



**SPECIFICATION
FOR
LCM Module
KD035QVFMA064-04-TP**

MODULE:	KD035QVFMA064-04-TP
CUSTOMER:	

REV	DESCRIPTION	DATE
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STARTEK	INITIAL	DATE
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APPROVED BY		

CUSTOMER	INITIAL	DATE
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Distributed by:



Part. No

KD035QVFMA064-04-TP

REV

V1.0

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常备库存
Standing Stock长期供货
Long Time supply支持小量
NO MOQ品种齐全
In Full Range

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*** Description**

This is a color active matrix TFT (Thin Film Transistor) LCD (liquid crystal display) that uses amorphous silicon TFT as a switching device. This model is composed of a Transmissive type TFT-LCD Panel, driver circuit, back-light unit. The resolution of a 3.5'TFT-LCD contains 240x320 pixels, and can display up to 65K/262K colors.

*** Features**

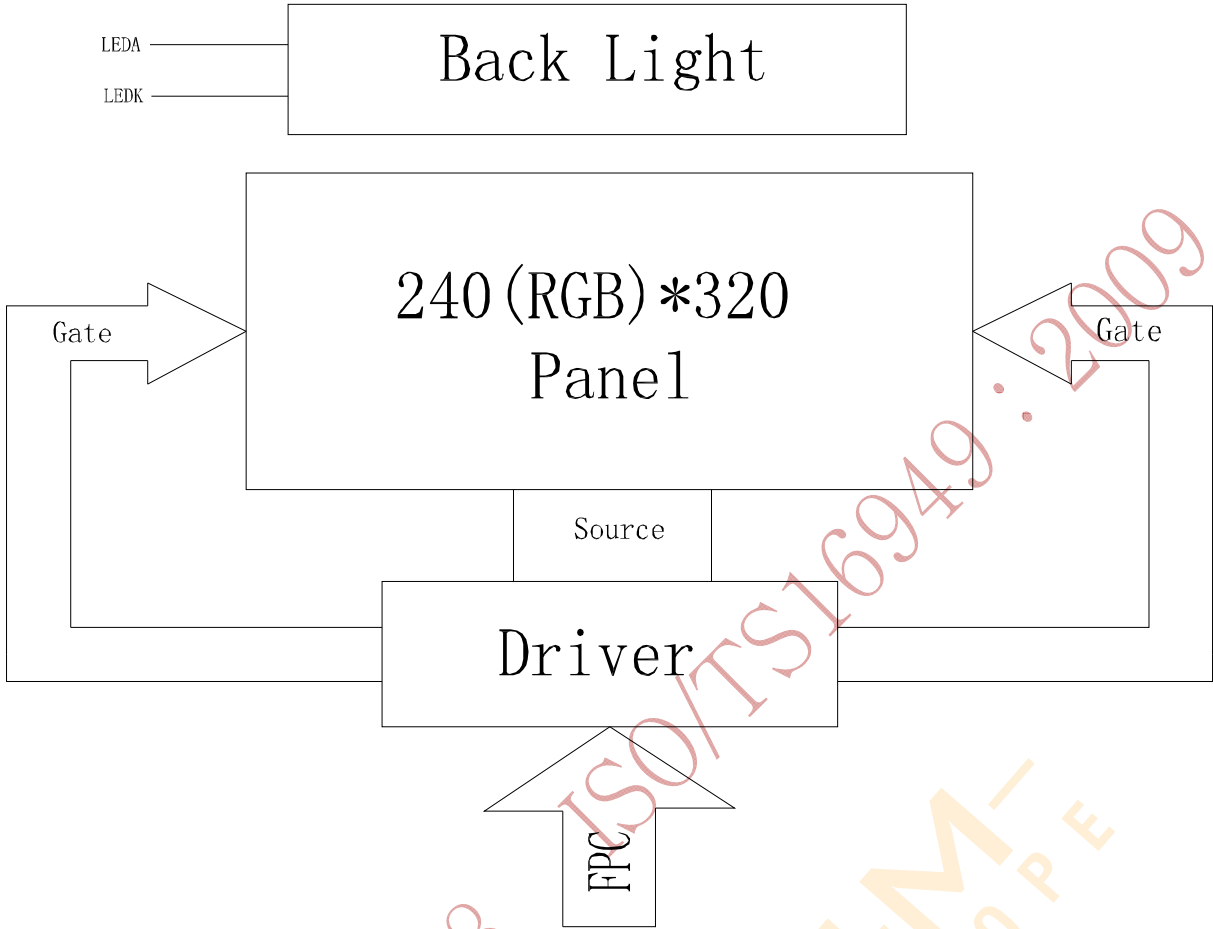
- Low Input Voltage: 3.3V(TYP)
- Display Colors of TFT LCD: 65K/262K colors
- Interface: 8/16/18Bit MCU Interface
 - 3 SPI+16/18Bit RGB Interface
 - 3 line Serial Interface

General Information Items	Specification	Unit	Note
	Main Panel		
Display area(AA)	53.28(H)*71.04 (V) (3.5inch)	mm	-
Driver element	TFT active matrix	-	-
Display colors	65K/262K	colors	-
Number of pixels	240(RGB)*320	dots	-
Pixel arrangement	RGB vertical stripe	-	-
Pixel pitch	0.222(H)*0.222(V)	mm	-
Viewing angle	Free	o'clock	-
Controller IC	HX8347A	-	-
Display mode	Transmissive/ Normally Black	-	-
LCD Operating temperature	-30~+85	°C	-
LCD Storage temperature	-40~+90	°C	-

*** Mechanical Information**

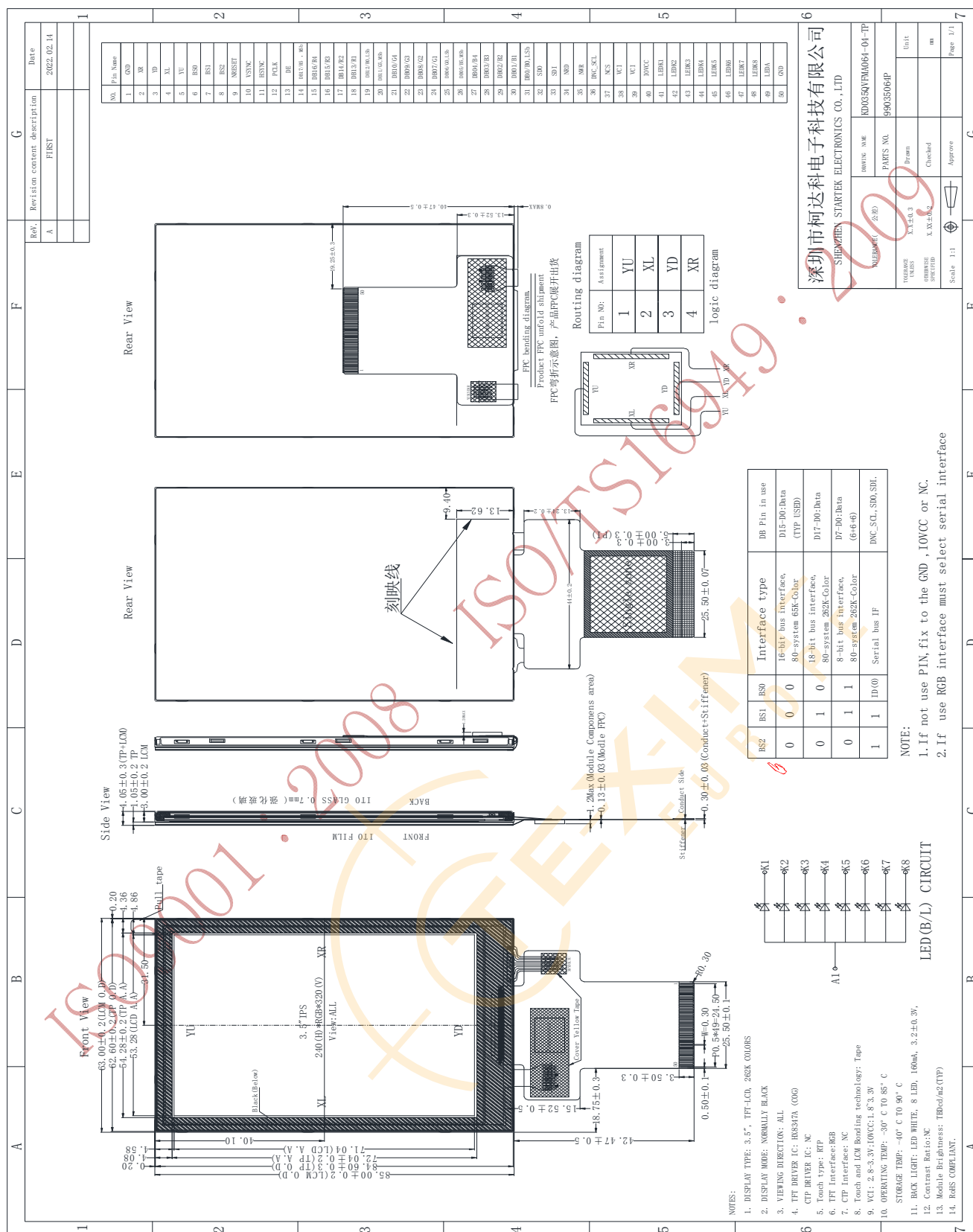
Item		Min.	Typ.	Max.	Unit	Note
Module size	Horizontal(H)		63.0		mm	-
	Vertical(V)		85.0		mm	-
	Depth(D)		4.05		mm	-
Weight			TBD		g	-

1. Block Diagram



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2. Outline dimension



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常 备 库 存
Standing Stock

长期供货	Long Time supply
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支持小量
NO MOQ

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3. Input terminal Pin Assignment

NO.	SYMBOL	DISCRIPTION	I/O
1	GND	Ground.	P
2	XR	Touch panel Right Glass Terminal	A/D
3	YD	Touch panel Bottom Film Terminal	A/D
4	XL	Touch panel LEFT Glass Terminal	A/D
5	YU	Touch panel Top Film Terminal,	A/D
6	BS0	MPU Parallel interface bus and serial interface select If use RGB Interface must select serial interface. Fix this pin at VCI and GND.	I
7	BS1		I
8	BS2		I
9	NRESET	This signal will reset the device and must be applied to properly initialize the chip.	I
10	VSYN	Frame synchronizing signal for RGB interface operation. fix this pin at VCI or GND when not in use.	I
11	HSYN	Line synchronizing signal for RGB interface operation. fix this pin at VCI or GND when not in use	I
12	PCLK	Dot clock signal for RGB interface operation Fix this pin at VCI or GND when not in use.	I
13	DE	Data enable signal for RGB interface operation. fix this pin at VCI or GND when not in use.	I
14-31	DB17-DB0	18-bit parallel bi-directional data bus for MCU system and RGB interface mode . Fix to GND level when not in use	I
32	SDO	Serial data output pin in serial bus system interface. If not used, please open this pin.	O
33	SDI	Serial input signal.The data is applied on the rising edge of the SCL signal. If not used, fix this pin at VCI or GND.	I
34	NRD	Serves as a read signal and MCU read data at the rising edge. fix this pin at VCI or GND when not in use.	I
35	NWR	NWR pin, serves as a write signal	I
36	DNC_SCL	DNC_SCL pin as Serial Clock when operates in the serial interface	I
37	NCS	Chip select input pin ("Low" enable).	I



		fix this pin at VCI or GND when not in use.	
38	VCI	Supply voltage(3.3V).	P
39	VCI	Supply voltage(3.3V).	P
40	IOVCC	Supply voltage(1.8-3.3V)	P
41	LEDK1	Cathode pin OF backlight	P
42	LEDK2	Cathode pin OF backlight	P
43	LEDK3	Cathode pin OF backlight	P
44	LEDK4	Cathode pin OF backlight	P
45	LEDK5	Cathode pin OF backlight	P
46	LEDK6	Cathode pin OF backlight	P
47	LEDK7	Cathode pin OF backlight	P
48	LEDK8	Cathode pin OF backlight	P
49	LEDA	Anode pin of backlight	P
50	GND	Ground.	P



4. LCD Optical Characteristics

4.1 Optical specification

Item		Symbol	Condition	Min.	Typ.	Max.	Unit.	No te
Contrast Ratio		CR	$\Theta=0$ Normal viewing angle	500	800	--	m sec	
Response time	Risi ng	T _R		--	16	21		
	Falli ng	T _F		--	19	24		
Color gamut		S(%)		--	72	--	%	
Color Filter Chromatici ty	Wh ite	W _X		0.336	0.340	0.344		
		W _Y		0.356	0.360	0.364		
	Re d	R _X		0.618	0.620	0.622		
		R _Y		0.338	0.340	0.342		
	Gr een	G _X		0.348	0.350	0.352		
		G _Y		0.620	0.622	0.624		
	Blu e	B _X		0.148	0.150	0.152		
		B _Y		0.033	0.035	0.037		
Viewing angle	Ho r.	Θ_L	CR>10	--	80	--		
		Θ_R		--	80	--		
	Ve r.	Θ_U		--	80	--		
		Θ_D		--	80	--		
Option View Direction		Free						

4.2 Measuring Condition

- Measuring surrounding: dark room
- Ambient temperature: $25\pm 2^\circ\text{C}$
- 15min. warm-up time.

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				品种齐全 In Full Range

4.3 Measuring Equipment

Note 1: Ambient temperature = 25°C.

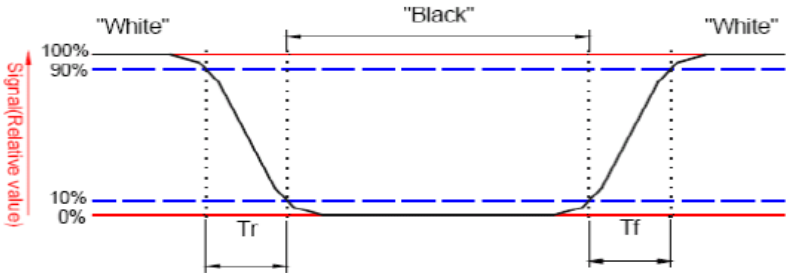
Note 2: To be measured with a viewing cone of 2° by Topcon luminance meter BM-5A.

Note 3: To be measured with Otsuta chromaticity meter LCF-2100M, CF only measure under C light simulation.

Note 4: CTC shipping status is cell without polarizer. Transmittance of Specification is cell with polarizer.
The tolerance of Transmittance is $\pm 10\%$.

Note 5: Definition of response time:

The output signals of TRD-100 are measured when the input signals are changed to "White" (falling time) and from "White" to "Black" (rising time), respectively. The interval is between the 10% and 90% of amplitudes. Refer to figure as below.

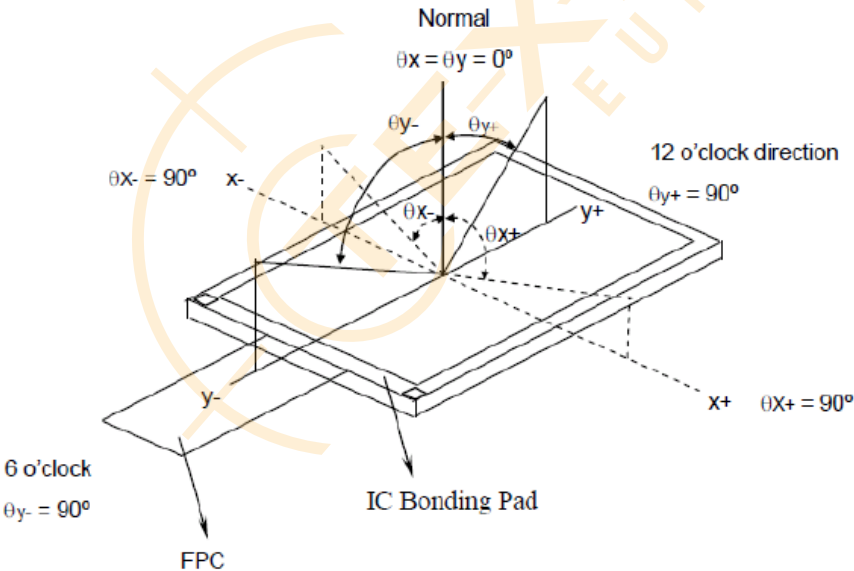


Note 6: Definition of contrast ratio:

Contrast ratio is calculated by the following formula.

$$\text{Contrast ratio (CR)} = \frac{\text{Brightness on the "white" state}}{\text{Brightness on the "black" state}}$$

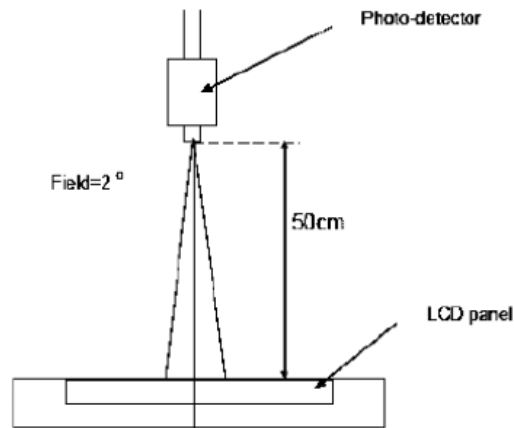
Note 7: Definition of viewing angle



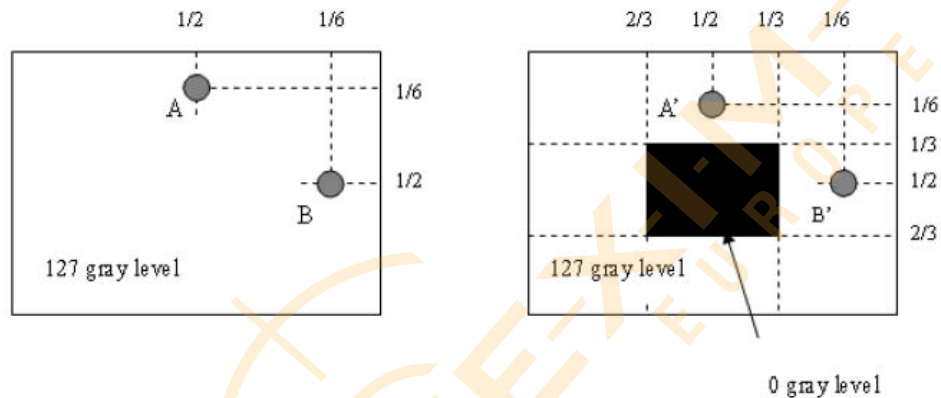
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Note 8: Optical characteristic measurement setup.



Note 9:



$|LA - LA'| / LA \times 100\% = 2\% \text{ max.}$, LA and LA' are brightness at location A and A'.

$|LB - LB'| / LB \times 100\% = 2\% \text{ max.}$, LB and LB' are brightness at location B and B'.



5. TFT Electrical Characteristics

5.1 Absolute Maximum Rating (Ta=25 VSS=0V)

Characteristics	Symbol	Min.	Max.	Unit
Digital Supply Voltage	V _{CI}	-0.3	4.2	V
Digital interface supply Voltage	IOVCC	-0.3	4.2	V
Operating temperature	T _{OP}	-30	+85	°C
Storage temperature	T _{ST}	-40	+90	°C

NOTE:

If the absolute maximum rating of even is one of the above parameters is exceeded even momentarily, the quality of the product may be degraded. Absolute maximum ratings, therefore, specify the values exceeding which the product may be physically damaged. Be sure to use the product within the range of the absolute maximum ratings.

5.2 DC Electrical Characteristics

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Note
Digital Supply Voltage	V _{CI}	2.5	3.3	3.6	V	
Digital interface supply Voltage	IOVCC	1.65	1.8	3.3	V	
Normal mode Current consumption	I _{DD}	--	9	--	mA	
Level input voltage	V _{IH}	0.7IOVCC		IOVCC	V	
	V _{IL}	GND		0.3IOVCC	V	
Level output voltage	V _{OH}	0.8IOVCC		IOVCC	V	
	V _{OL}	GND		0.2IOVCC	V	



5.3 LED Backlight Characteristics

The back-light system is edge-lighting type with 8 chips White LED

Item	Symbol	Min.	Typ.	Max.	Unit	Note
Forward Current	I_F	120	160	--	mA	
Forward Voltage	V_F	--	3.2	--	V	
LCM Luminance	L_v	310	360	--	cd/m ²	Note3
LED life time	Hr	50000	--	--	Hour	Note1,2
Uniformity	AVg	80	--	--	%	Note3

LED life time (Hr) can be defined as the time in which it continues to operate under the condition:

$T_a = 25 \pm 3^\circ \text{C}$, typical IL value indicated in the above table until the brightness becomes less than 50%.

Note (2) The "LED life time" is defined as the module brightness decrease to 50% original brightness at $T_a = 25^\circ \text{C}$ and $I_L = 160 \text{mA}$. The LED lifetime could be decreased if operating I_L is larger than 160mA. The constant current driving method is suggested.

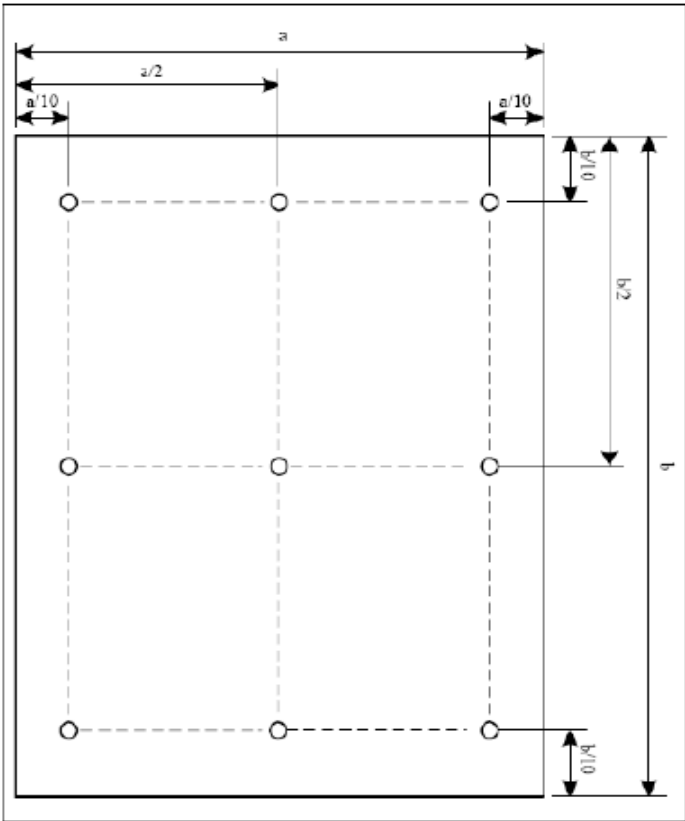


LED(B/L) CIRCUIT

LED WHITE, 8 LED, 160mA, $3.2 \text{V} \pm 0.3 \text{V}$



NOTE 3: Luminance Uniformity of these 9 points is defined as below:



$$\text{Uniformity} = \frac{\text{minimum luminance in 9 points (1-9)}}{\text{maximum luminance in 9 points (1-9)}}$$

$$\text{Luminance} = \frac{\text{Total Luminance of 9 points}}{9}$$



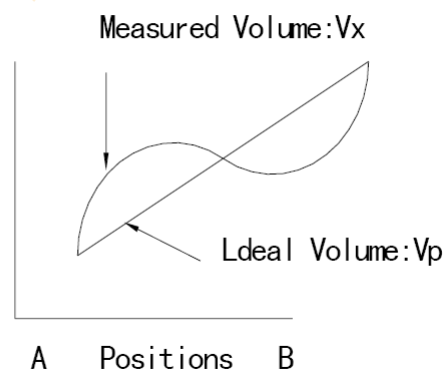
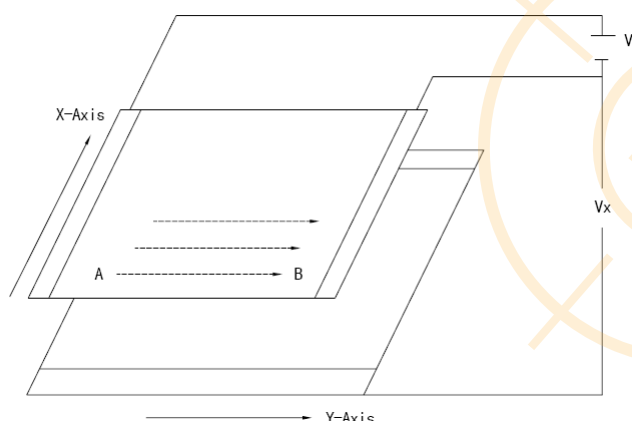
6. TP Feature

6.1 Conditions of use and storage

Item	Value(condition)	Note
Temperature range upon operation	Humidity: 20%~90% non dew, condensation -40℃~85℃	In a simple substance
Temperature range upon storage	Humidity: 20%~90% non dew, condensation -40℃~90℃	In a simple substance

6.2 Electrical property

Item	Value	Note
Maximum voltage	DC5V	
Resistance between terminals	X direction[Film side]:200-600Ω	
	Y direction [Glass side]:300-900Ω	
Insulation resistance	DC 25V 20MΩor above	Connect X + ~X- and Y+ ~Y-, apply 25VDC Between X and Y for perform measurements
Chattering	10 msec or below	
Rating	Voltage is DC 5V	





6.3 Mechanical property

Item	Performance		Note
Input method	Used of an exclusive pen or finger		
Load upon operation	Exclusive pen	60-100g or below	Operation and measurement with a pen must be carried out under the following tip condition s: Stylus pen material : POM(ployacetal) . Tip : Diameter 3.0mm, SR 0.8 mm
	Finger	60-100g or below	Operations and measurement methods simulate d for a finger must be carried out under the fo llowing tip conditions. Material :Silicon rubber (Hardness : 30°Hs) Tip : Diameter 12.0 mm, SR 12.5mm
Surface hardness	Pencil hardness : 3H or above		It complies with the way of test method JIS K5400.

6.4 Optical property

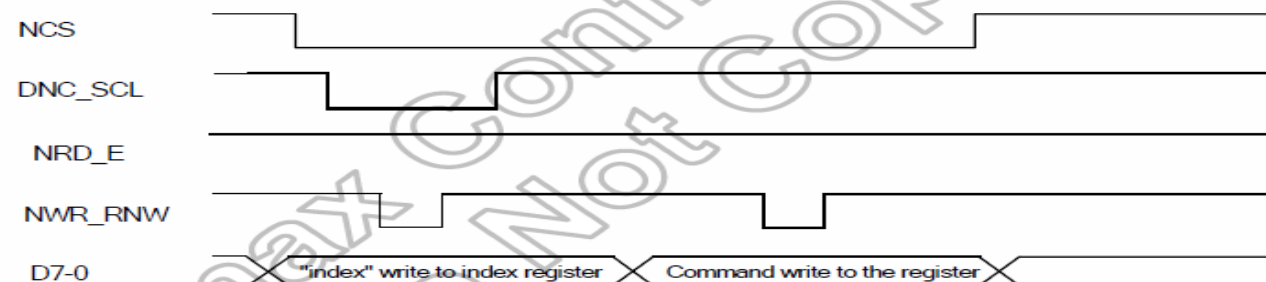
Item	Performance	Note
Total light transmittance	80% or above	JIS K7105
Haze	5% or below	JIS K7136
Film specification	Polished type with hard coated surface	



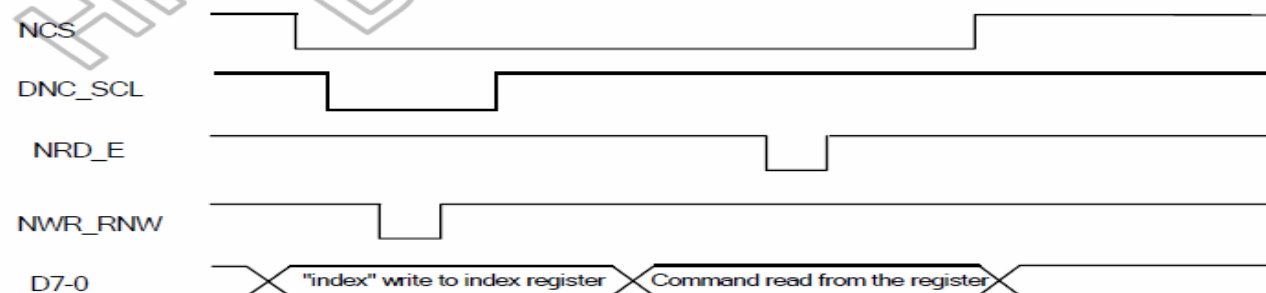
7. AC Characteristic

7.1 Display Parallel Interface Timing Characteristics (8080 system)

Write to the register



Read the register



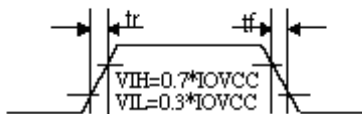
Signal	Symbol	Parameter	Min.	Max.	Unit	Description
DNC_SCL	tAST tAHT	Address setup time Address hold time (Write/Read)	10 10	- -	ns	-
NCS	tCHW tCS tRCFSM tCSF tCSH	Chip select "H" pulse width Chip select setup time (Write) Chip select setup time Chip select wait time (Write/Read) Chip select hold time	0 35 180 10 10	- - - - -	ns	-
NWR_RNW	tWC tWRH tWRL	Write cycle Control pulse "H" duration Control pulse "L" duration	100 15 20	- - -	ns	-
NRD_E	tRCFM tRDHFM tRDLFM	Read cycle Control pulse "H" duration Control pulse "L" duration	250 15 180	- - -	ns	When read from GRAM
D17 to D0	tDST tDHT tRAT tRATFM tODH	Data setup time Data hold time Read access time (ID) Read access time (FM) Output disable time	10 10 - - 20	- - 180 340 80	ns	For maximum $C_L=30pF$ For minimum $C_L=8pF$

Note: The input signal rise time and fall time (t_r , t_f) is specified at 15 ns or less.

Logic high and low levels are specified as 30% and 70% of IOVCC for Input signals.



Input Signal Slope



Output Signal Slope

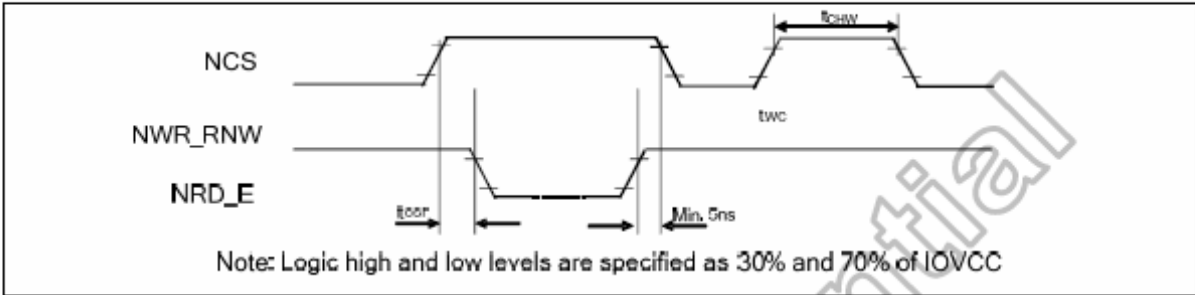
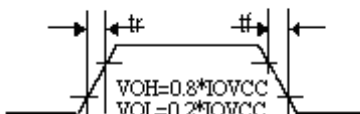
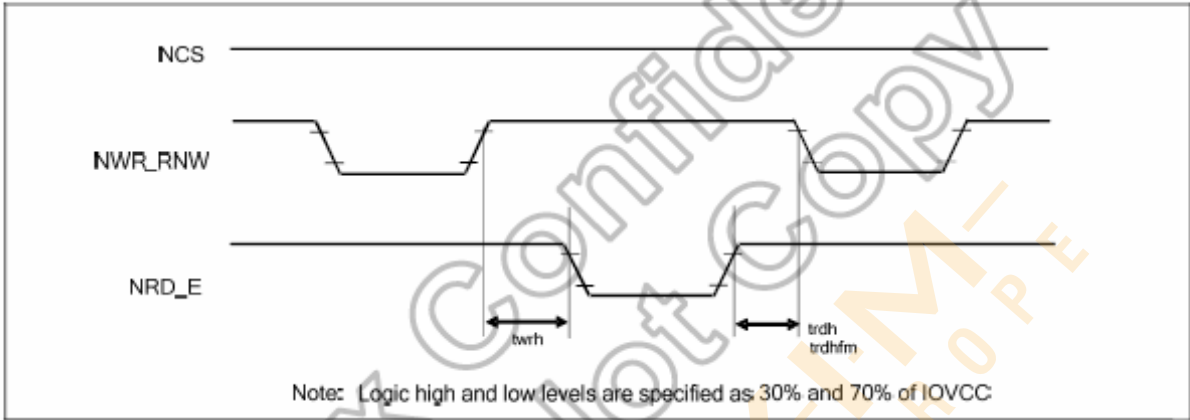
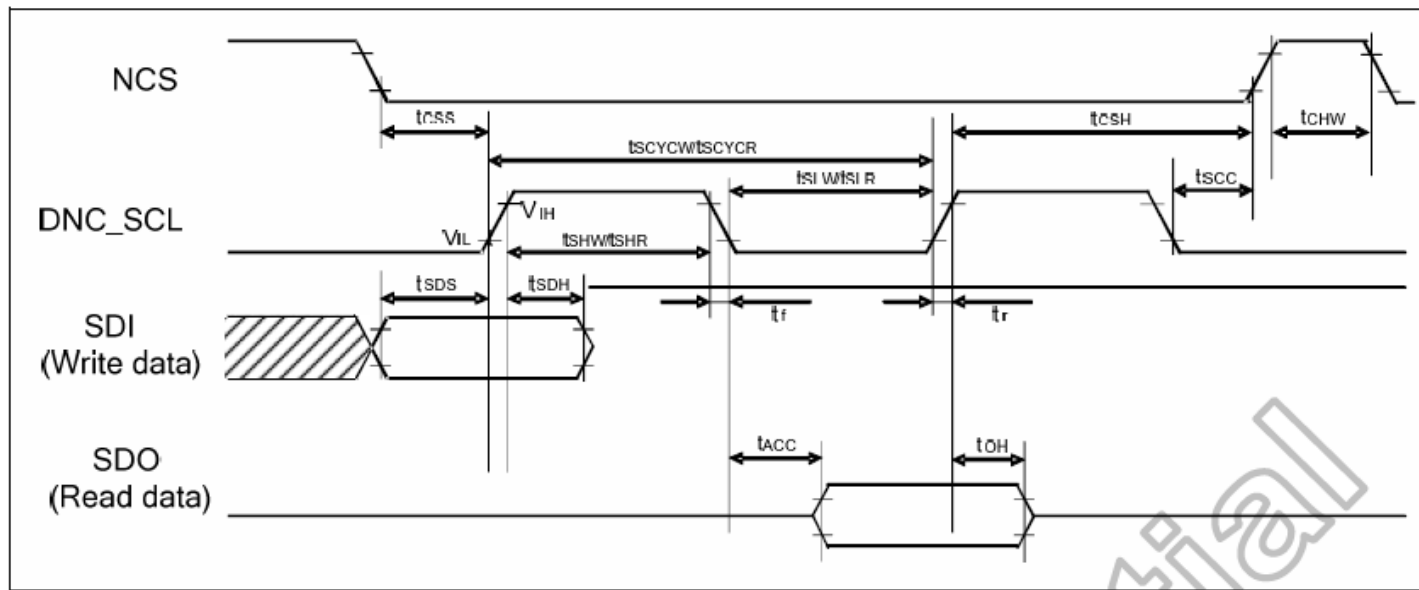


Figure 7. 2 Chip Select Timing





7.2 Display Serial Interface Timing Characteristics



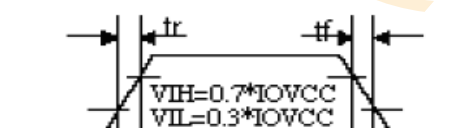
(VSSA=0V, IOVCC=1.65V to 3.3V, VCI=2.3V to 3.3V, Ta = -40 to 85° C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Serial clock cycle (Write)	tSCYCW		100	-	-	ns
DNC_SCL "H" pulse width (Write)	tSHW	DNC_SCL	35	-	-	ns
DNC_SCL "L" pulse width (Write)	tSLW		35	-	-	ns
Data setup time (Write)	tSDS	SDI	30	-	-	ns
Data hold time (Write)	tSDH		30	-	-	ns
Serial clock cycle (Read)	tSCYCR		150	-	-	ns
DNC_SCL "H" pulse width (Read)	tSHR	DNC_SCL	60	-	-	ns
DNC_SCL "L" pulse width (Read)	tSLR		100	-	-	ns
Access Time	tACC	SDO for maximum CL=30pF For minimum CL=8pF	10	-	100	ns
Output disable time	tOH	SDO For maximum CL=30pF For minimum CL=8pF	15	-	100	ns
DNC_SCL to Chip select	tSCC	DNC_SCL, NCS	50	-	-	ns
NCS "H" pulse width	tCHW	NCS	45	-	-	ns
Chip select setup time	tCSS		60	-	-	ns
Chip select hold time	tCSH		80	-	-	ns

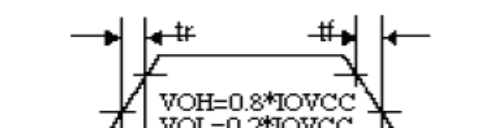
Note: The input signal rise time and fall time (tr, tf) is specified at 15 ns or less.

Logic high and low levels are specified as 30% and 70% of IOVCC for Input signals.

Input Signal Slope



Output Signal Slope

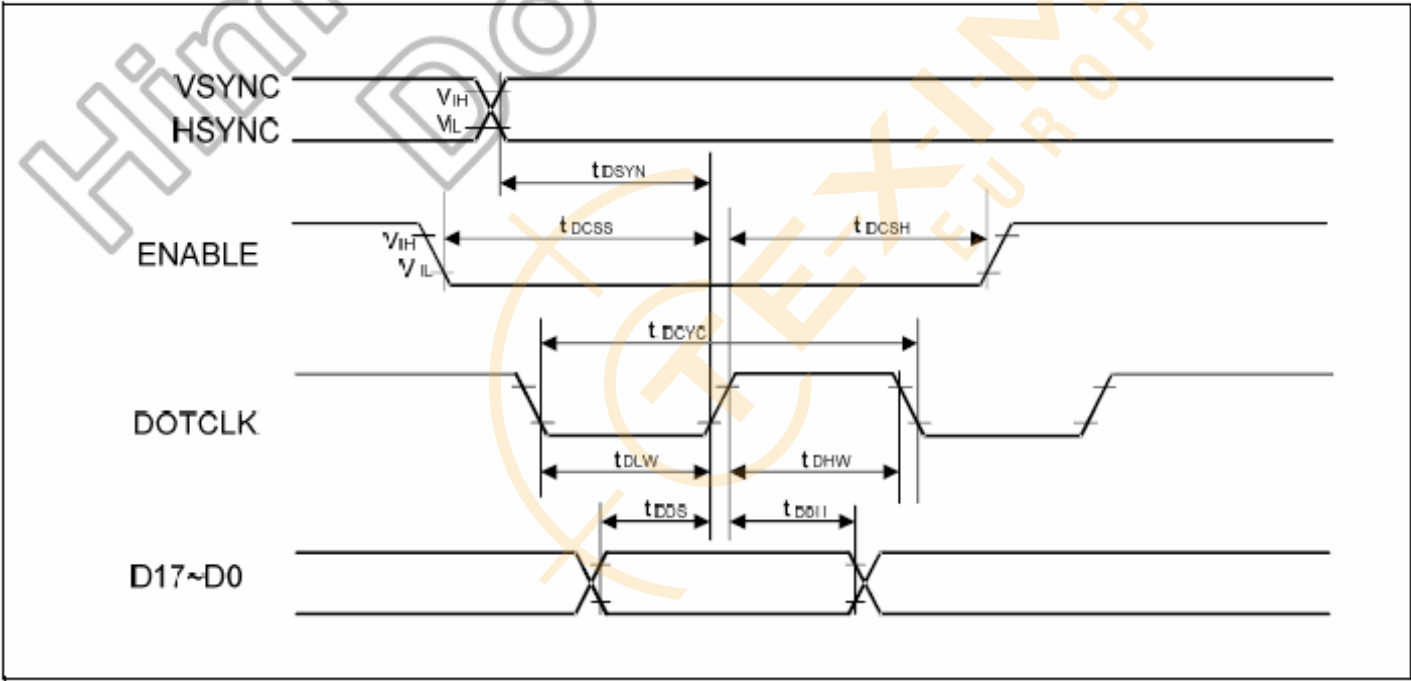
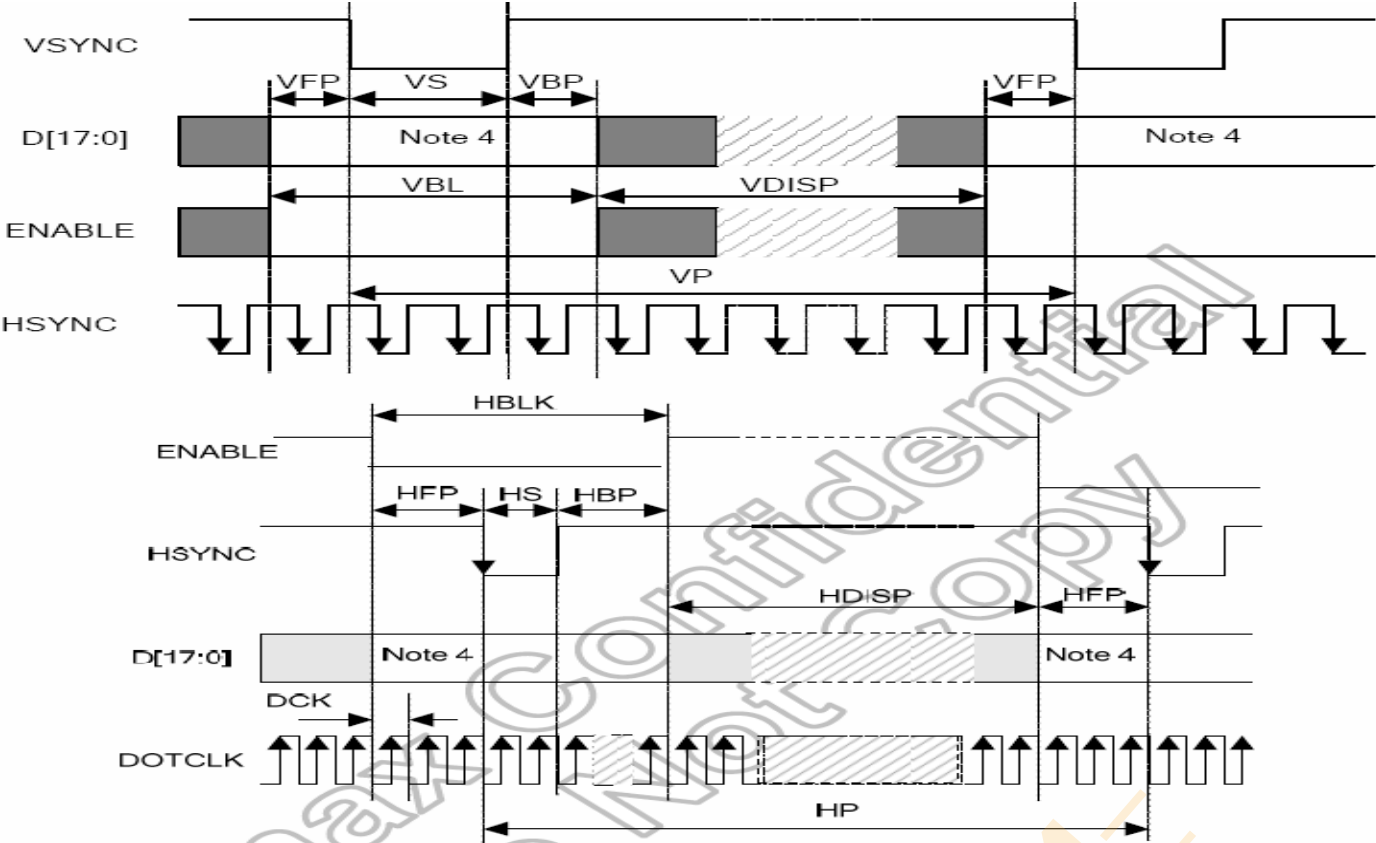


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Long Time supply支持小量
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7.3 Parallel RGB Interface Timing Characteristics





Symbol	Parameter	Conditions	Related Pins	Min.	Typ.	Max.	Unit
VS	VSYSNC Low Pulse Width	-	VSYSNC	1	-	-	Line
VBP	Vertical Back Porch	-	VSYSNC	1	-	-	Line
VFP	Vertical Front Porch	-	VSYSNC	1	-	-	Line
VDISP	Vertical Active Area	-	VSYSNC, HSYNC	-	320	-	Line
HS	HSYSNC Low Pulse Width	-	HSYNC	2	-	-	DOTCLK
HBP	Horizontal Back Porch	-	HSYNC	2	-	-	DOTCLK
HFP	Horizontal Front Porch	-	HSYNC	2	-	-	DOTCLK
HDISP	Horizontal Active Area	-	HSYNC, DOTCLK	-	240	-	DOTCLK
t _{DCYC}	DOTCLK cycle time	VRR = Min . 50 Hz Max. 65 Hz	DOTCLK	100 (note2)	-	226 (note3)	ns
t _{DLW} t _{CHW}	DOTCLK Low time DOTCLK High time	-		50 15	- -	- -	ns
t _{DDS} t _{DDH}	RGB Data setup time RGB Data hold time	-	DOTCLK, D17-D0	15 15	- -	- -	ns
t _{DCSS} t _{DCSH}	ENABLE setup time ENABLE hold Time	-	ENABLE	15 15	- -	- -	ns
t _{DSYN}	SYNC setup time	-	DOTCLK, HSYNC, VSYSNC	15	-	-	ns

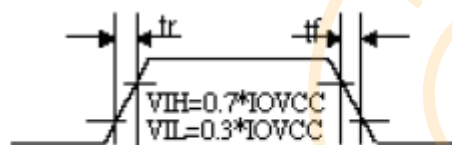
Note: (1) The input signal rise time and fall time (t_r , t_f) is specified at 15 ns or less.

(2) 16.6 MHz

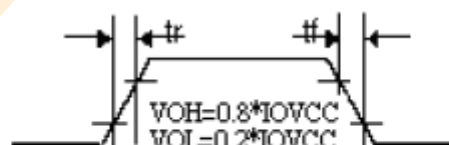
(3) 4.4MHz

(4) Data line can be set to "H" or "L" during blanking time – Don't care.

Input Signal Slope



Output Signal Slope





7.4 Reset Input Timing

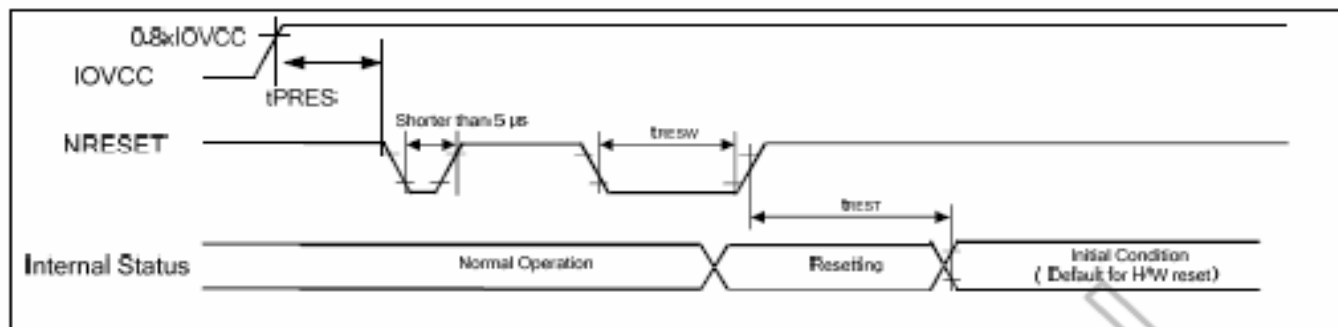


Figure 7.7 Reset input timing

Symbol	Parameter	Related Pins	Min.	Typ.	Max.	Note	Unit
tRESW	Reset low pulse width ⁽¹⁾	NRESET	10	-	-	-	μs
tREST	Reset complete time ⁽²⁾	-	-	-	5	When reset applied during STB mode	ms
		-	-	-	120	When reset applied during STB mode	ms
tPRES	Reset goes high level after Power on time	NRESET & IOVCC	1	-	-	Reset goes high level after Power on	ms

Note: (1) Spike due to an electrostatic discharge on NRESET line does not cause irregular system reset according to the table below.

NRESET Pulse	Action
Shorter than 5 μs	Reset Rejected
Longer than 10 μs	Reset
Between 5 μs and 10 μs	Reset Start

- (2) During the resetting period, the display will be blanked (The display is entering blanking sequence, which maximum time is 120 ms, when Reset Starts in STB Out –mode. The display remains the blank state in STB –mode) and then return to Default condition for H/W reset.
- (3) During Reset Complete Time, ID2 and VCOMOF value in OTP will be latched to internal register during this period. This loading is done every time when there is HW reset complete time (tREST) within 5ms after a rising edge of NRESET.
- (4) Spike Rejection also applies during a valid reset pulse as shown below:



- (5) It is necessary to wait 5msec after releasing !RES before sending commands. Also STB Out command cannot be sent for 120msec.



8. LCD Module Out-Going Quality Level

8.1 VISUAL & FUNCTION INSPECTION STANDARD

8.1.1 Inspection conditions

Inspection performed under the following conditions is recommended.

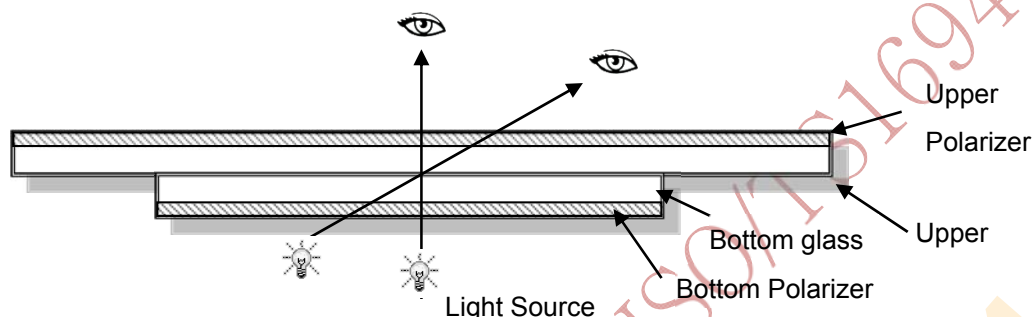
Temperature : $25 \pm 5^{\circ}\text{C}$

Humidity : $65\% \pm 10\% \text{RH}$

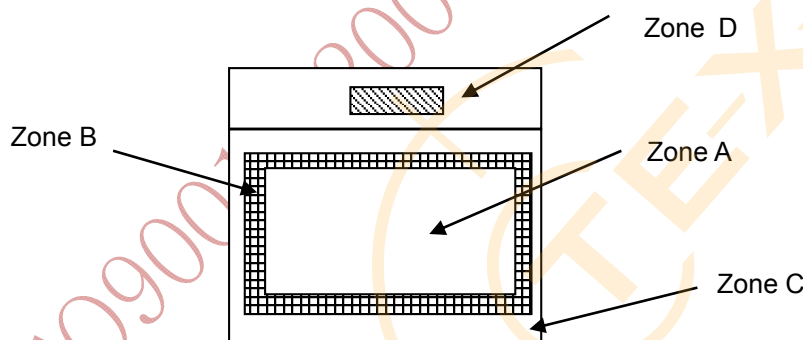
Viewing Angle : Normal viewing Angle.

Illumination: Single fluorescent lamp (300 to 700Lux)

Viewing distance: 30-50cm



8.1.2 Definition



Zone A: Effective Viewing Area (Character or Digit can be seen)

Zone B: Viewing Area except Zone A

Zone C: Outside (Zone A+Zone B) which can not be seen after assembly by customer.)

Zone D: IC Bonding Area

Note:

As a general rule, visual defects in Zone C can be ignored when it doesn't effect product function or appearance after assembly by customer

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常备库存
Standing Stock

长期供货
Long Time supply

支持小量
NO MOQ

品种齐全
In Full Range



8.1.3 Sampling Plan

According to GB/T 2828-2003 ; , normal inspection, Class II

AQL:

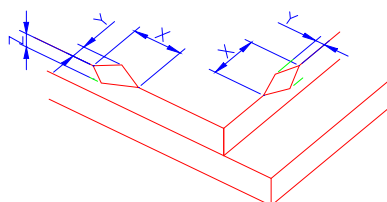
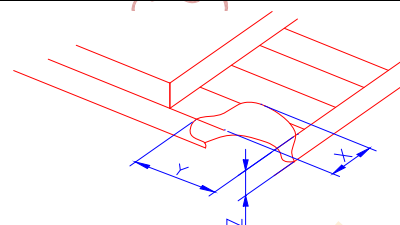
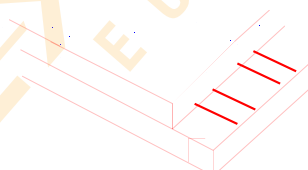
Major defect	Minor defect
0.65	1.5

LCD: Liquid Crystal Display , TP: Touch Panel , LCM: Liquid Crystal Module

No	Items to be inspected	Criteria	Classification of defects
1	Functional defects	1) No display, Open or miss line 2) Display abnormally, Short 3) Backlight no lighting, abnormal lighting. 4) TP no function	Major
2	Missing	Missing component	
3	Outline dimension	Overall outline dimension beyond the drawing is not allowed	
4	Color tone	Color unevenness, refer to limited sample	Minor
5	Spot Line defect	Light dot , Dim spot,Polarizer Bubble ; Polarizer accidented spot.	
6	Soldering appearance	Good soldering , Peeling off is not allowed.	
7	LCD/Polarizer/TP	Black/White spot/line, scratch, crack, etc.	



8.1.4 Criteria (Visual)

Number	Items	Criteria(mm)						
1.0 LCD Crack/Broken NOTE: X: Length Y: Width Z: Height L: Length of ITO, T: Height of LCD	(1) The edge of LCD broken	 <table><tr><td>X</td><td>Y</td><td>Z</td></tr><tr><td>≤3.0mm</td><td><Inner border line of the seal</td><td>≤T</td></tr></table>	X	Y	Z	≤3.0mm	<Inner border line of the seal	≤T
	X	Y	Z					
	≤3.0mm	<Inner border line of the seal	≤T					
(2)LCD corner broken	 <table><tr><td>X</td><td>Y</td><td>Z</td></tr><tr><td>≤3.0mm</td><td>≤L</td><td>≤T</td></tr></table>	X	Y	Z	≤3.0mm	≤L	≤T	
X	Y	Z						
≤3.0mm	≤L	≤T						
(3) LCD crack	 Crack Not allowed							



2.0

Spot defect

X

$$\Phi = (X + Y) / 2$$

① light dot (LCD/TP/Polarizer black/white spot , light dot, pinhole, dent, stain)

Zone Size (mm)	Acceptable Qty			
	A	B	C	
$\Phi \leq 0.10$	Ignore		Ignore	
$0.10 < \Phi \leq 0.20$	3(distance $\geq 10\text{mm}$)			
$0.20 < \Phi \leq 0.25$	2			
$\Phi > 0.3$	0			

② Dim spot (LCD/TP/Polarizer dim dot, light leakage, dark spot)

Zone Size (mm)	Acceptable Qty			
	A	B	C	
$\Phi \leq 0.1$	Ignore		Ignore	
$0.10 < \Phi \leq 0.20$	3(distance $\geq 10\text{mm}$)			
$0.20 < \Phi \leq 0.25$	2			
$\Phi > 0.3$	0			

③ Polarizer accidented spot

Zone Size (mm)	Acceptable Qty			
	A	B	C	
$\Phi \leq 0.2$	Ignore		Ignore	
$0.3 < \Phi \leq 0.5$	2(distance $\geq 10\text{mm}$)			
$\Phi > 0.5$	0			

④ Pixel bad points (light dot, Dim dot, color dot)

Zone Size (mm)	Acceptable Qty			
	A	B	C	
$\Phi \leq 0.1$	Ignore		Ignore	
$0.15 < \Phi \leq 0.2$	2(distance $\geq 10\text{mm}$)			
$\Phi > 0.2$	0			

⑤ Polarizer Bubble

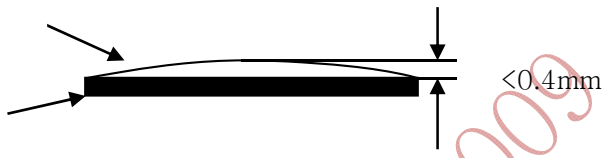
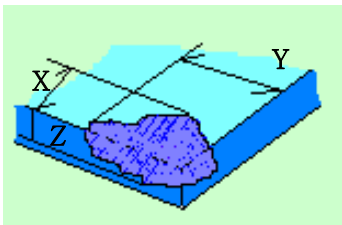
Zone Size (mm)	Acceptable Qty			
	A	B	C	
$\Phi \leq 0.2$	Ignore		Ignore	
$0.3 < \Phi \leq 0.4$	3(distance ≥ 10)			
$0.4 < \Phi \leq 0.5$	2			
$\Phi > 0.5$	0			



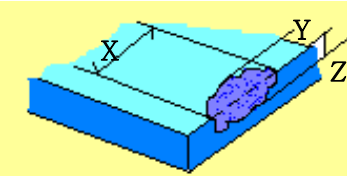
3.0	Line defect (LCD/TP /Polarizer backlight black/white line, scratch, stain)	Width(mm)	Length(m m)	Acceptable Qty		
				A	B	C
		$\Phi\leq0.03$	Ignore	Ignore		Ignore
		$0.03<W\leq0.04$	$L\leq3.0$	$N\leq2$		
		$0.04<W\leq0.05$	$L\leq2.0$	$N\leq1$		
		$0.05<W$	Define as spot defect			
4.0	Electronic Comp onents SMT	Not allow missing parts , solderless connection ; cold solder joint , mis match , The positive and negative polarity opposite				
5.0	Display color& B rightness	1. Color : Measuring the color coordinates, The measurement standar d according to the datasheet or samples. 2. Brightness : Measuring the brightness of White screen, The measu rement standard according to the datasheet or Samples.				

6.0	RTP Related	TP film bubble/ accident spot	Size Φ (mm)		Acceptable Qty			
					A	B	C	
			$\Phi \leq 0.1$		Ignore		Ignore	
			$0.1 < \Phi \leq 0.2$		3 (distance ≥ 10 mm)			
			$0.25 < \Phi \leq 0.3$		2			
		$\Phi > 0.3$		0				
		TP film scratch	Width(mm)		Length(mm)	Acceptable Qty		
						A	B	C
			$\Phi \leq 0.03$		Ignore	Ignore		Ignore
			$0.03 < W \leq 0.04$		$L \leq 3.0$	$N \leq 2$		
$0.04 < W \leq 0.05$			$L \leq 2.0$	$N \leq 1$				
$0.05 < W$			Define as spot defect					



		Assembly deflection	beyond the edge of backlight ≤0.2mm							
		Bulge (undulation included)	The ITO film plumped below 0.40mm, it's ok. 							
		Newton Ring	Newton Ring area>1/3 TP area NG Newton Ring area≤1/3 TP area OK							
		TP corner broken X : length Y : width Z : height	<table border="1"><thead><tr><th>X</th><th>Y</th><th>Z</th></tr></thead><tbody><tr><td>X≤3mm</td><td>Y≤3mm</td><td>Z<COVER thickness s</td></tr></tbody></table> *Circuitry broken is not allowed.	X	Y	Z	X≤3mm	Y≤3mm	Z<COVER thickness s	
X	Y	Z								
X≤3mm	Y≤3mm	Z<COVER thickness s								



			<table><tr><td>X</td><td>Y</td><td>Z</td></tr><tr><td>$X \leq 4\text{mm}$</td><td>$Y \leq 2\text{mm}$</td><td>$Z < \text{COVER thickness}$</td></tr></table>	X	Y	Z	$X \leq 4\text{mm}$	$Y \leq 2\text{mm}$	$Z < \text{COVER thickness}$	
X	Y	Z								
$X \leq 4\text{mm}$	$Y \leq 2\text{mm}$	$Z < \text{COVER thickness}$								
		TP edge broken X : length Y : width Z : height	* Circuitry broken is not allowed.							

Criteria (functional items)

Number	Items	Criteria (mm)
1	No display	Not allowed
2	Missing segment	Not allowed
3	Short	Not allowed
4	Backlight no lighting	Not allowed
5	TP no function	Not allowed



9. Reliability Test Result

Item	Condition	Inspection after test
High Temperature Operating	85℃, 96H	Inspection after 2~4hours storage at room temperature, the sample shall be free from defects: 1. Air bubble in the LCD; 2. Non-display; 3. Missing segments/line; 4. Glass crack; 5. Current IDD is twice higher than initial value.
Low Temperature Operating	-30℃, 96HR	
High Temperature Storage	90℃, 96HR	
Low Temperature Storage	-40℃, 96HR	
High Temperature & High Humidity Storage	+60℃, 90% RH, 96 hours.	
Thermal Shock (Non-operation)	-30℃, 30 min ↔ 85℃, 30 min, Change time: 5min 20CYC.	
ESD test	C=150pF, R=330, 5points/panel Air: ±8KV, 5times; Contact: ±6KV, 5 times; (Environment: 15℃~35℃, 30%~60%).	
Vibration (Non-operation)	Frequency range: 10~55Hz, Stroke: 1.5mm Sweep: 10Hz~55Hz~10Hz 2 hours for each direction of X.Y.Z. (6 hours for total) (Package condition).	
Box Drop Test	1 Corner 3 Edges 6 faces, 80cm (MEDIUM BOX)	

Remark:

1. The test samples should be applied to only one test item.
2. Sample size for each test item is 5~10pcs.
3. For Damp Proof Test, Pure water (Resistance > 10MΩ) should be used.
4. In case of malfunction defect caused by ESD damage, if it would be recovered to normal state after resetting, it would be judged as a good part.
5. Failure Judgment Criterion: Basic Specification, Electrical Characteristic, Mechanical Characteristic, Optical Characteristic.

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常备库存 Standing Stock	长期供货 Long Time supply	支持小量 NO MOQ	品种齐全 In Full Range	



10. Cautions and Handling Precautions

10.1 Handling and Operating the Module

(1) When the module is assembled, it should be attached to the system firmly.

Do not warp or twist the module during assembly work.

(2) Protect the module from physical shock or any force. In addition to damage, this may cause improper operation or damage to the module and back-light unit.

(3) Note that polarizer is very fragile and could be easily damaged. Do not press or scratch the surface.

(4) Do not allow drops of water or chemicals to remain on the display surface.

If you have the droplets for a long time, staining and discoloration may occur.

(5) If the surface of the polarizer is dirty, clean it using some absorbent cotton or soft cloth.

(6) The desirable cleaners are water, IPA (Isopropyl Alcohol) or Hexane.

Do not use ketene type materials (ex. Acetone), Ethyl alcohol, Toluene, Ethyl acid or Methyl chloride. It might permanent damage to the polarizer due to chemical reaction.

(7) If the liquid crystal material leaks from the panel, it should be kept away from the eyes or mouth. In case of contact with hands, legs, or clothes, it must be washed away thoroughly with soap.

(8) Protect the module from static; it may cause damage to the CMOS ICs.

(9) Use finger-stalls with soft gloves in order to keep display clean during the incoming inspection and assembly process.

(10) Do not disassemble the module.

(11) Protection film for polarizer on the module shall be slowly peeled off just before use so that the electrostatic charge can be minimized.

(12) Pins of I/F connector shall not be touched directly with bare hands.

(13) Do not connect, disconnect the module in the "Power ON" condition.

(14) Power supply should always be turned on/off by the item 6.1 Power On Sequence & 6.2 Power Off Sequence

10.2 Storage and Transportation.

(1) Do not leave the panel in high temperature, and high humidity for a long time.

It is highly recommended to store the module with temperature from 0 to 35 °C and relative humidity of less than 70%

(2) Do not store the TFT-LCD module in direct sunlight.

(3) The module shall be stored in a dark place. When storing the modules for a long time, be sure to adopt effective measures for protecting the modules from strong ultraviolet radiation, sunlight, or fluorescent light.

(4) It is recommended that the modules should be stored under a condition where no condensation is allowed. Formation of dewdrops may cause an abnormal operation or a failure of the module.

In particular, the greatest possible care should be taken to prevent any module from being operated where condensation has occurred inside.

(5) This panel has its circuitry FPC on the bottom side and should be handled carefully in order not to be stressed.

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常备库存 Standing Stock	长期供货 Long Time supply	支持小量 NO MOQ	品种齐全 In Full Range	

11. Packing

----TBD-----

ISO9001 : 2008
ISO/TS16949 : 2009
TEXIM-EUROPE

Part. No	KD035QVFMA064-04-TP	REV	V1.0	Page 32 of 32
	常备库存 Standing Stock	长期供货 Long Time supply	支持小量 NO MOQ	品种齐全 In Full Range

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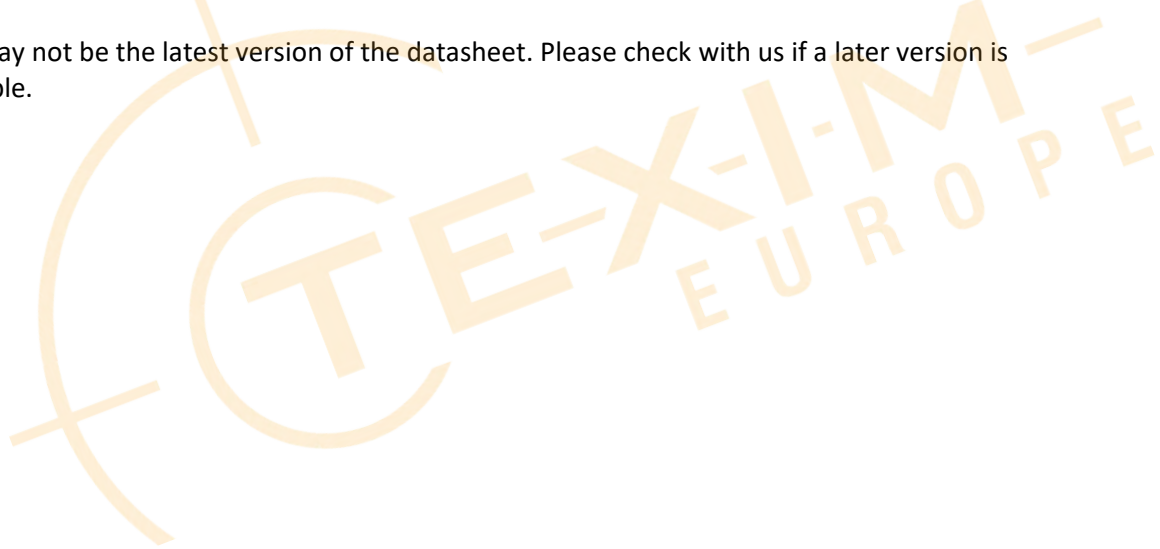
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Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time.

All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts.

Please contact us if you have any questions about the contents of the datasheet.

This may not be the latest version of the datasheet. Please check with us if a later version is available.





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