SPEC for Mass Production

Spec No.	CPD-365199AB-01
Date	August 24, 2022

TYPE : C0650VG65199-BN-AB

< 6.5 inch VGA transmissive color TFT
with LED backlight>

CONTENTS

KYOCERA CORPORATION

This specification is subject to change without notice.
Consult Kyocera before ordering.

Original Issue Date	Designed by: Engineering dept.			Confirmed by: QA dept.	
	Prepared	Checked	Approved	Checked	Approved
August 24, 2022	*K. Komurasaki*	*I. Kawajiri*	*A. Iwasaki*	*Y. Aritsubo*	*M. Kinouchi*

Warning

1. This Kyocera LCD module has been specifically designed for use only in electronic devices and industrial machines in the area of audio control, office automation, industrial control, home appliances, etc. The module should not be used in applications where the highest level of safety and reliability are required and module failure or malfunction of such module results in physical harm or loss of life, as well as enormous damage or loss. Such fields of applications include, without limitation, medical, aerospace, communications infrastructure, atomic energy control. Kyocera expressly disclaims any and all liability resulting in any way to the use of the module in such applications.

2. Customer agrees to indemnify, defend and hold Kyocera harmless from and against any and all actions, claims, damages, liabilities, awards, costs, and expenses, including legal expenses, resulting from or arising out of Customer's use, or sale for use, or Kyocera modules in applications.

Caution

1. Kyocera shall have the right, which Customer hereby acknowledges, to immediately scrap or destroy tooling for Kyocera modules for which no Purchase Orders have been received from the Customer in a two-year period.

2. Please note that we may not be able to respond to new environmental regulations after receiving the final mass production order for this product.

Revision record

Date	Designed by : Engineering dept.			Confirmed by : QA dept.	
	Prepared	Checked	Approved	Checked	Approved

Rev.No.	Date	Page	Descriptions

1. Application

This document defines the specification of C0650VG65199-BN-AB. (RoHS Compliant)

2. Construction and outline

LCD	: Transmissive color dot matrix type TFT
Backlight system	: LED
Polarizer	: Anti-Glare treatment
Additional circuit	: Timing controller, Power supply (3.3V input) (without constant current circuit for LED Backlight)

3. Mechanical specifications

Item	Specification	Unit
Outline dimensions 1)	158.0(W)×120.36(H)×10.75(D)	mm
Active area	132.5(W)×99.4(H) (16.5cm/6.5 inch(Diagonal))	mm
Dot format	640×(R,G,B)(W)×480(H)	dot
Dot pitch	0.069(W)×0.207(H)	mm
Base color 2)	Normally White	-
Mass	200	g

1) Projection not included. Please refer to outline for details.
2) Due to the characteristics of the LCD material, the color varies with environmental temperature.

4. Absolute maximum ratings

4-1. Electrical absolute maximum ratings

Item		Symbol	Min.	Max.	Unit
Supply voltage		V_{CC}	0	5.5	V
Input signal voltage	1)	V_{IN}	-0.3	5.5	V
LED forward current	2) 3)	IF	-	150	mA

1) Input signal : CK, R0～R5, G0～G5, B0～B5, H_{SYNC}, V_{SYNC}, ENAB, R/L, U/D
2) For each "AN-CA"
3) Do not apply reversed voltage.

4-2. Environmental absolute maximum ratings

Item		Symbol	Min.	Max.	Unit
Operating temperature	1)	T_{OP}	-20	70	°C
Storage temperature	2)	T_{STO}	-20	70	°C
Operating humidity	3)	H_{OP}	10	4)	%RH
Storage humidity	3)	H_{STO}	10	4)	%RH
Vibration		-	5)	5)	-
Shock		-	6)	6)	-

1) Operating temperature means a temperature which operation shall be guaranteed.
Since display performance is evaluated at 25°C, another temperature range should be confirmed.
2) Temp. = -30°C＜48h , Temp. = 80°C＜168h
Store LCD at normal temperature/humidity. Keep them free from vibration and shock.
An LCD that is kept at a low or a high temperature for a long time can be defective due to other conditions, even if the low or high temperature satisfies the standard.
(Please refer to "Precautions for Use" for details.)
3) Non-condensing
4) Temp.≦40°C, 85%RH Max.
Temp.＞40°C, Absolute humidity shall be less than 85%RH at 40°C.
5)

Frequency	10～55 Hz	Acceleration value (0.3～9 m/s^2)
Vibration width	0.15mm	
Interval	10-55-10 Hz 1 minute	

2 hours in each direction X, Y, Z (6 hours total)
EIAJ ED-2531
6) Acceleration: 490 m/s^2, Pulse width: 11 ms
3 times in each direction: ±X, ±Y, ±Z
EIAJ ED-2531

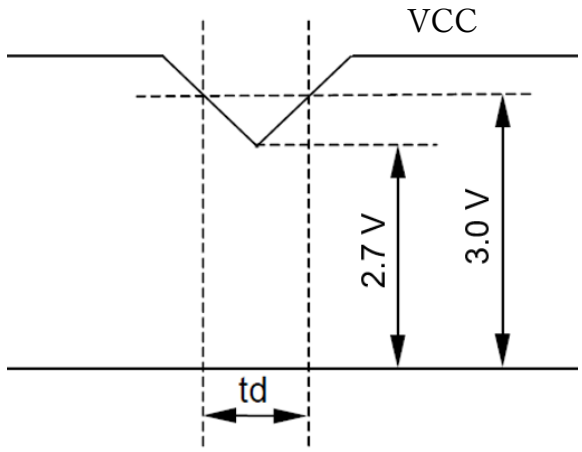
5. Electrical characteristics

Temp. = 25°C

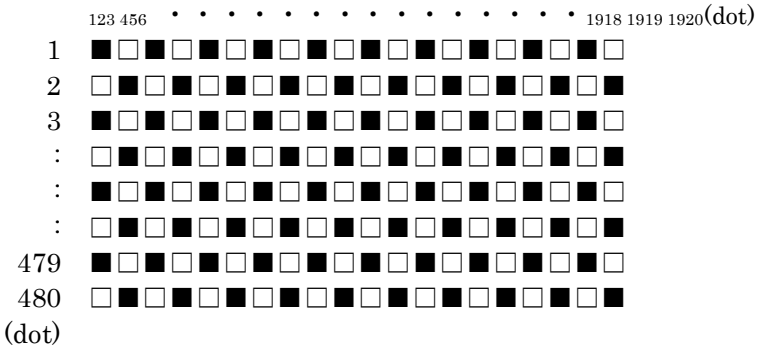
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply voltage 1)	V_{CC}	-	3.0	3.3	3.6	V
Current consumption	I_{CC}	2)	-	120	160	mA
Permissive input ripple voltage	V_{RP}	-	-	-	100	mVp-p
Input signal voltage	V_{IL}	"Low" level	-	-	0.8	V
	V_{IH}	"High" level	2.7	-	3.0	V

1) VCC-dip conditions:

When 2.7 V ≤ VCC < 3.0 V, td ≤ 10 ms
When VCC < 2.7 V
VCC-dip conditions should also follow the power and signals sequence.



2) Display pattern:
V_{DD} = 3.3V, Temp. = 25°C



6. Optical characteristics

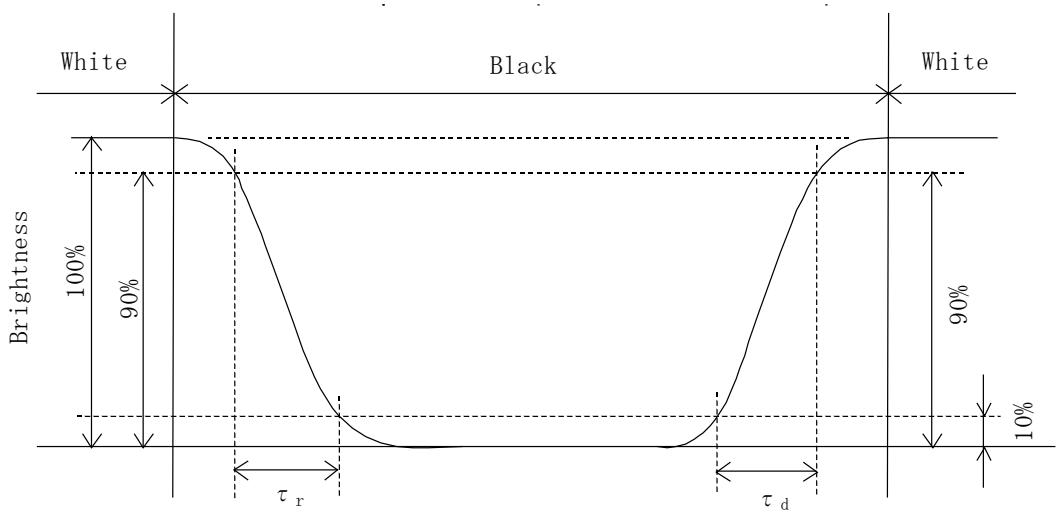
Measuring spot = ϕ 6.0mm, Temp. = 25°C

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Response time	Rise	τ_r	$\theta = \phi = 0°$	-	15	-	ms
	Down	τ_d	$\theta = \phi = 0°$	-	16	-	ms
Viewing angle range View direction : 6 o'clock (Gray inversion)		θ UPPER	CR＞10	-	50	-	deg.
		θ LOWER		-	70	-	
		ϕ LEFT		-	80	-	deg.
		ϕ RIGHT		-	80	-	
Contrast ratio		CR	$\theta = \phi = 0°$	400	800	-	-
Brightness		L	IF=35mA/Line	700	1,000	-	cd/m²
Chromaticity coordinates	Red	x	$\theta = \phi = 0°$	0.555	0.605	0.655	-
		y		0.300	0.350	0.400	
	Green	x	$\theta = \phi = 0°$	0.275	0.325	0.375	
		y		0.515	0.565	0.615	
	Blue	x	$\theta = \phi = 0°$	0.100	0.150	0.200	
		y		0.080	0.130	0.180	
	White	x	$\theta = \phi = 0°$	0.260	0.310	0.360	
		y		0.285	0.335	0.385	

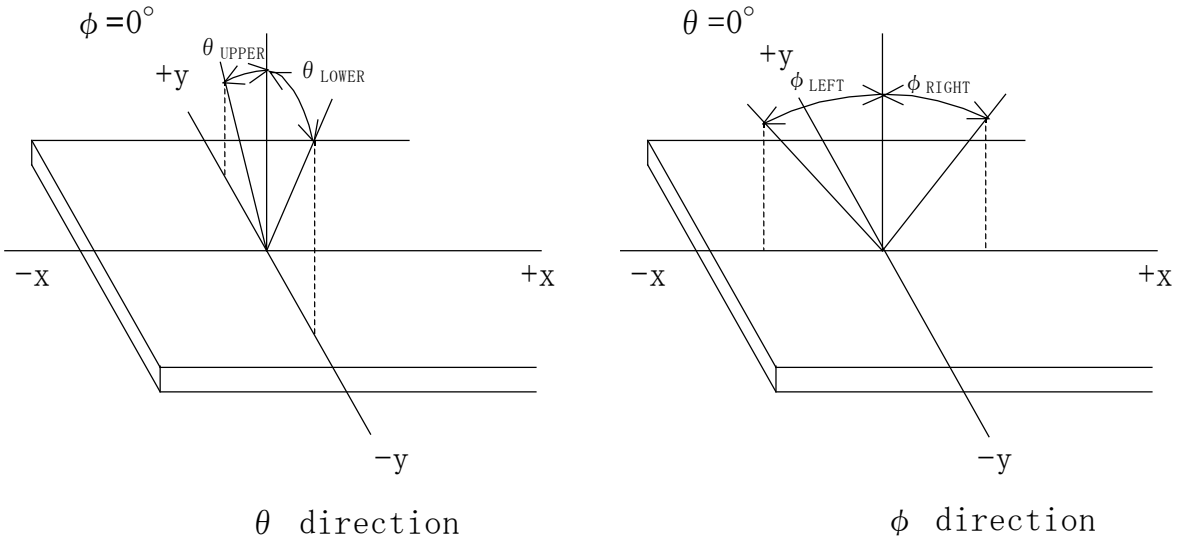
6-1. Definition of contrast ratio

$$\text{CR(Contrast ratio)} = \frac{\text{Brightness with all pixels "White"}}{\text{Brightness with all pixels "Black"}}$$

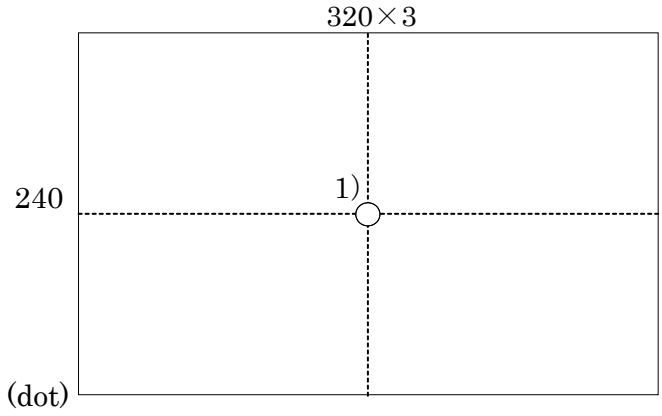
6-2. Definition of response time



6-3. Definition of viewing angle



6-4. Brightness measuring point



1) Rating is defined as the white brightness at center of display screen.
2) Measured 5 minutes after the LED is powered on. (Ambient temp. = 25°C)

7. Interface signals

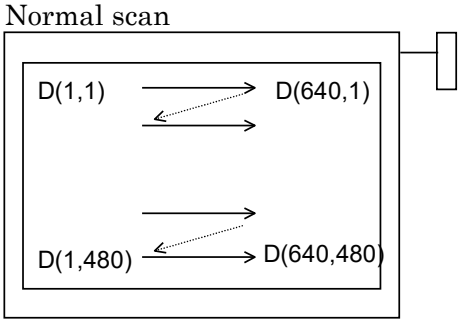
7-1. LCD

No.	Symbol	Description
1	GND	
2	DCLK	Clock signal for sampling catch data signal
3	HD	Horizontal sync signal
4	VD	Vertical sync signal
5	GND	
6	R0	Red data signal(LSB)
7	R1	Red data signal
8	R2	Red data signal
9	R3	Red data signal
10	R4	Red data signal
11	R5	Red data signal(MSB)
12	GND	
13	G0	Green data signal(LSB)
14	G1	Green data signal
15	G2	Green data signal
16	G3	Green data signal
17	G4	Green data signal
18	G5	Green data signal(MSB)
19	GND	
20	B0	Blue data signal(LSB)
21	B1	Blue data signal
22	B2	Blue data signal
23	B3	Blue data signal
24	B4	Blue data signal
25	B5	Blue data signal(MSB)
26	GND	
27	DENA	Data enable signal(to settle the viewing area)
28	VCC	Power Supply (DC 3.3V)
29	VCC	Power Supply (DC 3.3V)
30	TEST	This pin should be open. Test signal output for only internal test use.
31	REV	Reverse scan control. L = Normal, H = Reverse

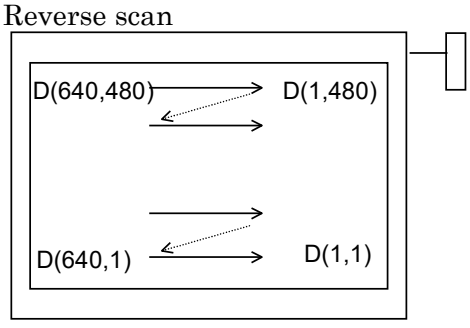
*) The shielding case is connected with GND

LCD connector : DF9B-31P-1V(32) (HIROSE)
Matching connector : DF9B-31S-1V (HIROSE)

Normal scan



Reverse scan



7-2. LED

CN2

No.	Symbol	Description
1	ANODE-1(RED)	LED Anode Terminal
2	ANODE-2(RED)	LED Anode Terminal
3	NC	Non Connection
4	NC	Non Connection
5	CATHODE-1(BLACK)	LED Cathode Terminal
6	CATHODE-2(BLACK)	LED Cathode Terminal

LCD side connector : SHLP-06V-S-B (JST)
Recommended matching connector
: SM06B-SHLS-TF(LF)(SN) (JST)

CN3

No.	Symbol	Description
1	ANODE-3(RED)	LED Anode Terminal
2	ANODE-4(RED)	LED Anode Terminal
3	NC	Non Connection
4	NC	Non Connection
5	CATHODE-3(BLACK)	LED Cathode Terminal
6	CATHODE-4(BLACK)	LED Cathode Terminal

LCD side connector : SHLP-06V-S-B (JST)
Recommended matching connector
: SM06B-SHLS-TF(LF)(SN) (JST)

8. Input timing characteristics

8-1. Timing characteristics

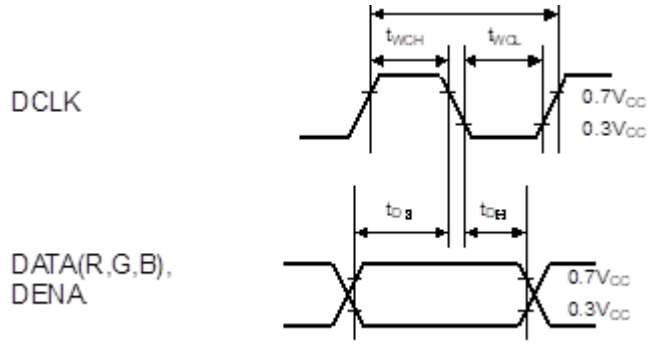
Item		Symbol	Min.	Typ.	Max.	Unit
DCLK	Frequency	f_{CLK}	23.3	25.0	30.0	MHz
	Period	t_{CLK}	33.3	40.0	42.9	ns
	Low Width	t_{WCL}	12	-	-	ns
	High Width	t_{WCH}	12	-	-	ns
DATA (R,G,B,DENA)	Set up time	t_{DS}	8	-	-	ns
	Hold time	t_{DH}	16	-	-	ns
DENA	Horizontal display area	t_{HA}	640	640	640	t_{CLK}
	Horizontal blanking time	t_{HBP} +t_{HFP}	120	154	640	t_{CLK}
	Horizontal period	t_H	760	794	1280	t_{CLK}
	Vertical display area	t_{VA}	480	480	480	t_H
	Vertical blanking time	t_{VBP} +t_{VFP}	30	45	80	t_H
	Vertical period	t_V	510	525	560	t_H
Display frame rate		f_R	55	60	70	Hz

[Note]

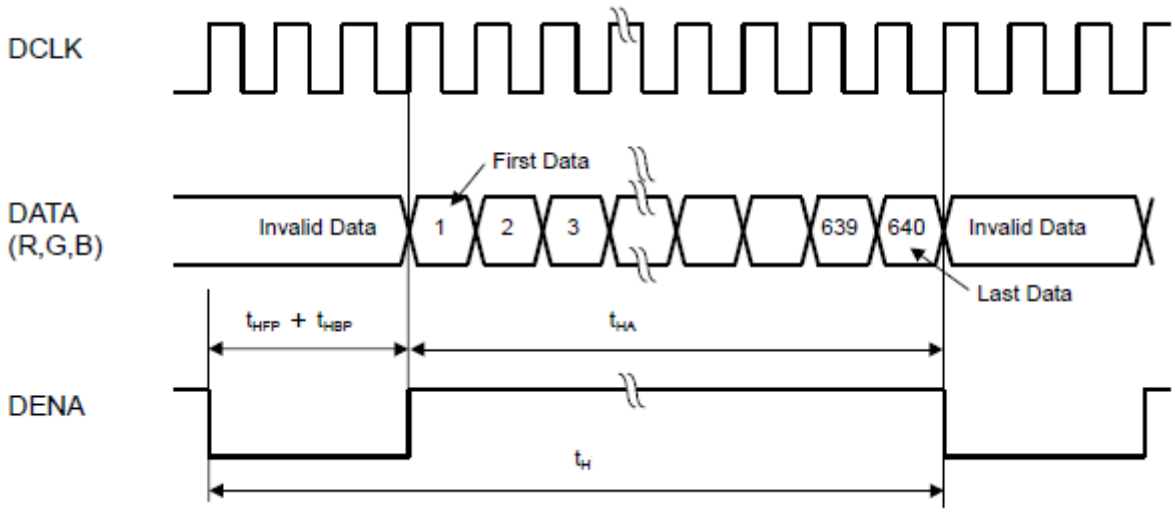
1) DATA is latched at fall edge of DCLK in this timing specification.
2) DENA (Data Enable) should always be positive polarity as shown in the timing specification.
3) Accepted only 640 data and 480 lines.
4) REV should be stable during operation.

8-2. Timing chart

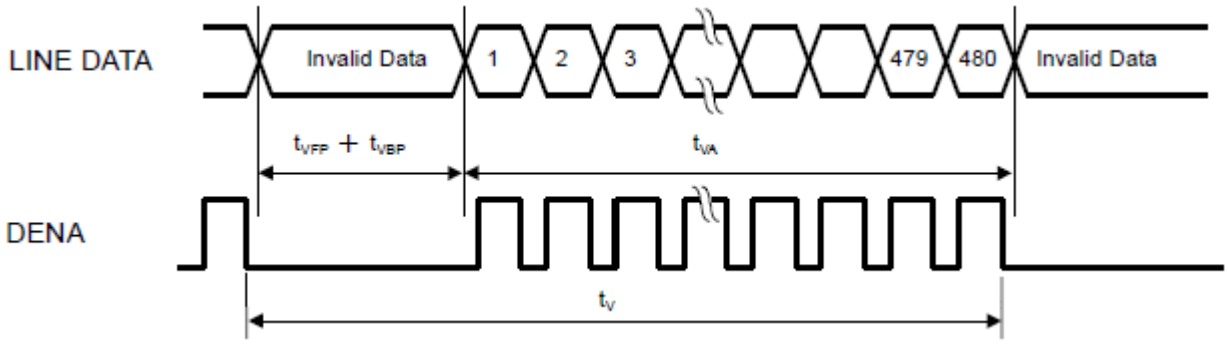
a. Pixel timing chart



b. Horizontal timing chart

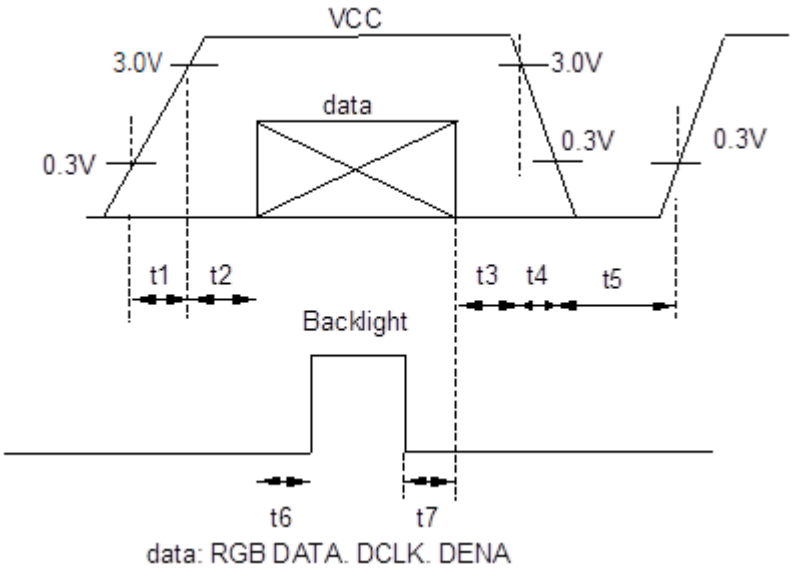


c. Vertical timing chart

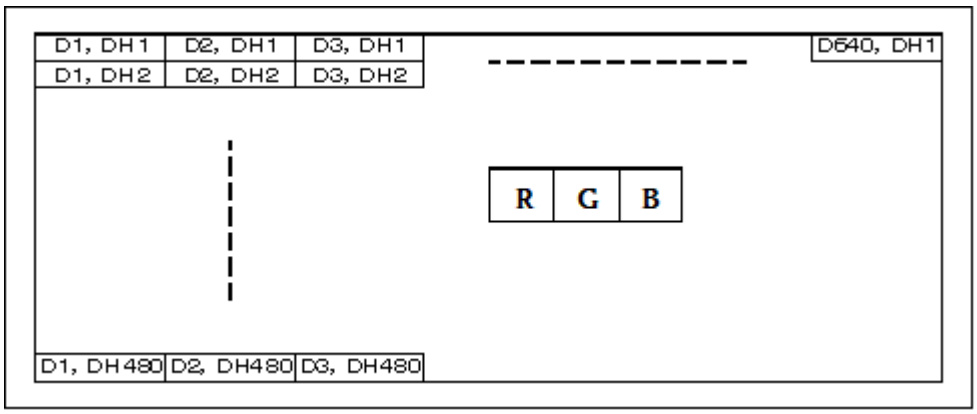


8-3. Power and signals sequence

t1 ≤ 10 ms　　200 ms < t6
150 ms ≤ t2 ≤ 190 ms　　0 ≤ t7
t3 ≤ 50 ms
t4 ≤ 50 ms
500 ms ≤ t5



8-4. Input data signals and display position on the screen



8-5. Color data assignment

COLOR	INPUT DATA	R DATA						G DATA						B DATA					
		MSB					LSB	MSB					LSB	MSB					LSB
		R5	R4	R3	R2	R1	R0	G5	G4	G3	G2	G1	G0	B5	B4	B3	B2	B1	B0
BASIC COLOR	BLACK	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RED (63)	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
	GREEN (63)	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0
	BLUE (63)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
	CYAN	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1
	MAGENTA	1	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	1
	YELLOW	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0
	WHITE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
RED	RED (0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	RED (1)	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	RED (2)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	RED (62)	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	RED (63)	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
GREEN	GREEN (0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	GREEN (1)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	GREEN (2)	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	GREEN (62)	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0
	GREEN (63)	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0	0	0
BLUE	BLUE (0)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	BLUE (1)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	BLUE (2)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
	BLUE (62)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0
	BLUE (63)	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1

[Note]

1) Definition of gray scale

Color (n) --- n indicates gray scale level.

Higher n means brighter level.

2) Data 1: High, 0: Low

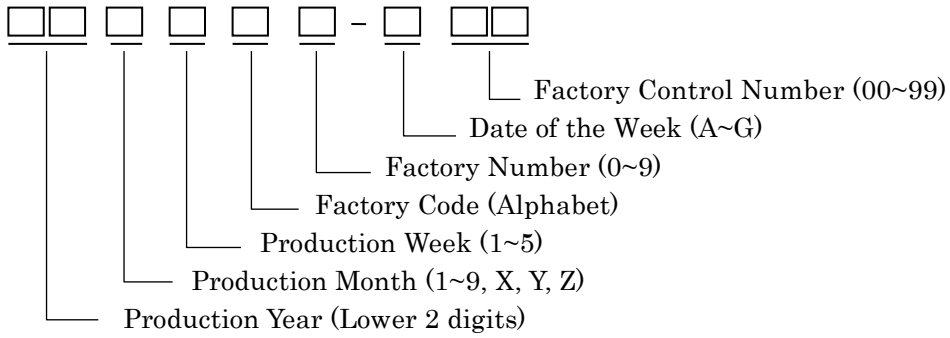
9. Backlight characteristics

Item	Symbol	Min.	Typ.	Max.	Unit	Note
Forward current 1)	IF	-	35	-	mA	Ta=-20～70°C
Forward voltage 1)	VF	-	24.0	27.2	V	IF=35mA, Ta=-20℃
		-	22.4	25.6	V	IF=35mA, Ta=25℃
		-	21.5	24.7	V	IF=35mA, Ta=70℃
Operating life time 2), 3)	T	-	70,000	-	h	IF=35mA, Ta=25℃

1) For each “AN-CA”
2) When brightness decrease 50% of minimum brightness.
3) Life time is estimated data. (Condition : IF=35mA, Ta=25℃ in chamber).
4) An input current below 8.0mA may reduce the brightness uniformity of the LED backlight.
This is because the amount of light from each LED chip is different. Therefore, please evaluate carefully before finalizing the input current.

10. Lot number identification

The production lot of module is specified as follows.



11. Warranty

11-1. Incoming inspection

Please inspect the LCD within one month after your receipt.

11-2. Production warranty

Kyocera warrants the LCDs for a period of 12 months from the ship date. Kyocera shall, by mutual agreement, replace or re-work defective LCDs that are shown to be Kyocera's responsibility.

12. Precautions for use

12-1. Installation of the LCD

1) A transparent protection plate shall be added to protect the LCD and its polarizer
2) The LCD shall be installed so that there is no pressure on the LSI chips.
3) The LCD shall be installed flat, without twisting or bending.
4) A transparent protection sheet is attached to the polarizer. Please remove the protection film slowly before use, paying attention to static electricity.

12-2. Static electricity

1) Since CMOS ICs are mounted directly onto the LCD glass, protection from static electricity is required.
2) Workers should use body grounding. Operator should wear ground straps.

12-3. LCD operation

1) The LCD shall be operated within the limits specified. Operation at values outside of these limits may shorten life, and/or harm display images.

12-4. Storage

1) The LCD shall be stored within the temperature and humidity limits specified.
   Store in a dark area, and protect the LCD from direct sunlight or fluorescent light.
2) Always store the LCD so that it is free from external pressure onto it.

12-5. Usage

1) DO NOT store in a high humidity environment for extended periods. Polarizer degradation bubbles, and/or peeling off of the polarizer may result.
2) The front polarizer is easily scratched or damaged. Prevent touching it with any hard material, and from being pushed or rubbed.
3) The LCD screen may be cleaned by wiping the screen surface with a soft cloth or cotton pad using a little Ethanol.
4) Water may cause damage or discoloration of the polarizer. Clean condensation or moisture from any source immediately.
5) Always keep the LCD free from condensation during testing. Condensation may permanently spot or stain the polarizer.
6) Do not pull the LED lead wires and do not bend the root of the wires. Housing should be designed to protect LED lead wires from external stress.
7) Do not disassemble LCD because it will result in damage.
8) This Kyocera LCD has been specifically designed for use in general electronic devices, but not for use in a special environment such as usage in an active gas. Hence, when the LCD is supposed to be used in a special environment, evaluate the LCD thoroughly beforehand and do not expose the LCD to chemicals such as an active gas.
9) Please do not use solid-base image pattern for long hours because a temporary afterimage may appear. We recommend using screen saver etc. in cases where a solid-base image pattern must be used.
10) Liquid crystal may leak when the LCD is broken. Be careful not to let the fluid go into your eyes and mouth. In the case the fluid touches your body; rinse it off right away with water and soap.

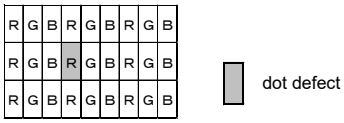
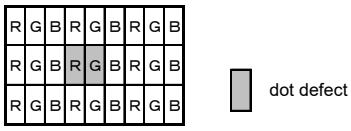
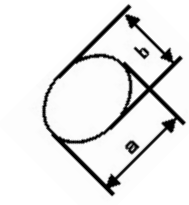
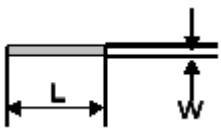
13. Reliability test data

Test item	Test condition	Test time	Judgement
High temp. atmosphere	70°C	240h	Display function : No defect Display quality : No defect Current consumption : No defect
Low temp. atmosphere	-20°C	240h	Display function : No defect Display quality : No defect Current consumption : No defect
High temp. humidity atmosphere	40°C 90% RH	240h	Display function : No defect Display quality : No defect Current consumption : No defect
Temp. cycle	-20°C 0.5h R.T. 0.5h 70°C 0.5h	10cycles	Display function : No defect Display quality : No defect Current consumption : No defect
High temp. operation	70°C	500h	Display function : No defect Display quality : No defect Current consumption : No defect

1) Each test item uses a test LCD only once. The tested LCD is not used in any other tests.
2) The LCD is tested in circumstances in which there is no condensation.
3) The reliability test is not an out-going inspection.
4) The result of the reliability test is for your reference purpose only.
   The reliability test is conducted only to examine the LCD's capability.

14. Visuals specification

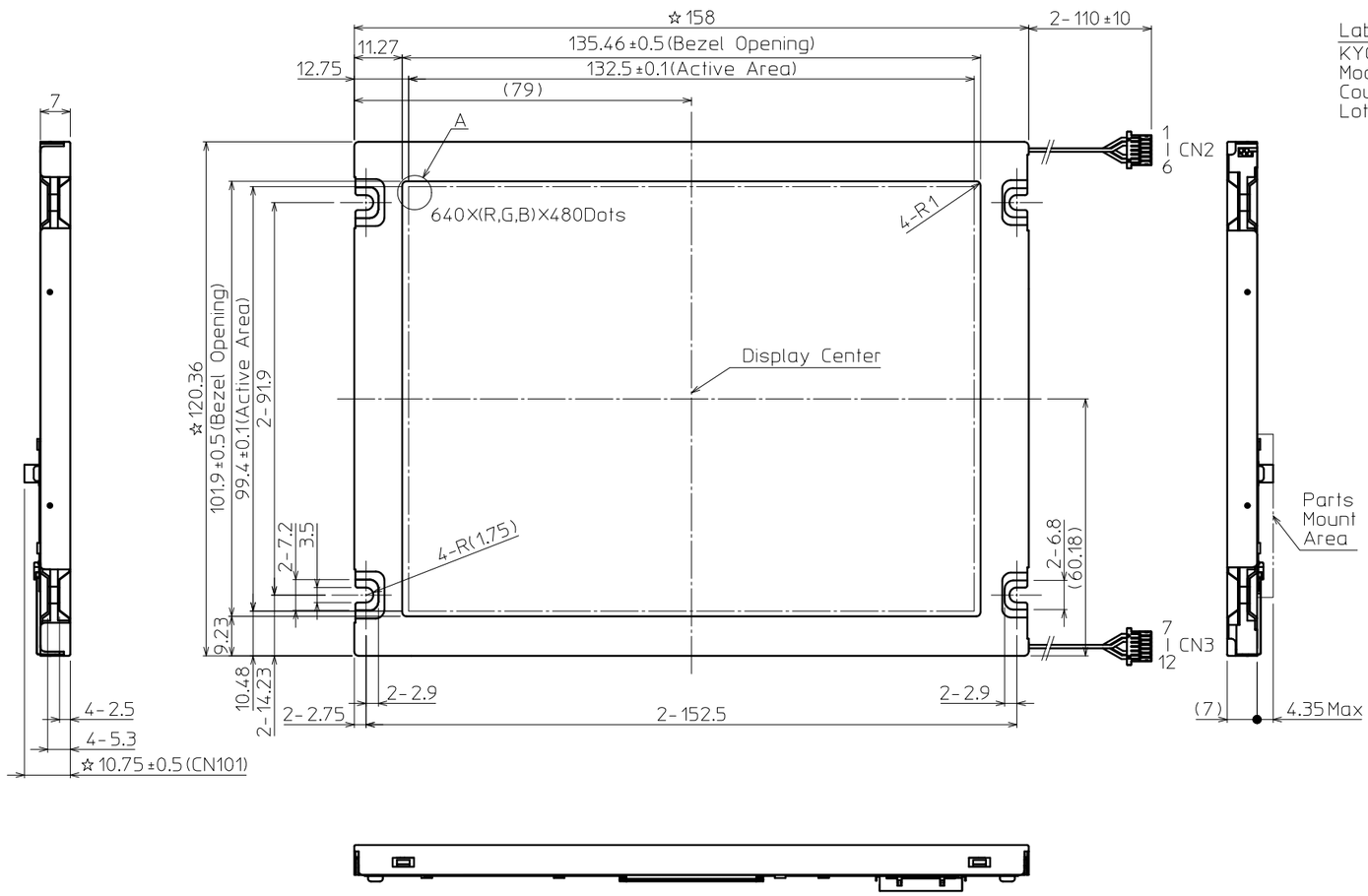
1) Note

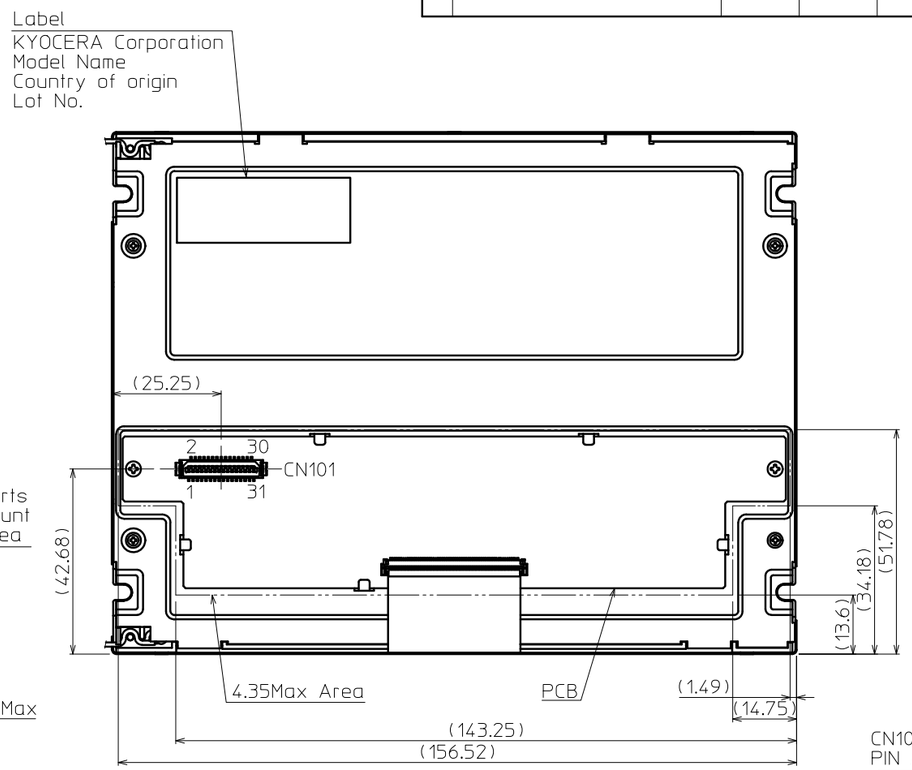
	Note		
General	1. Customer identified anomalies not defined within this inspection standard shall be reviewed by Kyocera, and an additional standard shall be determined by mutual consent. 2. This inspection standard about the image quality shall be applied to any defect within the active area and shall not be applicable to outside of the area. 3. Inspection conditions Luminance : 500 Lux min. Inspection distance : 300 mm. Temperature : 25 ± 5℃ Direction : Directly above		
Definition of inspection item	Dot defect	Bright dot defect	The dot is constantly "on" when power applied to the LCD, even when all "Black" data sent to the screen. Inspection tool: 5% Transparency neutral density filter. Count dot: If the dot is visible through the filter. Don't count dot: If the dot is not visible through the filter. 
		Black dot defect	The dot is constantly "off" when power applied to the LCD, even when all "White" data sent to the screen. Similar size compared to bright dot.
		White dot (Circular/foreign particle)	Pixel works electrically, however, circular/foreign particle makes dot appear to be "on" even when all "Black" data is sent to the screen.
		Adjacent dot	Adjacent dot defect is defined as two or more bright dot defects or black dot defects. 
	External inspection	Bubble, Scratch, Foreign particle (Polarizer, Cell, Backlight)	Visible operating (all pixels "Black" or "White") and non operating.
		Appearance inspection	Does not satisfy the value at the spec.
	Definition of size	Definition of circle size  a: major axis, b: minor axis d = (a + b) / 2	Definition of linear size 

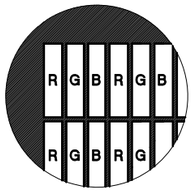
2) Standard

<table>
<tr><th colspan="3">Classification</th><th colspan="2">Inspection item</th><th>Judgement standard</th></tr>
<tr><td rowspan="6">Defect (in LCD glass)</td><td rowspan="3">Single dot</td><td colspan="2">Bright dot defect</td><td>Acceptable number : 7
Bright dot spacing : 5mm or more</td></tr>
<tr><td colspan="2">Black dot defect</td><td>Acceptable number : 7
Bright dot spacing : 5mm or more</td></tr>
<tr><td rowspan="3">Adjacent dot</td><td rowspan="2">2 dots</td><td>Bright dot defect</td><td>Acceptable number : 3</td></tr>
<tr><td>Black dot defect</td><td>Acceptable number : 3</td></tr>
<tr><td colspan="2">3 or more dots</td><td>Acceptable number : 0</td></tr>
<tr><td colspan="2">Total dot defects</td><td colspan="2">Acceptable number : 10 Max</td></tr>
<tr><td colspan="2">Others</td><td colspan="2">White dot, Dark dot (Circle)</td><td>
<table>
<tr><th>Size (mm)</th><th>Acceptable number</th></tr>
<tr><td>0.3 ＜ d ≦ 0.5</td><td>4</td></tr>
<tr><td>0.5 ＜ d ≦ 0.4</td><td>0</td></tr>
</table>
</td></tr>
<tr><td colspan="3" rowspan="5">External inspection (Defect on Polarizer or between Polarizer and LCD glass)</td><td colspan="2">Polarizer (Scratch)</td><td>
<table>
<tr><th>Width (mm)</th><th>Length</th><th>Acceptable number</th></tr>
<tr><td>0.01 ＜W ≦ 0.05</td><td>L ≦ 15</td><td>4</td></tr>
<tr><td>0.01 ＜ W</td><td>15 ＜ L</td><td>0</td></tr>
<tr><td>0.05 ＜ W</td><td>－</td><td>0</td></tr>
</table>
</td></tr>
<tr><td colspan="2">Polarizer (Bubble)</td><td>
<table>
<tr><th>Size (mm)</th><th>Acceptable number</th></tr>
<tr><td>0.3 ＜ d ≦ 0.5</td><td>5</td></tr>
<tr><td>0.5 ＜ d</td><td>0</td></tr>
</table>
</td></tr>
<tr><td colspan="2">Foreign particle (Circular shape)</td><td>
<table>
<tr><th>Size (mm)</th><th>Acceptable number</th></tr>
<tr><td>0.3 ＜ d ≦ 0.5</td><td>5</td></tr>
<tr><td>0.5 ＜ d</td><td>0</td></tr>
</table>
</td></tr>
<tr><td colspan="2">Foreign particle (Linear shape) Scratch</td><td>
<table>
<tr><th>Width</th><th>Length (mm)</th><th>Acceptable number</th></tr>
<tr><td rowspan="2">W ≦ 0.15</td><td>L ≦ 3.0</td><td>4</td></tr>
<tr><td>3.0 ＜ L</td><td>0</td></tr>
<tr><td>0.15 ＜ W</td><td>－</td><td>(According to circular shape)</td></tr>
</table>
</td></tr>
<tr><td colspan="2">Color variation (Mura)</td><td>Not to be significantly visible.
Consultation shall be held as necessary.</td></tr>
</table>

No	Description	Drawn	Checked	Checked	Approved







Detail A
(NTS)

TOLERANCE			
MEASURE	A	B	C
L≤16	±0.1	±0.3	±1
16<L≤63	±0.2	±0.5	±1.5
63<L≤250	±0.3	±0.8	±2
250<L≤500	±0.5	±1.2	±3
500<L	±0.8	±2	±4
ANGLE	±1°	±5°	±10°

Notes:
1.The dimensions with the mark (☆) are
controlled as a particular characteristic.
2.Don't use material which are prohibited by RoHS.
3.CN101:DF9B-31P-1V(32)(HRS)
4.CN2/CN3:SHLP-06V-S-B(JST)
5.Tolerances unless otherwise specified: General Tolerance

CN2 PIN ASSIGNMENT

No.	Symbol
1	ANODE-1(RED)
2	ANODE-2(RED)
3	NC
4	NC
5	CATHODE-1(BLACK)
6	CATHODE-2(BLACK)

CN3 PIN ASSIGNMENT

No.	Symbol
7	ANODE-3(RED)
8	ANODE-4(RED)
9	NC
10	NC
11	CATHODE-3(BLACK)
12	CATHODE-4(BLACK)

CN101
PIN ASSIGNMENT

No.	Symbol
1	GND
2	DCLK
3	HD
4	VD
5	GND
6	R0
7	R1
8	R2
9	R3
10	R4
11	R5
12	GND
13	G0
14	G1
15	G2
16	G3
17	G4
18	G5
19	GND
20	B0
21	B1
22	B2
23	B3
24	B4
25	B5
26	GND
27	DENA
28	VCC
29	VCC
30	TEST
31	REV

Material 材質	Treatment 処理	Approved	Checked	Checked	Drawn	Scale	Title		Year-Month-Day	Size
		'22.08.05 S.Kuramoto		'22.08.03 T.Homma	M.Kageyama	1:1(NTS)	C0650VG65199-BN	KYOCERA	'22.08.02	2
Quantity 製作数	Description; 備考 RoHS 22002-06448						Outline Dimensions	Drawing No.	121A9024500	