

LCM Specification

客户型号

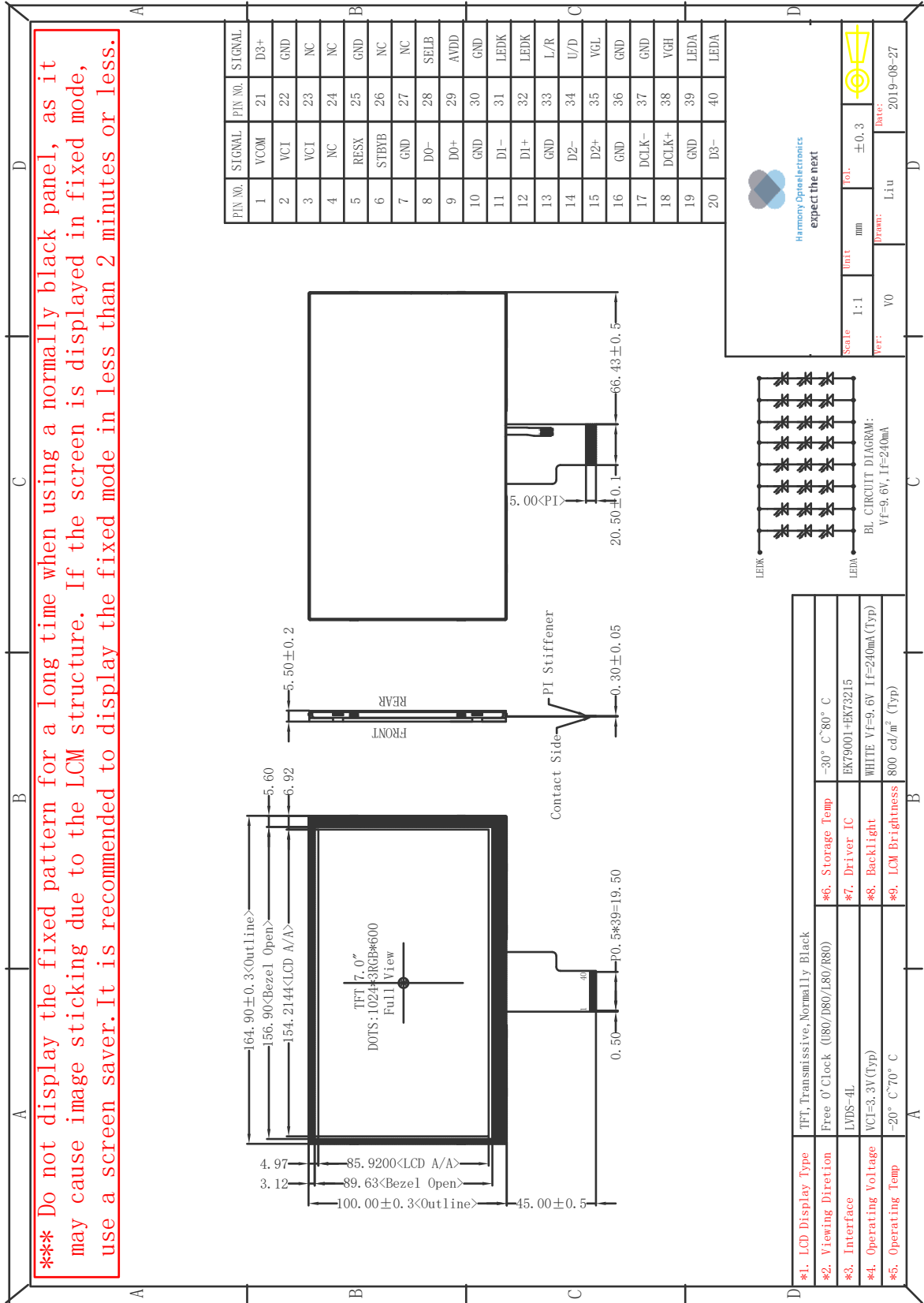
Product type
产品内容

TFT LCD Module
1024x 3RGB x 600Dots
7.0”TFT LCD

1. General Feature:

Item	Standard Value	Unit
Display Size	7.0"	--
Number of Pixels	1024(H)x3(RGB)*600(V)	--
Active Area	154.2144(H) *85.92(V)	mm
Outline Dimension	164.90(H) ×100.00× 5.50(V)	mm
Viewing Direction	FULL O'Clock	-
Interface	LVDS	-
Panel Driver IC	EK79001+EK73215	-
Panel Driver Condition	VDD=3.3V	V
Backlight	White LED	-
Touch Panel	Whitout Touch Panel	-
Cap Touch Driver IC	---	-
Cap Touch Driver Condition	---	V
Operation Temperature	-20~70	°C
Storage Temperature	-30~80	°C

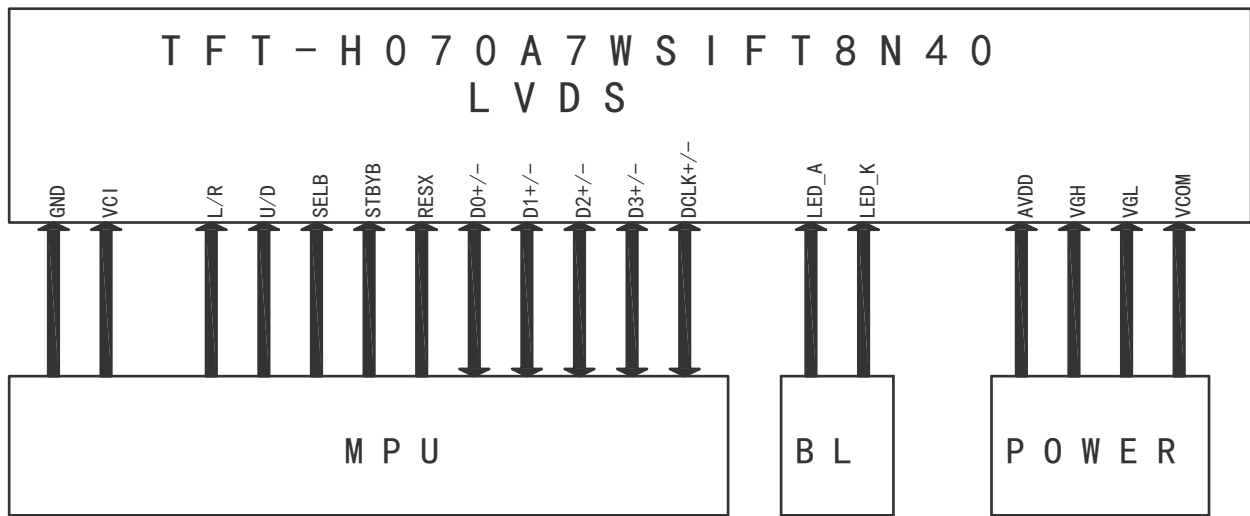
2.Outline Dimensions



3. Pin Description

<u>3.1</u>	Symbol	Description
1	VCOM	TFT Common voltage
2-3	VCI	Analog Power(2.5 ~ 3.6 V)
4	NC	Not connect
5	RESX	Global reset pin.
6	STBYB	Standby mode , Normally pulled high.
7	GND	Ground
8	D0-	Negative LVDS differential data inputs
9	D0+	Positive LVDS differential data inputs
10	GND	Ground
11	D1-	Negative LVDS differential data inputs
12	D1+	Positive LVDS differential data inputs
13	GND	Ground
14	D2-	Negative LVDS differential data inputs
15	D2+	Positive LVDS differential data inputs
16	GND	Ground
17	DCLK-	Negative LVDS differential clock inputs
18	DCLK+	Positive LVDS differential clock inputs
19	GND	Ground
20	D3-	Negative LVDS differential data inputs
21	D3+	Positive LVDS differential data inputs
22	GND	Ground
23-24	NC	Not connect
25	GND	Ground
26-27	NC	Not connect
28	SELB	6bit/8bit mode select H:6bit/L:8bit
29	AVDD	Power for Analog Circuit
30	GND	Ground
31-32	LED_K	LED Cathode
33	L/R	Source Right or Left sequence control. Normally pull high.
34	U/D	Gate Up or Down scan control. Normally pull low.
35	VGL	TFT Gate OFF Voltage
36-37	GND	Ground
38	VGH	TFT Gate ON Voltage
39-40	LED_A	LED Anode(+9.6V/240mA)
-END-		

3.2 Wiring Diagram



4. OPTICAL SPECIFICATION

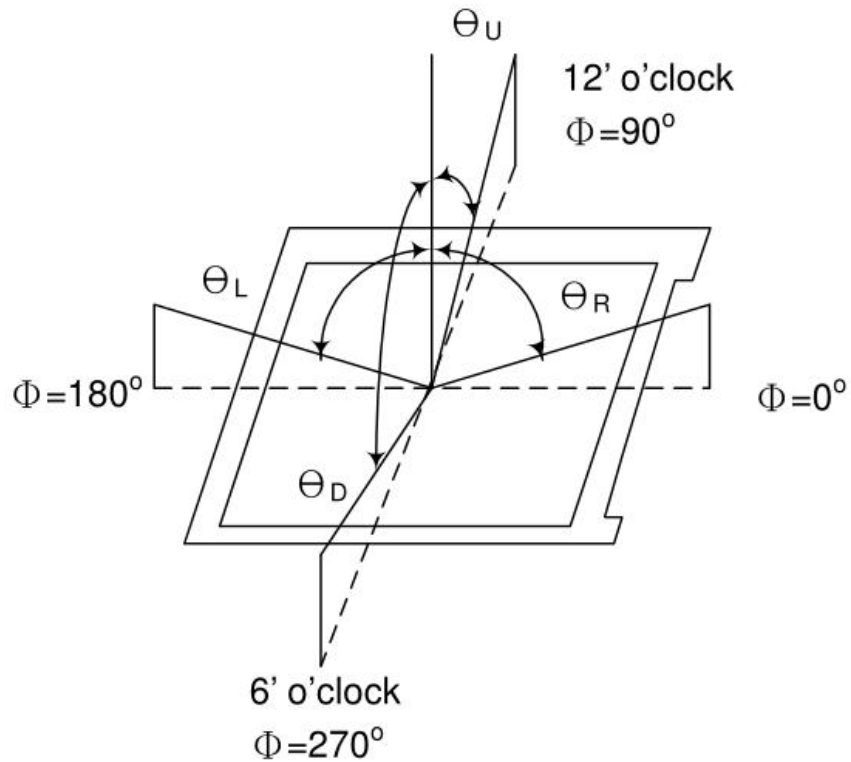
4.1 Overview

The test of Optical specifications shall be measured in a dark room (ambient luminance 1 lux and temperature = 25 ± 2°C) with the equipment of Luminance meter system (Goniometer system and TOPCON BM-5) and test unit shall be located at an approximate distance 50cm from the LCD surface at a viewing angle of θ and Φ equal to 0°. The center of the measuring spot on the Display surface shall stay fixed. The backlight should be operating for 30 minutes prior to measurement.

4.2 Optical Specifications

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing Angle Range	Horizontal	Θ L	CR>10	80	85	-	Deg.	Note (1)
		Θ R		80	85	-	Deg.	
	Vertical	Θ U		80	85	-	Deg.	
		Θ D		80	85	-	Deg.	
Contrast ratio		CR	$\Theta = 0^\circ$	600	800	-		Note (1) (2)
Color Gamut		CG		-	50	-	%	(C-light)
White Chromaticity		Wx	$\Theta = 0^\circ$	-	0.319	-		Note (1) (Based on C Light)
		Wy		-	0.341	-		
Reproduction of color	Red	Rx		-	0.614	-		
		Ry		-	0.326	-		
	Green	Gx		-	0.335	-		
		Gy		-	0.536	-		
	Blue	Bx		-	0.137	-		
		By		-	0.145	-		
Response Time (Rising + Falling)		Tr+ Tf	$\Theta = 0^\circ$ Ta= 25°C	-	25	-	ms	(1)(3)
Transmittance		Tr		-	3.9	-	%	

Note (1) Definition of Viewing Angle:

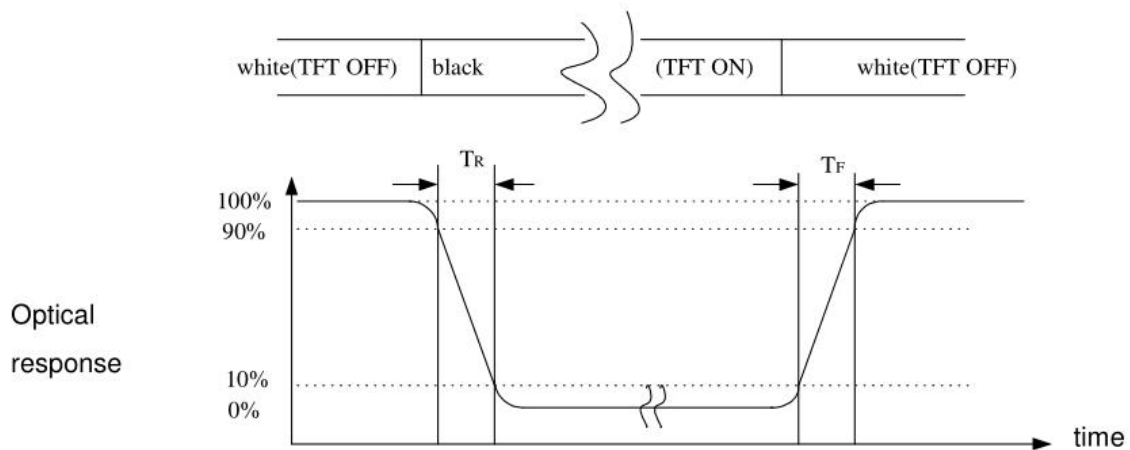


Note (2) Definition of Contrast Ratio(CR) :

measured at the center point of panel

$$CR = \frac{\text{Luminance with all pixels white}}{\text{Luminance with all pixels black}}$$

Note (3) Definition of Response Time : Sum of T R and T F



5. Electrical Characteristics

5-1 TFT LCD Module Operating Conditions

Item	Symbol	Condition	Min	Type	Max	Unit
Analog Power supply	VCI	-	2.70	3.3	3.6	V
Analog Power	AVDD	-	8.9	9.0	9.1	V
TFT Gate on voltage	VGH	-	17	18	19	V
TFT Gate off voltage	VGL	-	-6.5	-6.0	-5.5	V
TFT Common Voltage	VCOM	-	3.0	3.15	3.3	V

Note:

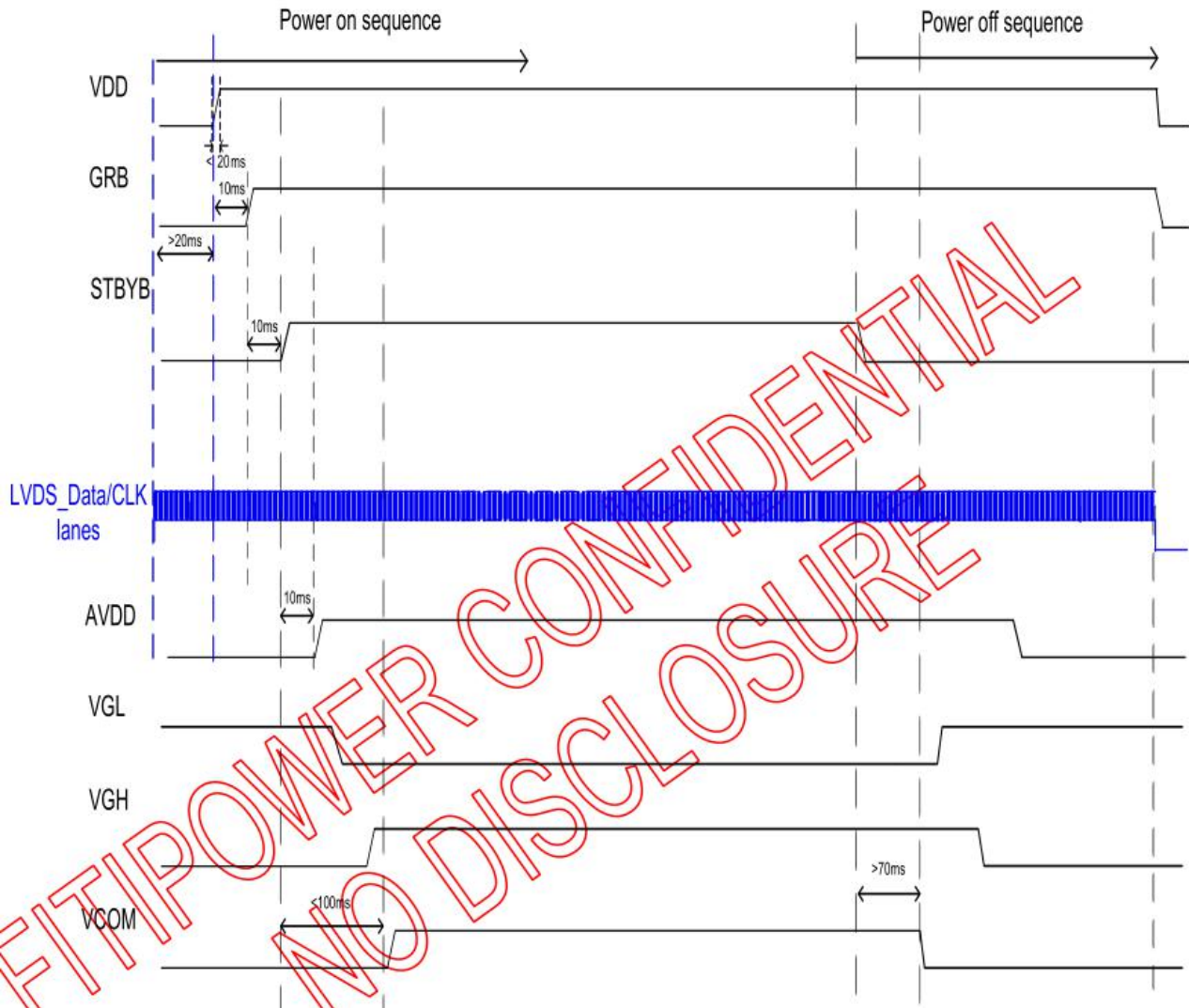
***1. The above drive voltage values are provided by LCD SPEC**

5-2 LED back light specification

Item	Symbol	Condition	Min	Type	Max	Unit
Forward voltage	Vt	If=20mA	-	9.6	-	V
Forward current	Ipn	/1-chip	-	240	-	mA
Luminance(With LCD)	Lv	If=240mA	-	800	-	cd/m ²
Luminous color	White					

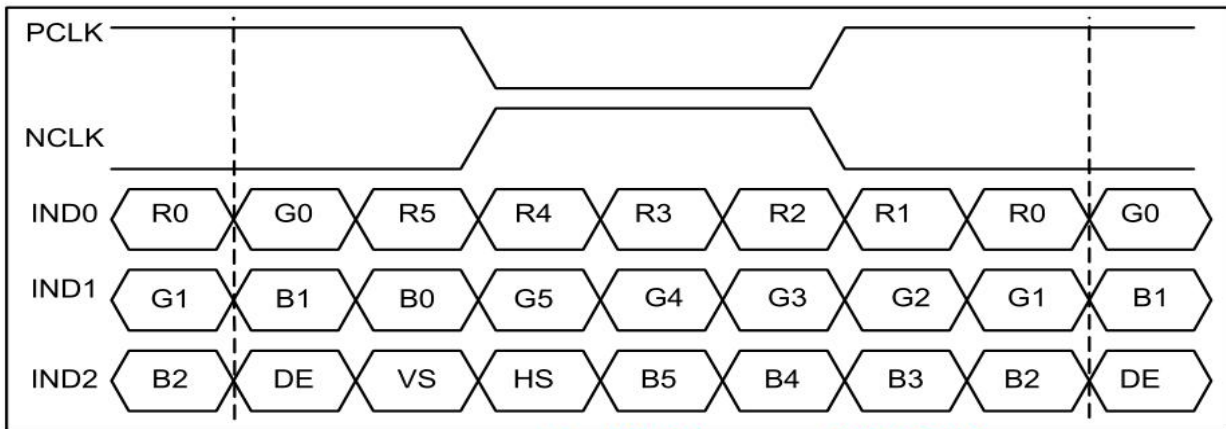
6. Timing Characteristics of Input Signals

6-1 Power-On/Off Timing Sequence for LVDS Interface

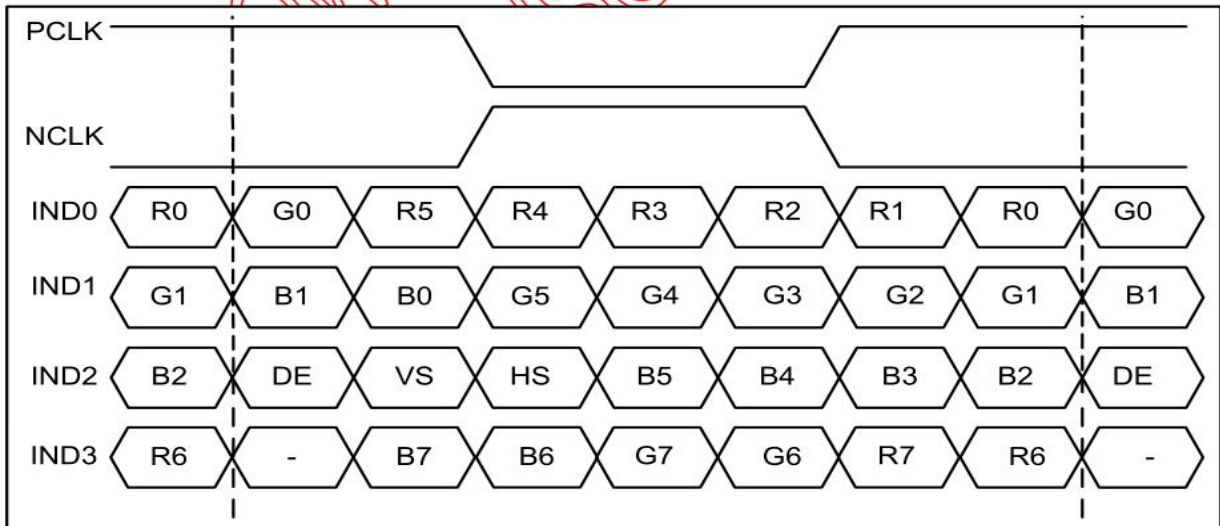


6-2 Data Input Format for LVDS

6-2-1 6-bit LVDS input (SETB=" H")



6-2-2 8-bit LVDS input (SETB=" L")



6-2-3 Horizontal input timing

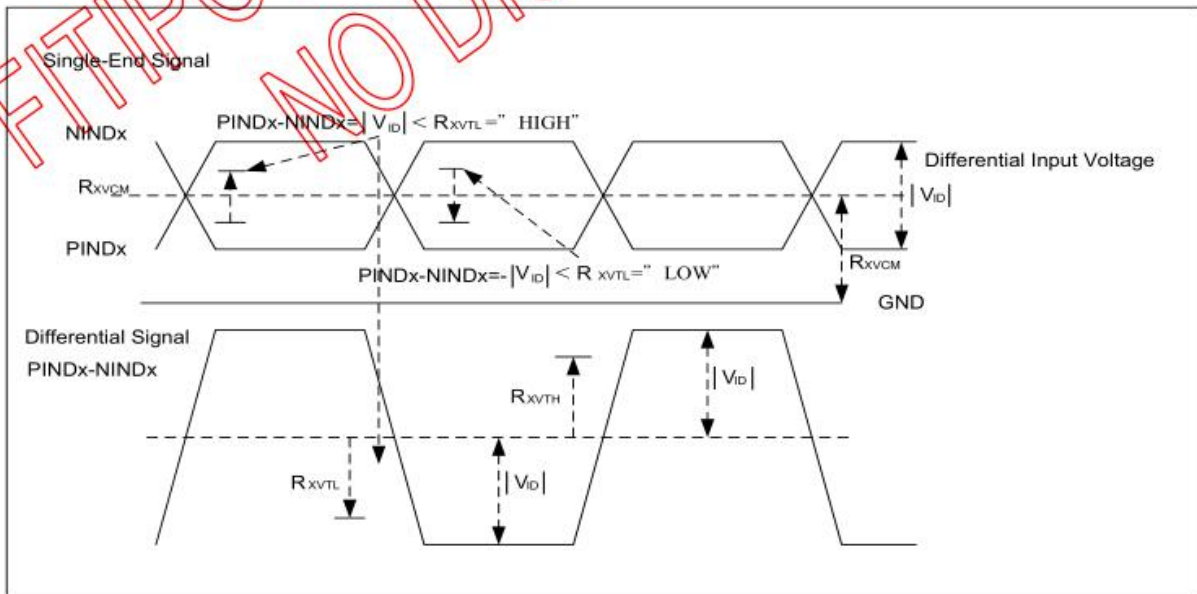
DE mode

DE mode

Parameter	Symbol	Value			Unit
		Min.	Typ.	Max.	
DCLK frequency @Frame rate=60hz	fclk	40.8	51.2	67.2	Mhz
Horizontal display area	thd	1024			DCLK
HSYNC period time	th	1114	1344	1400	DCLK
HSYNC blanking	thb+thfp	90	320	376	DCLK
Vertical display area	tvd	600			H
VSYNC period time	tv	610	635	800	H
VSYNC blanking	tvb+tvfp	10	35	200	H

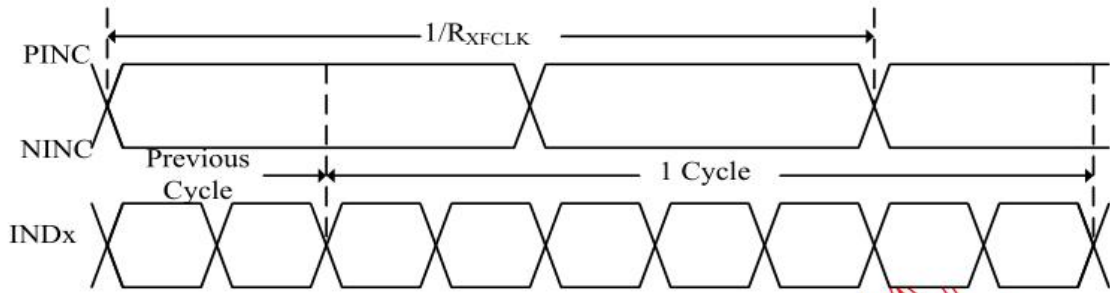
6-3 DC Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Differential input high threshold voltage	R_{xVTH}			+0.1V	V	$R_{xVCM}=1.2V$
Differential input low threshold voltage	R_{xVTL}	-0.1			V	
Input voltage range(single-end)	R_{xVIN}	0		2.4	V	
Differential input common mode voltage	R_{xVCM}	$ V_{ID} /2$		$2.4 - V_{ID} /2$	V	
Differential input voltage	$ V_{ID} $	0.2		0.6	V	
Differential input leakage current	R_{xVTH}	-10		+10	μA	
LVDS Digital Operating Current	I_{ddlvsd}	-	40(TBD)	50	mA	Fclk=65Mhz, VDD=3.3V
LVDS Digital Standby Current	I_{stlvsd}	-	10(TBD)	50	μA	Clock & all functions are stop

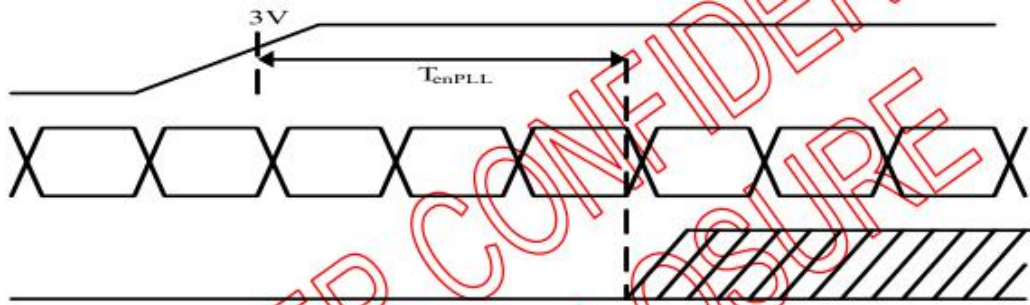


6-3 AC Electrical Characteristics

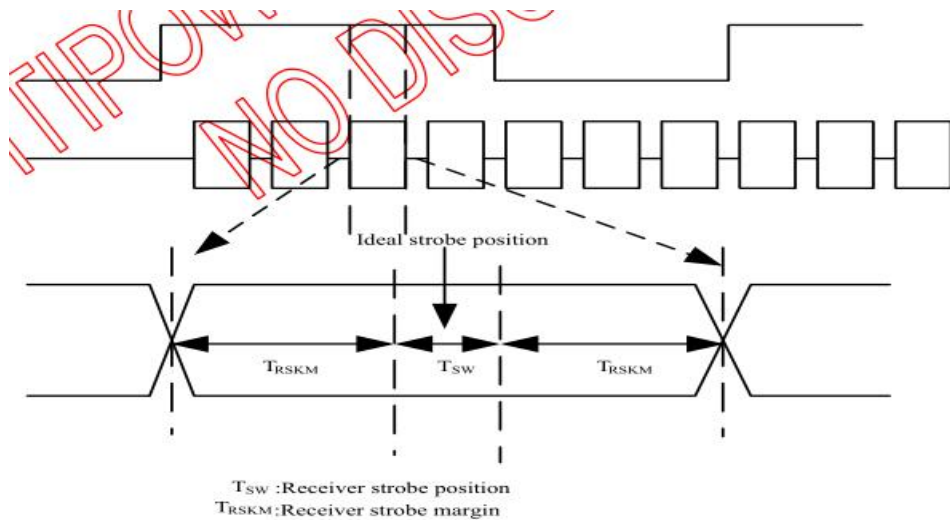
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Clock Frequency	R _x FCLK		20	-	71	MHz
Input data skew margin	T _{RSKM}	V _{ID} =400mV R _x VCM=1.2V R _x FCLK=71MHz	500			ps
Clock High Time	T _{LVCH}			4/(7* R _x FCLK)		ns
						ns
Clock Low Time	T _{LVCL}			3/(7* R _x FCLK)		ns
PLL wake-up-time	T _{enPLL}				150	us



LVDS timing(1)



LVDS timing(2)



LVDS timing(3)