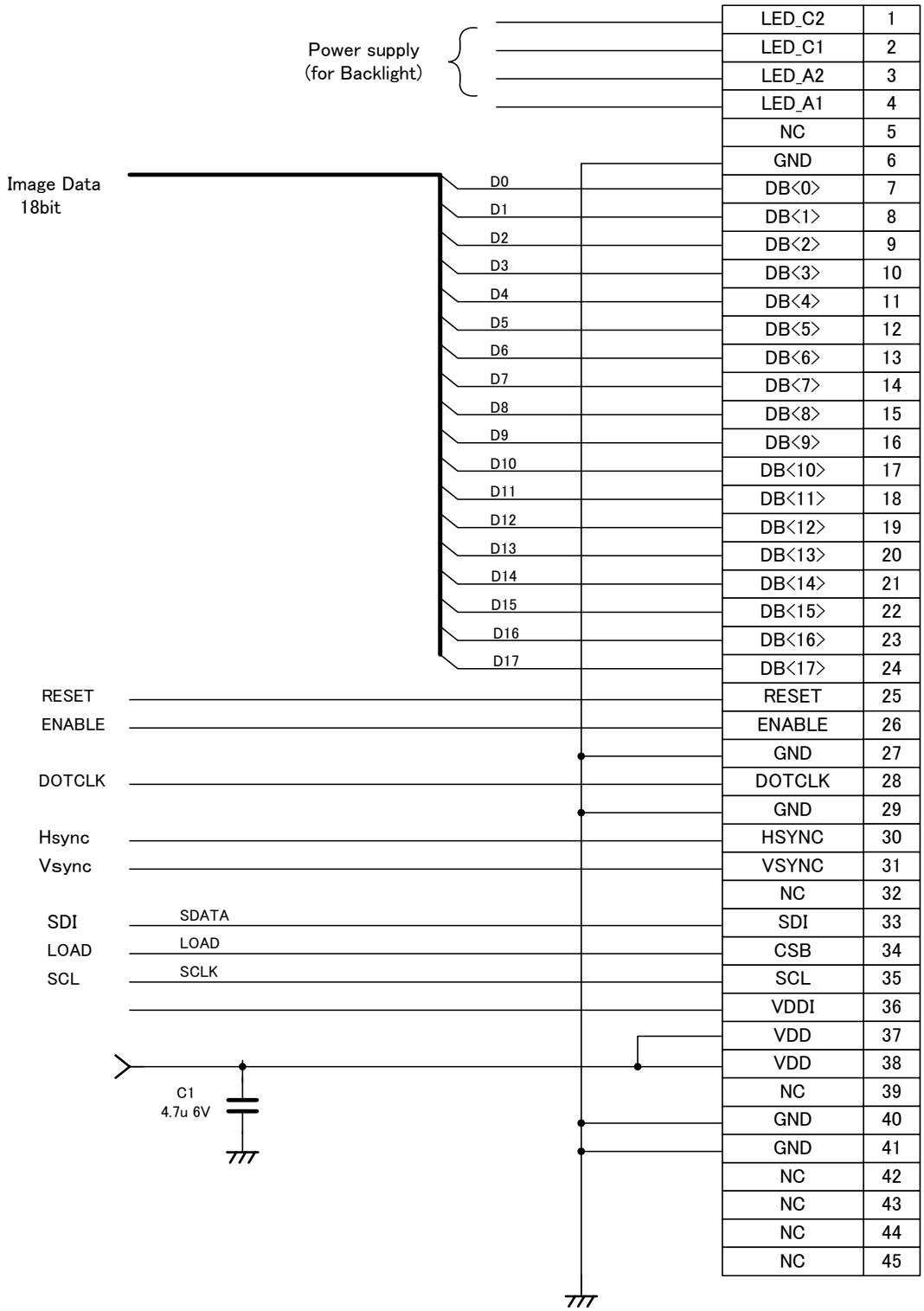
Applicable connector

FXR Series (JST)

45pin /0.3mm terminal pitch

PIN No.	SYMBOL	FUNCTION
1	LED_C2	Power supply for LED2 -
2	LED_C1	Power supply for LED1 -
3	LED_A2	Power supply for LED2 +
4	LED_A1	Power supply for LED1 +
5	NC	Not Connected
6	GND	Ground
7	DB<0>	Display Data(Blue)
8	DB<1>	Display Data(Blue)
9	DB<2>	Display Data(Blue)
10	DB<3>	Display Data(Blue)
11	DB<4>	Display Data(Blue)
12	DB<5>	Display Data(Blue)
13	DB<6>	Display Data(Green)
14	DB<7>	Display Data(Green)
15	DB<8>	Display Data(Green)
16	DB<9>	Display Data(Green)
17	DB<10>	Display Data(Green)
18	DB<11>	Display Data(Green)
19	DB<12>	Display Data(Red)
20	DB<13>	Display Data(Red)
21	DB<14>	Display Data(Red)
22	DB<15>	Display Data(Red)
23	DB<16>	Display Data(Red)
24	DB<17>	Display Data(Red)
25	XRES	Reset
26	ENABLE	Data Enable siganal
27	GND	Ground
28	PCLK	Pixcel clock siganal
29	GND	Ground
30	HSYNC	Horizen Sync signal
31	VSYNC	Vertical Sync signal
32	NC	Not Connected
33	SDI	Sereal Data Input
34	XCS	Chip Select signal
35	SCL	Sereal clock input
36	VDDI	Power supply for I/O
37	VDD	(Power supply for analog)
38	VDD	(Power supply for analog)
39	NC	Not Connected
40	GND	Ground
41	GND	Ground
42	NC	Not Connected
43	NC	Not Connected
44	NC	Not Connected
45	NC	Not Connected

<Application circuit example>

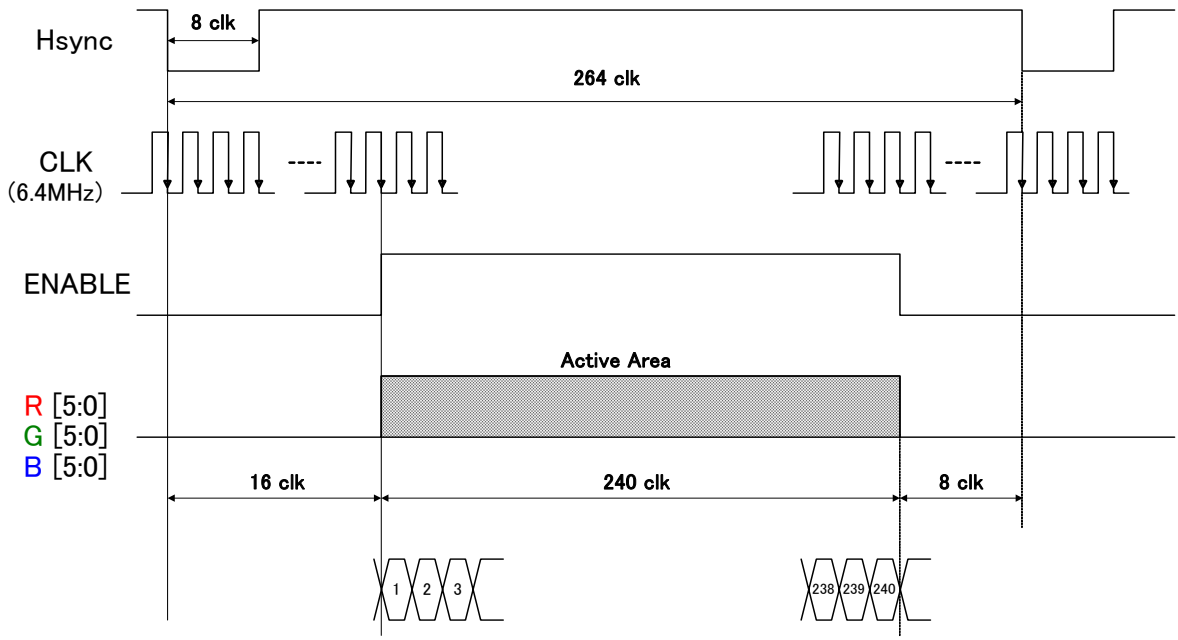


*1 It is necessary to connect the metal frame of this module to GND.
*2 We recommend the external capacitor of the temperature compensation.

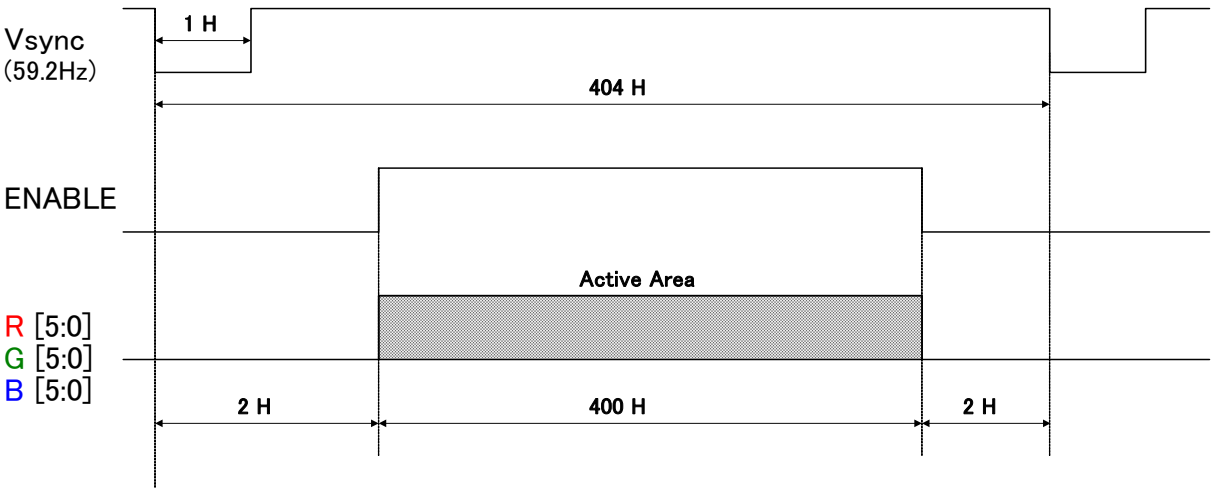
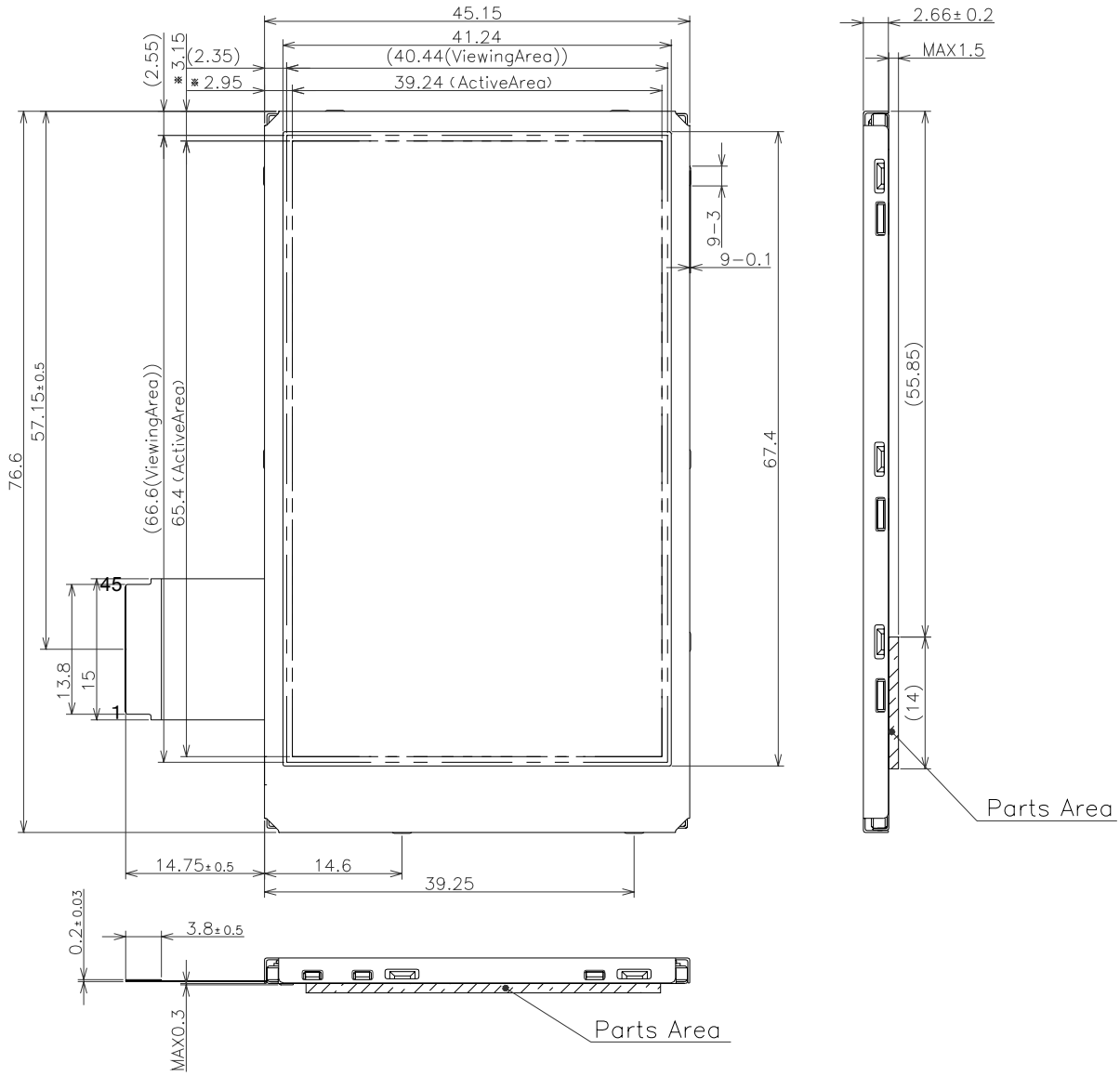
<Timing chart>

(18bit RGB)

・Horizontal timing



・Vertical timing



<Module Outline>