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		APPLICABLE GROUP TFT Liquid Crystal Display Group

SPECIFICATION

DEVICE SPECIFICATION FOR

TFT-LCD Module

MODEL No.

LQ283G1TW11

☐ CUSTOMER'S APPROVAL

DATE

BY

PRESENTED

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1. Application

This specification applies to the color 28.3 QSXGA TFT-LCD module LQ283G1TW11.

◎The device listed in these specification sheets was designed and manufactured for use in OA equipment.

◎In case of using the device for applications such as control and safety equipment for transportation(aircraft, trains, automobiles, etc.), rescue and security equipment and various safety related equipment which require higher reliability and safety, take into consideration that appropriate measures such as fail-safe functions and redundant system design should be taken.

◎Do not use the device for equipment that requires an extremely high level of reliability, such as medical equipment for life support.

◎SHARP assumes no responsibility for any damage resulting from the use of the device which does not comply with the instructions and the precautions specified in these specification sheets.

◎Contact and consult with a SHARP sales representative for any questions about this device.

2. Overview

This module is a color active matrix LCD module incorporating amorphous silicon TFT (Thin Film Transistor). The wide vision can be realized in this module with SHARP original technology. It is composed of a color TFT-LCD panel, driver ICs, control circuit, power supply circuit and a back light unit. Graphics and texts can be displayed on a 2560×3×2048 dots panel with about 16.77 million colors (8 bit) by supplying 192 bit data signals(8bit×2pixel×RGB×4), one display enable signal, and one dot clock signal by TMDS, and +12V DC supply voltages for TFT-LCD panel driving and back light. The backlight inverter is built into this module.

3. Mechanical Specifications

Parameter	Specifications	Unit
Display size	71.8 (Diagonal)	cm
	28.3 (Diagonal)	Inch
Active area	560.64 (H)×448.512 (V)	mm
Pixel format	2560 (H)×2048 (V)	Pixel
	(1 pixel=R+G+B dots)	
Pixel pitch	0.219 (H)×0.219 (V)	mm
Pixel configuration	R,G,B vertical stripe	
Display mode	Normally Black	
Unit outline dimensions *1	640 (W)×530 (H)×60(D)	mm
Mass	（15 max）	kg
Surface treatment	Anti-glare and hard-coating 2H	

*1.Note: excluding back light cables.

The thickness of module (D) doesn't contain the projection.

Outline dimensions are shown in Fig.1.

4. Input Terminals and their function

4-1. Interface signals

CN1, CN2

Using connector ：MDR 26Pin 10226-1A10JL (3M.)

Mating connector ：MDR 26Pin 10126-6000EC (3M.)

Using TMDS receiver：SiI161 (Silicon Image co. Ltd)

Mating TMDS transmitter：SiI150,SiI154,SiI160,SiI164(Silicon Image co.Ltd)

CN1

Pin No.	Symbol	Function	Remark
1	A_TX2+	Positive (＋) TMDS differential data input (A port)	TMDS
2	A_TX2-	Negative (－) TMDS differential data input (A port)	TMDS
3	A_TX1 SHIELD	GND	GND
4	A_TX0+	Positive (＋) TMDS differential data input (A port)	TMDS
5	A_TX0-	Negative (－) TMDS differential data input (A port)	TMDS
6	A_TXC SHIELD	GND	GND
7	PRDY	Panel (TFT LCD) Ready Output H: TFT LCD Active L: TFT LCD Inactive (Default)	EIA/TIA-562 Output 【Note】
8	B_TX2+	Positive (＋) TMDS differential data input (B port)	TMDS
9	B_TX2-	Negative (－) TMDS differential data input (B port)	TMDS
10	B_TX1 SHIELD	GND	GND
11	B_TX0+	Positive (＋) TMDS differential data input (B port)	TMDS
12	B_TX0-	Negative (－) TMDS differential data input (B port)	TMDS
13	B_TXC SHIELD	GND	GND
14	A_TX2 SHIELD	GND	GND
15	A_TX1+	Positive (＋) TMDS differential data input (A port)	TMDS
16	A_TX1-	Negative (－) TMDS differential data input (A port)	TMDS
17	A_TX0 SHIELD	GND	GND
18	A_TXC+	Positive (＋) TMDS differential clock input (A port)	TMDS
19	A_TXC-	Negative (－) TMDS differential clock input (A port)	TMDS
20	SRDY	System(Graphic Board) Ready Input H: System Active L: System Inactive (Default)	EIA/TIA-562 Input 【Note】
21	B_TX2 SHIELD	GND	GND
22	B_TX1+	Positive (＋) TMDS differential data input (B port)	TMDS
23	B_TX1-	Negative (－) TMDS differential data input (B port)	TMDS
24	B_TX0 SHIELD	GND	
25	B_TXC+	Positive (＋) TMDS differential clock input (B port)	TMDS
26	B_TXC-	Negative (－) TMDS differential clock input (B port)	TMDS

CN2

Pin No.	Symbol	Function	Remark
1	C_TX2+	Positive (+) TMDS differential data input (C port)	TMDS
2	C_TX2-	Negative (−) TMDS differential data input (C port)	TMDS
3	C_TX1 SHIELD	GND	GND
4	C_TX0+	Positive (+) TMDS differential data input (C port)	TMDS
5	C_TX0-	Negative (−) TMDS differential data input (C port)	TMDS
6	C_TXC SHIELD	GND	GND
7	PDR	Panel (TFT LCD) Ready Output H: vertical (Turn into vertical position) L: horizontal (Default)	EIA/TIA-562 Output
8	D_TX2+	Positive (+) TMDS differential data input (D port)	TMDS
9	D_TX2-	Negative (−) TMDS differential data input (D port)	TMDS
10	D_TX1 SHIELD	GND	GND
11	D_TX0+	Positive (+) TMDS differential data input (D port)	TMDS
12	D_TX0-	Negative (−) TMDS differential data input (D port)	TMDS
13	D_TXC SHIELD	GND	GND
14	C_TX2 SHIELD	GND	GND
15	C_TX1+	Positive (+) TMDS differential data input (C port)	TMDS
16	C_TX1-	Negative (−) TMDS differential data input (C port)	TMDS
17	C_TX0 SHIELD	GND	GND
18	C_TXC+	Positive (+) TMDS differential clock input (C port)	TMDS
19	C_TXC-	Negative (−) TMDS differential clock input (C port)	TMDS
20	BLON	Backlight “ ON” signal H: System Active L: System Inactive (Default)	EIA/TIA-562 Input 【Note】
21	D_TX2 SHIELD	GND	GND
22	D_TX1+	Positive (+) TMDS differential data input (D port)	TMDS
23	D_TX1-	Negative (−) TMDS differential data input (D port)	TMDS
24	D_TX0 SHIELD	GND	GND
25	D_TXC+	Positive (+) TMDS differential clock input (D port)	TMDS
26	D_TXC-	Negative (−) TMDS differential clock input (D port)	TMDS

【Note】PRDY,SRDY,BLON Sequence

PRDY (Panel ready output)“ H” → SRDY(System ready input) “ H” → BLON(Backlight on signal) “ H”

4-2 Power supply for the TFT LCD.

CN3

Using connector ：RP13A-12RC-20PB (HIROSE ELECTRIC CO.LTD.)
Mating connector ：RP13A-12JG-20PC (HIROSE ELECTRIC CO.LTD.)

CN3

Pin No	Symbol	Function	Remark
1	B/L12V	Inverter power supply for Backlight (DC12V)	
2	B/L12V	Inverter power supply for Backlight (DC12V)	
3	B/L12V	Inverter power supply for Backlight (DC12V)	
4	B/L12V	Inverter power supply for Backlight (DC12V)	
5	B/L12V	Inverter power supply for Backlight (DC12V)	
6	B/L12V	Inverter power supply for Backlight (DC12V)	
7	B/L12V	Inverter power supply for Backlight (DC12V)	
8	B/L12V	Inverter power supply for Backlight (DC12V)	
9	B/LGND	Inverter GND for Backlight	
10	B/LGND	Inverter GND for Backlight	
11	B/LGND	Inverter GND for Backlight	
12	B/LGND	Inverter GND for Backlight	
13	B/LGND	Inverter GND for Backlight	
14	B/LGND	Inverter GND for Backlight	
15	B/LGND	Inverter GND for Backlight	
16	B/LGND	Inverter GND for Backlight	
17	GND	GND	
18	GND	GND	
19	VCC12V	+12V Power supply	
20	VCC12V	+12V Power supply	

4-3. Adjustment of Luminance

CN4

Using connector ：S5B-PH-SM3-TB(J.S.T. Co. Ltd.)
Mating connector ：PHR-5(J.S.T. Co. Ltd.)

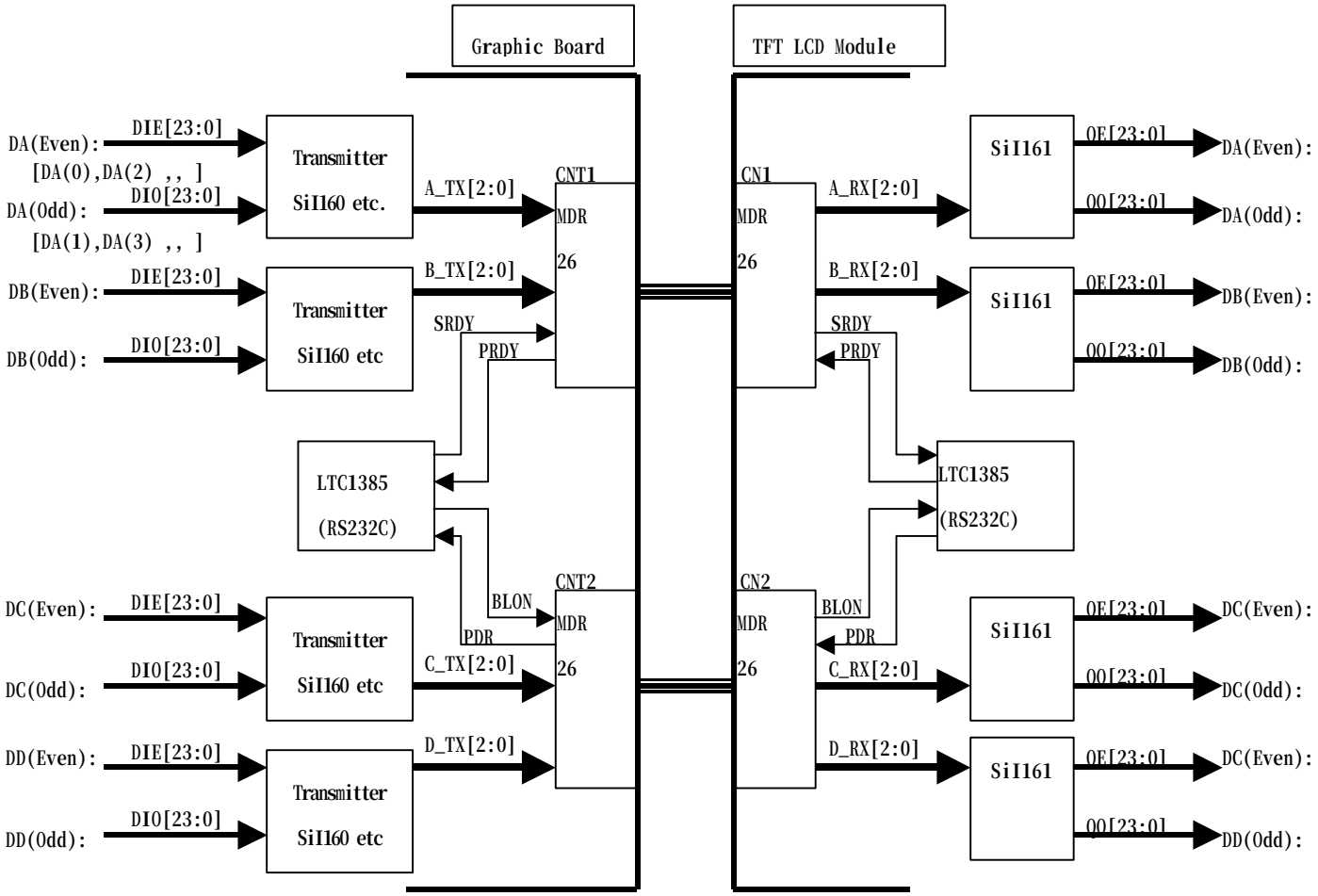
Pin No.	Symbol	Function	Remarks
1	5.0V	Output terminal for output voltage to supply adjusted voltage, Vbr.	
2	Vbr	Dimmer voltage input	
3	Vst	Ararm output of backlight lamp	【Note】
4	GND	GND	
5	GND	GND	

【Note】It is the alarm output terminal under abnormal backlight condition. High voltage output(5.0V) is produced when a lamp is burned out and/or a lamp connecter is opened in one place or more. (But this signal can’ t specify an abnormal spot.)

Normal condition : Vst level is LOW.(GND)

Abnormal condition : Vst level is HIGH.(5.0V)

Interface Block



The table below shows the pin allocation of the pixel data and Panel Link.

the pixel Data	transmitter	receiver
Even B[7:0]	DIE[7:0]	QE[7:0]
Even G[7:0]	DIE[15:8]	QE[15:8]
Even R[7:0]	DIE[23:16]	QE[23:16]
Odd B[7:0]	DIO[7:0]	QO[7:0]
Odd G[7:0]	DIO[15:8]	QO[15:8]
Odd R[7:0]	DIO[23:16]	QO[23:16]

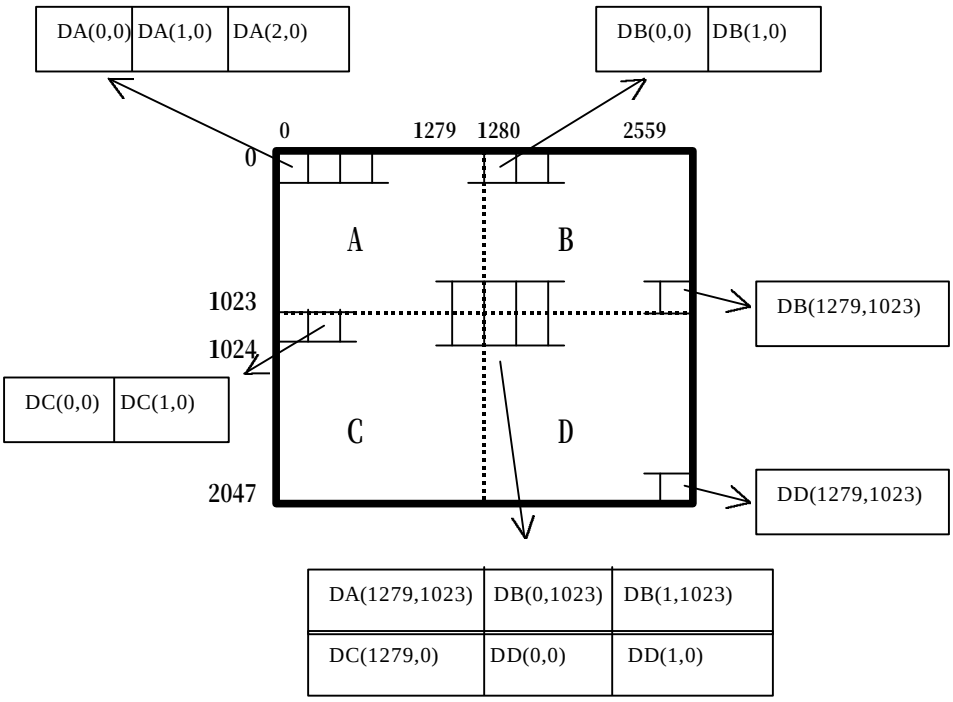
Note: B[7:0] = DIE[7:0] ⇒ B7 = DIE7, B6 = DIE6,⋯, B1 = DIE1, B0 = DIE0

MSB:B7, LSB:B0

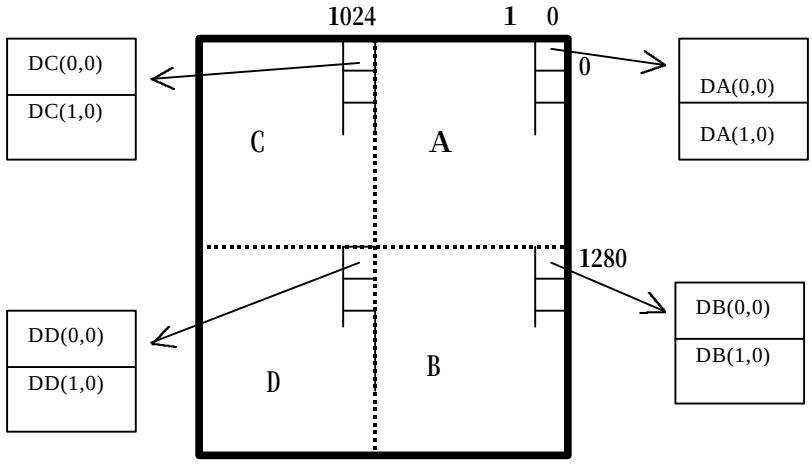
R and G are similar.

Relation between screen and pixel data

1. Horizontal (default) position (PDR = L)



2. Turn to vertical position (PDR = H)



PDR switch is located near close to CN in the backside of TFT module, as shown " SW" in Fig.1. It is normally set at " L" side.

5. Absolute Maximum Ratings

5-1. Module

Parameter	Symbol	Condition	Ratings	Unit	Remark
Storage temperature	Tstg	－	－25 ～ ＋60	℃	【Note1】
Operating temperature (Ambient)	Topa	－	0 ～ ＋40	℃	

【Note1】Humidity：95%RH Max. （Ta≦40℃）

Be careful for electrostatic build up, but no condensation.

In case of using the module mounted in package, inner temperature should be +10℃ or less from ambient temperature.

5-2. TFT-LCD panel and backlight driving

Parameter	Symbol	Condition	Ratings	Unit	Remark
12V power supply voltage	Vcc_12V B/L_12V	Ta=25℃	0 ～ +14.0V	V	

6. Electrical Characteristics

6-1. TFT-LCD panel driving

Ta=25℃

Parameter		Symbol	Min.	Typ.	Max.	Unit	Remark
+12V Power Supply	Input voltage	Vcc_12V	11.4	12.0	12.6	V	【Note1】
	Consumption	Icc	-	1.85	(4.0)	A	【Note2】
Allowable input ripple voltage		V_{RF}	-	-	100	mV_{p-p}	
Differential input voltage		V_{ID}	75	-	1000	mV	
Input leak current		I_O	-10		10	μA	

6-2. Backlight driving

Parameter		Symbol	Min.	Typ.	Max.	Unit	Remark
+12V Power Supply	Input voltage	B/L_12V	11.4	12.0	12.6	V	
	Consumption	Icc	-	12	(20)	A	
Allowable input ripple voltage		V_{RF}	-	-	100	mV_{P-P}	

6-3. Adjustment part of Luminance

Parameter			Symbol	Min.	Typ.	Max.	Unit	Remark
+5V output	Output voltage		Vout	4.9	5.0	5.1	V	【Note3】
	Output current		Iout			(20)		
Adjusted voltage	Input voltage		Vbr	(0)	-	(Vout)	V	
	Input current		Ibr			(1)	mA	
Lamp life time			T_L	50000	-	-	hour	【Note4】
Alarm output	High voltage	VstH	IstH=20μA	4.9	Vout	—	V	Unusual
			IstH=2.6mA	4.6	4.8	Vout	V	
	Low voltage	VstL	IstL= - 20μA		0	0.08	V	Usual
			IstL=-2.6mA		0.15	0.22	V	
	Maximum output current		Ist	-	-	10	mA	

【Note1】

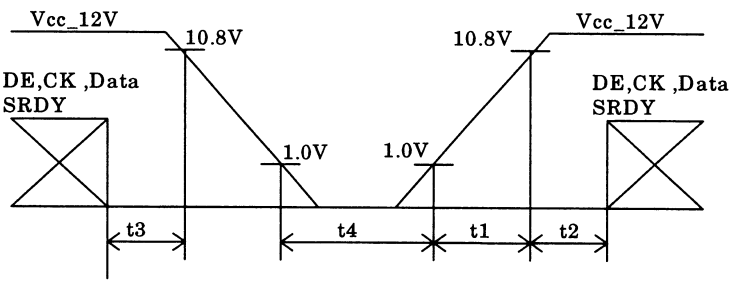
1) Sequence between Vcc_12V and data

0<t1≦60ms

0<t2≦10ms

0≦t3≦1s

t4≧100ms



2) Voltage sag

Vcc(Vcc_12V,B/L_12V):

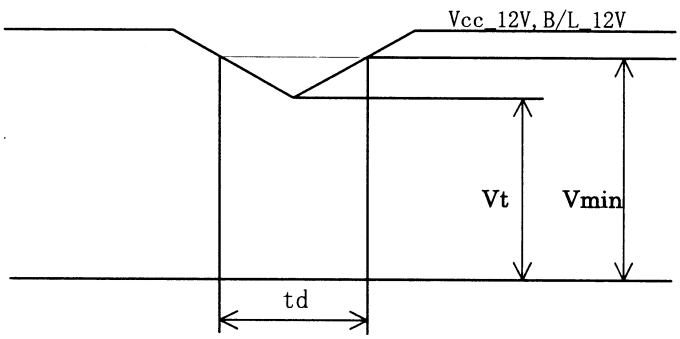
Vmin =11.4V , Vth =9.6V

i . Vth ≦Vcc< Vmin :

td≦20ms

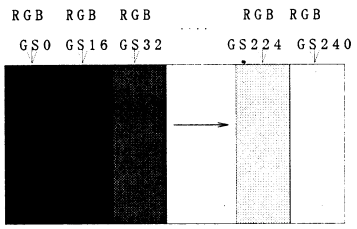
ii . Vcc< Vth :

Refer to *1



*1 When Vcc(Vcc_12V,B/L_12V) goes down to Vth level and below, the module stops operating. Please follow the sequence mentioned in 1) and turn on power supply again.

【Note2】 Measurement pattern of amperage



1） Typical power consumption situation: 16 gray-bar pattern

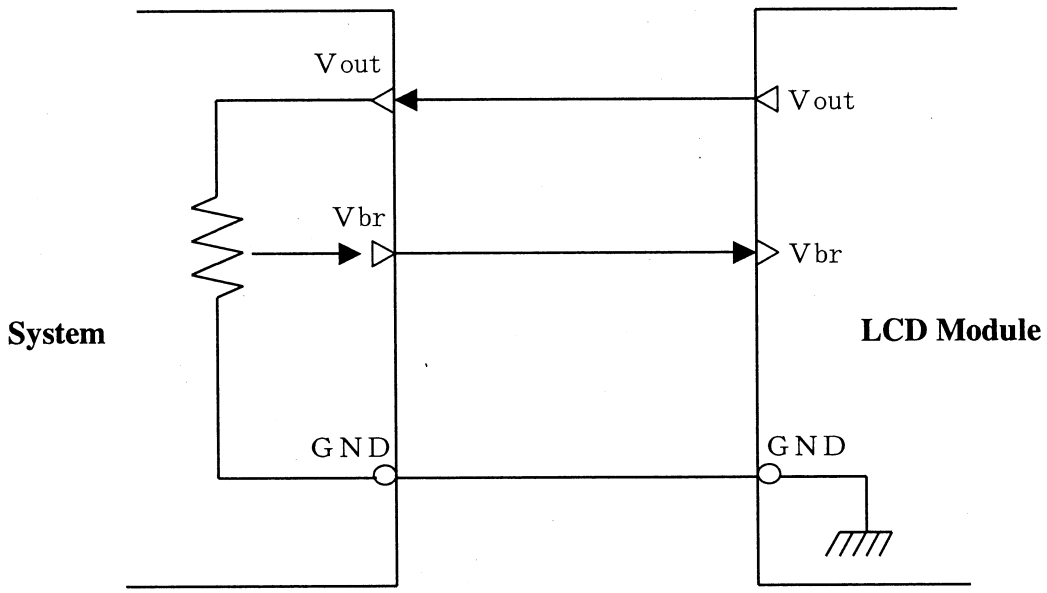
Gray scale: GS(16N)

N=0～15

Explanation of each gray scale, GS(16n) is described below section 8.

【Note3】 Relation between Adjusted voltage Vbr and Display brightness

Adjusted voltage (Vbr)	Min.	◀——▶	Max.
Display brightness	Max. (Dimmer: Max)	◀——▶	Min. (Dimmer: Min)

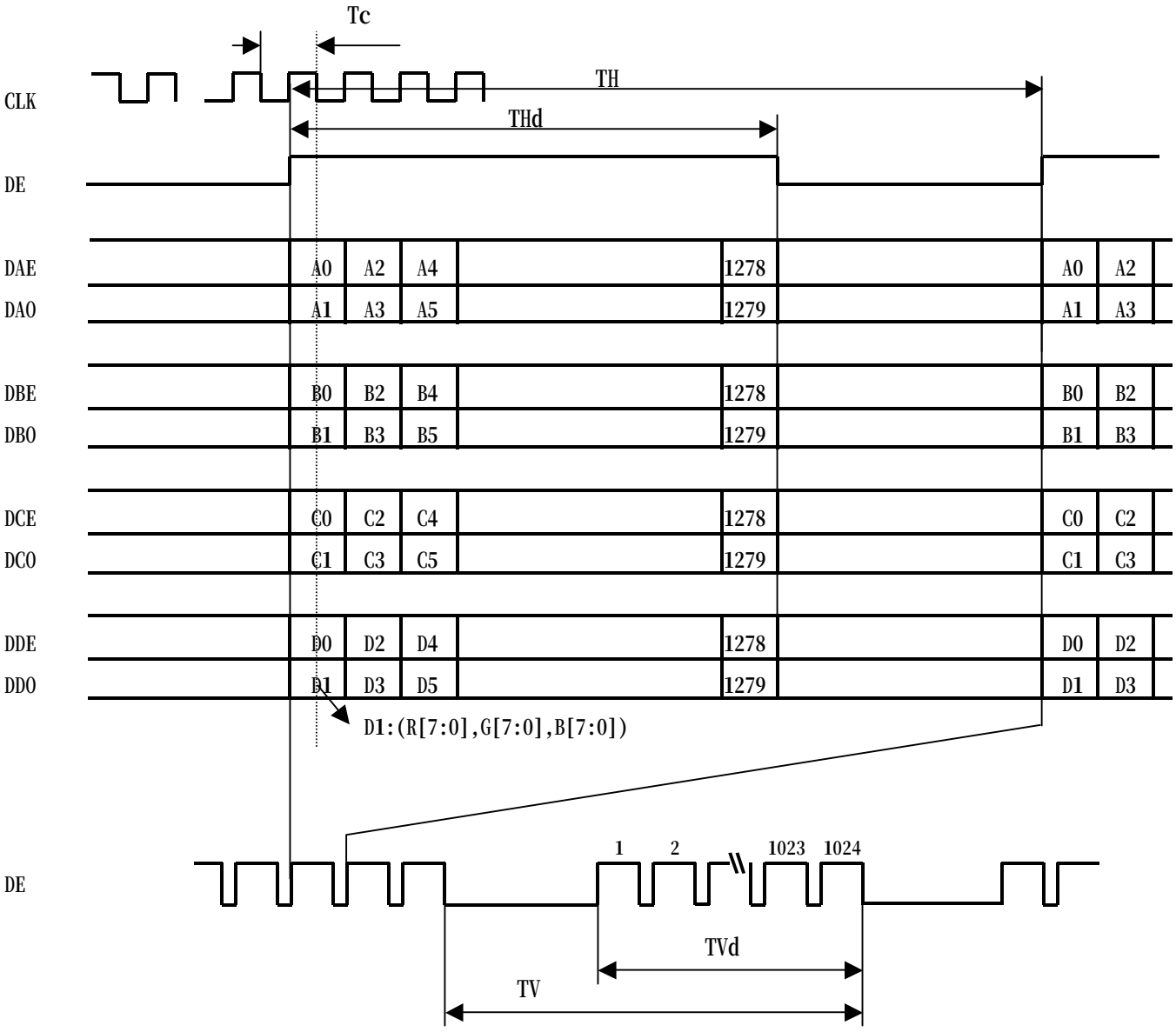


【Note4】 Lamp life time is defined as the time when brightness becomes 50% of the original value under the condition of Ta=25℃ and brightness dimmer maximum.

7. Timing characteristics of input signals

Parameter		Symbol	Min.	Typ.	Max.	Unit	Remark
Clock	Frequency	1/Tc	50	52.1	(55)	MHz	
DE (Data enable signal)	Horizontal period	TH	700	704		Clock	
			12.9	13.5		μs	
	Horizontal period (High)	THd	640	640	640	clock	
	Vertical period	TV	1026	1028		line	【Note1】
				72		Hz	
	Vertical period (High)	TVd	1024	1024	1024	line	

【Note1】 In case of using the long vertical period of DE, the deterioration of display quality such as flicker etc may occur.



8. Input Signals, Basic Display Colors and Gray Scale of Each Color

	Colors & Gray scale	Data signal																											
		Gray Scale	RA0	RA1	RA2	RA3	RA4	RA5	RA6	RA7	GA0	GA1	GA2	GA3	GA4	GA5	GA6	GA7	BA0	BA1	BA2	BA3	BA4	BA5	BA6	BA7
			RB0	RB1	RB2	RB3	RB4	RB5	RB6	RB7	GB0	GB1	GB2	GB3	GB4	GB5	GB6	GB7	BB0	BB1	BB2	BB3	BB4	BB5	BB6	BB7
			RC0	RC1	RC2	RC3	RC4	RC5	RC6	RC7	GC0	GC1	GC2	GC3	GC4	GC5	GC6	GC7	BC0	BC1	BC2	BC3	BC4	BC5	BC6	BC7
			RD0	RD1	RD2	RD3	RD4	RD5	RD6	RD7	GD0	GD1	GD2	GD3	GD4	GD5	GD6	GD7	BD0	BD1	BD2	BD3	BD4	BD5	BD6	BD7
Basic Color	Black	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Blue	–	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	Green	–	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	Cyan	–	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Red	–	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Magenta	–	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	Yellow	–	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	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	1	1	1	1	1	1
Gray Scale of Red	Black	GS0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	⇧	GS1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Darker	GS2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	⇧	↓					↓								↓								↓			
	⇩	↓					↓								↓								↓			
	Brighte	GS253	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	⇩	GS254	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Red	GS255	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Gray Scale of Green	Black	GS0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	⇧	GS1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Darker	GS2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	⇧	↓					↓								↓								↓			
	⇩	↓					↓								↓								↓			
	Brighter	GS253	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	⇩	GS254	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
	Green	GS255	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0
Gray Scale of Blue	Black	GS0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	⇧	GS1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	Darker	GS2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
	⇧	↓					↓								↓								↓			
	⇩	↓					↓								↓								↓			
	Brighter	GS253	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	1	1	1
	⇩	GS254	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1
	Blue	GS255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1

0 : Low level voltage, 1 : High level voltage.

Each basic color can be displayed in 256 gray scales from 8 bit data signals. According to the combination of total 192 bit data signals, the 16.7-million-color display can be achieved on the screen.

9. Optical Characteristics

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit	Remark
Viewing Angle Range	Vertical	θ11	CR≧10	70	85	—	Deg.	【Note 1,4】
		θ12		70	85	—	Deg.	
	Horizontal	θ21, θ22		70	85	—	Deg.	
Contrast ratio		CR	θ=0°	—	350	—	—	【Note 2,4】
Response Time	Rise	τr	θ=0°	—	20	—	ms	【Note 3,4】
	Decay	τd		—	5	—	ms	
Chromaticity of White		Wx	θ=0°	0.283	0.313	0.343	—	【Note 4】
		Wy		0.299	0.329	0.359	—	
Chromaticity of Red		Rx	θ=0°	0.577	0.607	0.637	—	
		Ry		0.309	0.339	0.369	—	
Chromaticity of Green		Gx	θ=0°	0.257	0.287	0.317	—	
		Gy		0.567	0.597	0.627	—	
Chromaticity of Blue		Bx	θ=0°	0.115	0.145	0.175	—	
		By		0.057	0.087	0.117	—	
Luminance of White		Y_L	θ=0° (Max.)	—	225	—	cd/m²	【Note 4】
			θ=0° (Min.)	—	22.5	—		
White Uniformity		δw	θ=0°	—	—	1.25	—	【Note 5】

※The measurement shall be executed 30 minutes after lighting at rating.

The optical characteristics shall be measured in a dark room or equivalent condition with the method shown in Fig.2 below.

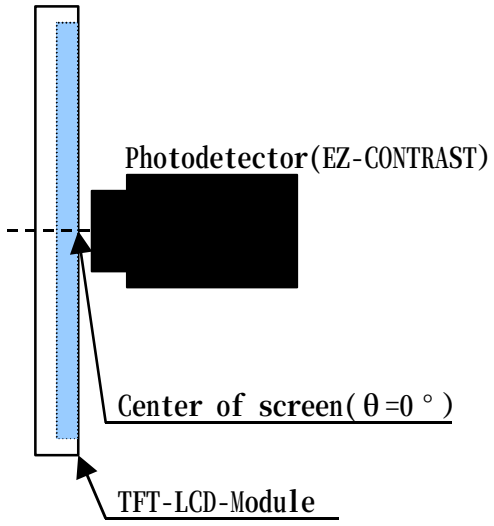


Fig2-1 Viewing angle measurement method

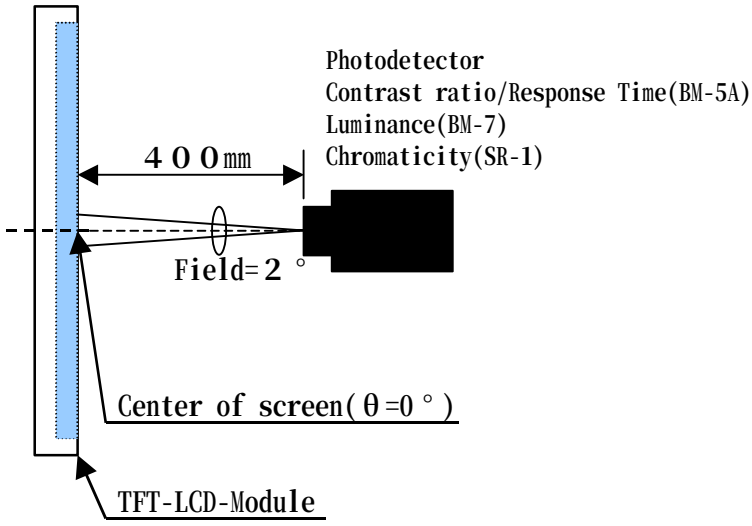
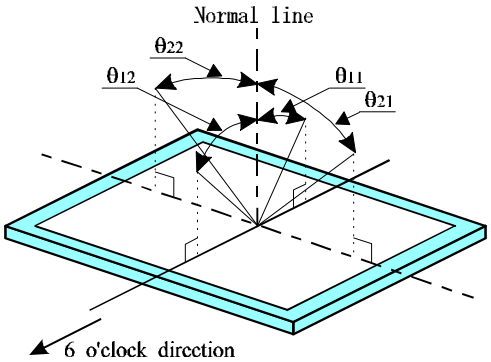


Fig2-2 Luminance/Contrast ratio/Response time/Chromaticity measurement method

Fig2 Optical characteristics measurement method

【Note1】Definitions of viewing angle range:



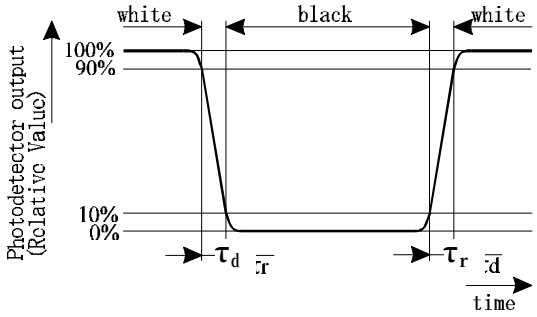
【Note2】Definition of contrast ratio:

The contrast ratio is defined as the following.

$$\text{Contrast Ratio (CR)} = \frac{\text{Luminance (brightness) with all pixels white}}{\text{Luminance (brightness) with all pixels black}}$$

【Note3】Definition of response time:

The response time is defined as the following figure and shall be measured by switching the input signal for "black" and "white".

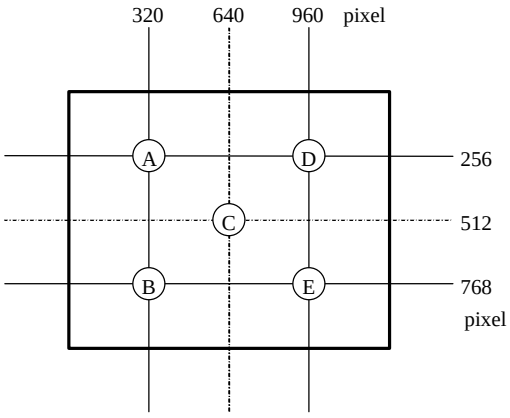


【Note4】This shall be measured at center of the screen.

【Note5】Definition of white uniformity:

White uniformity is defined as the following with five measurements (A～E).

$$\delta_W = \frac{\text{Maximum Luminance of five points (brightness)}}{\text{Minimum Luminance of five points (brightness)}}$$



10. Handling Precautions

a) Be sure to turn off the power supply when inserting or disconnecting the cable from the input connector.
b) Be sure to design the cabinet so that the module can be installed without any extra stress such as warp or twist.
c) Since the fronts polarize is easily damaged, pay attention for handling.
d) The adhesion of water to the module may cause discoloration or spots, wipe it off immediately.
e) In case the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.
f) Since the panel is made of fine wires on glass, it may break or crack if dropped or bumped on hard surface. Handle with care.
g) Since CMOS LSI is used in this module, take care of static electricity and take the human earth into consideration when handling.
h) Make sure the four mounting holes of the module are grounded sufficiently. Take electro-magnetic interference (EMI) into consideration.
i) The module has some printed circuit boards (PCBs) on the back. Be sure to avoid them form any stress or pressure when handling or installing the module; otherwise some of electronic parts on the PCBs may be damaged.
j) Observe all other precautionary requirements in handling components.
k) When some pressure is added onto the module from rear side constantly, it causes display non-uniformity issue, functional defect, etc. So, please avoid such design.
l) When giving a touch to the panel while turning on the power supply, it may cause degradation. In that case, once turn off the power supply, and turn on again after several seconds, and then degradation is disappeared a few seconds after turning on again.
m) When handling LCD modules and assembling them into cabinets, please be noted that long-term storage in the environment of oxidization or deoxidization gas and the use of such materials as reagent, solvent, adhesive, resin, etc. which generate these gasses, may cause corrosion and discoloration of the LCD modules.

11. Shipping condition

a) Maximum number of carton over which can be stacked: (maximum 8 cartons)
b) Maximum quantity in a carton : 1 set
c) Carton size : (751*641*200)
d) Gross weight for 1 set : (TBD)

Packing drawing is shown in Fig. 3.

12. Reliability test items

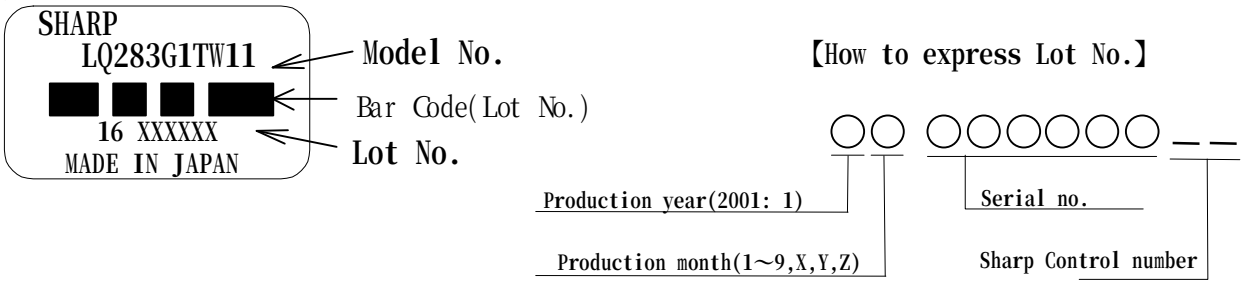
No.	Test item	Conditions
1	High temperature storage test	Ta=60℃ 240h
2	Low temperature storage test	Ta=-25℃ 240h
3	High temperature & high humidity operation test	Ta=40℃ ; 95%RH 240h (No condensation)
4	High temperature operation test	Ta=40℃ 240h (The panel temp. must be less than 60℃)
5	Low temperature operation test	Ta=0℃ 240H
6	Vibration test (non- operating)	Frequency : 10～57Hz/Vibration width (one side) : 0.075mm : 58～500Hz/Gravity : 9.8m/s^2 Sweep time : 11 minutes Test period : 3 hours (1 hour for each direction of X,Y,Z)
7	Shock test (non- operating)	Max. gravity : 196m/s^2 Pulse width : 11ms, sine wave Direction : ±X, ±Y, ±Z, once for each direction.

【Result Evaluation Criteria】

Under the display quality test conditions with normal operation state, these shall be no change that may affect practical display function.

13. Others

1) Lot No. and indication Label:



2) Packing Label

社内品番：(4S) LQ283G1TW11
Bar code (①)
LotNO. :(1T) 2001. 06. 20
Bar code (②)
Quantity:(Q) 1 pcs
Bar code (③)
ユーザ品番 :
シャープ物流用ラベルです。

① Model No. (LQ283G1TW11)

② Lot No. (Date)

③ Quantity

3) Adjusting volume have been set optimally before shipment, so do not change any adjusted value. If adjusted value is changed, the specification may not be satisfied.

4) Disassembling the module can cause permanent damage and should be strictly avoided.

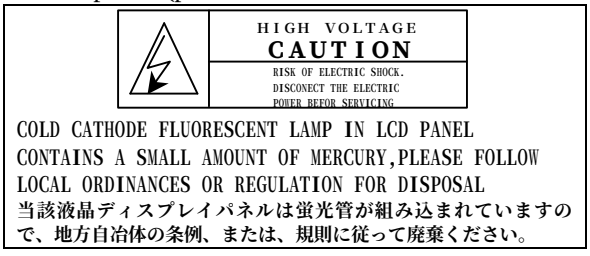
5) Please be careful since image retention may occur when a fixed pattern is displayed for a long time.

6) The chemical compound which causes the destruction of ozone layer is not being used.

7) Warning of mercury and material information of LPG(Light Pipe Guide) are labeled on the back of the module.

MATERIAL INFORMATION
＞DIFFUSER：PMMA＜

8)Cold cathode fluorescent lamp in LCD PANEL contains a small amount of mercury, Please follow local ordinances or regulations for disposal. (put on the back of the module. Size: 63×25.5mm)



9) When any question or issue occurs, it shall be solved by mutual discussion.

◎ Carton storage condition

Temperature : 0℃ to 40℃

Humidity : 95%RH or less

Reference condition : 20℃ to 35℃ , 85%RH or less (summer)

: 5℃ to 15℃ , 85%RH or less (winter)

・the total storage time (40℃,95%RH) : 240H or less

Sunlight : Be sure to store in unpacked condition or at dark room to avoid direct sunlight.

Atmosphere: : Never leave in a corrosive atmosphere and/or an area that volatile liquids are generated.

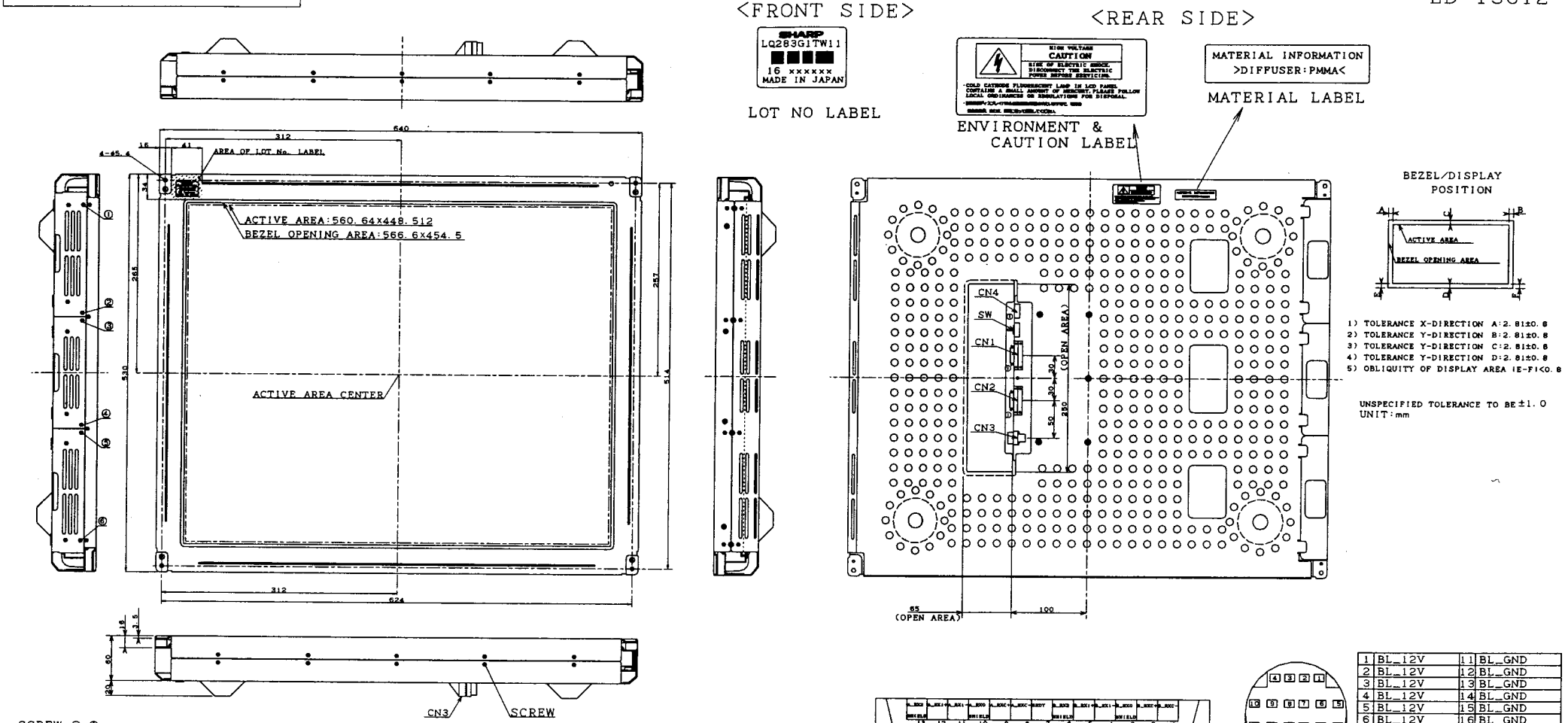
Cautions as to condensation:

- Do not put the carton directly on the floor. Be sure to keep on palette or stand. Also, to keep the ventilation of the bottom of pallet/stand well, be sure to place in the same direction properly.
-Be sure to keep away from the wall of warehouse.
- Please take care of ventilation in warehouse by using ventilation system.
- Control the ambient temperature to avoid sudden temperature change.

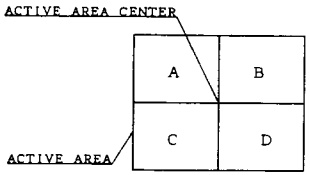
Storage period : 1 year, in the above conditions.

TENTATIVE

LD-13612-19

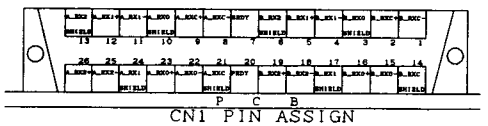


SCREW ①~⑥
for backlight unit exchange
tighten torque:2.0±0.2Kgf·cm
SCREW HEAD :convex 3mmMAX

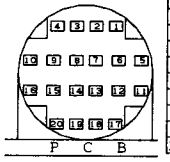


ZONE OF
ACTIVE AREA

for RGB SIGNAL
CN1(ZONE A/B):10226-1A10JL(3M)
CN2(ZONE C/D):10226-1A10JL(3M)
for POWER SUPPLY
CN3:RP13A-12RC-20PB(HIROSE)
for LUMINANCE ADJSTMENT
CN4:S3B-PH-SM3-TB(JST)

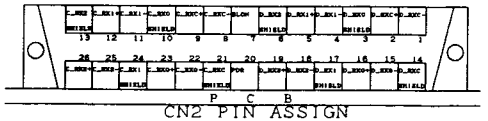


CN1 PIN ASSIGN



1	BL_12V	11	BL_GND
2	BL_12V	12	BL_GND
3	BL_12V	13	BL_GND
4	BL_12V	14	BL_GND
5	BL_12V	15	BL_GND
6	BL_12V	16	BL_GND
7	BL_12V	17	Vcc_GND
8	BL_12V	18	Vcc_GND
9	BL_GND	19	Vcc_12V
10	BL_GND	20	Vcc_12V

CN3 PIN ASSIGN



CN2 PIN ASSIGN

1	5.0V
2	Vbr
3	Vst
4	GND
5	GND

CN4 PIN ASSIGN

Fig1. LQ283G1TW11 MODULE OUTLINE

LD-13612-20

TENTATIVE

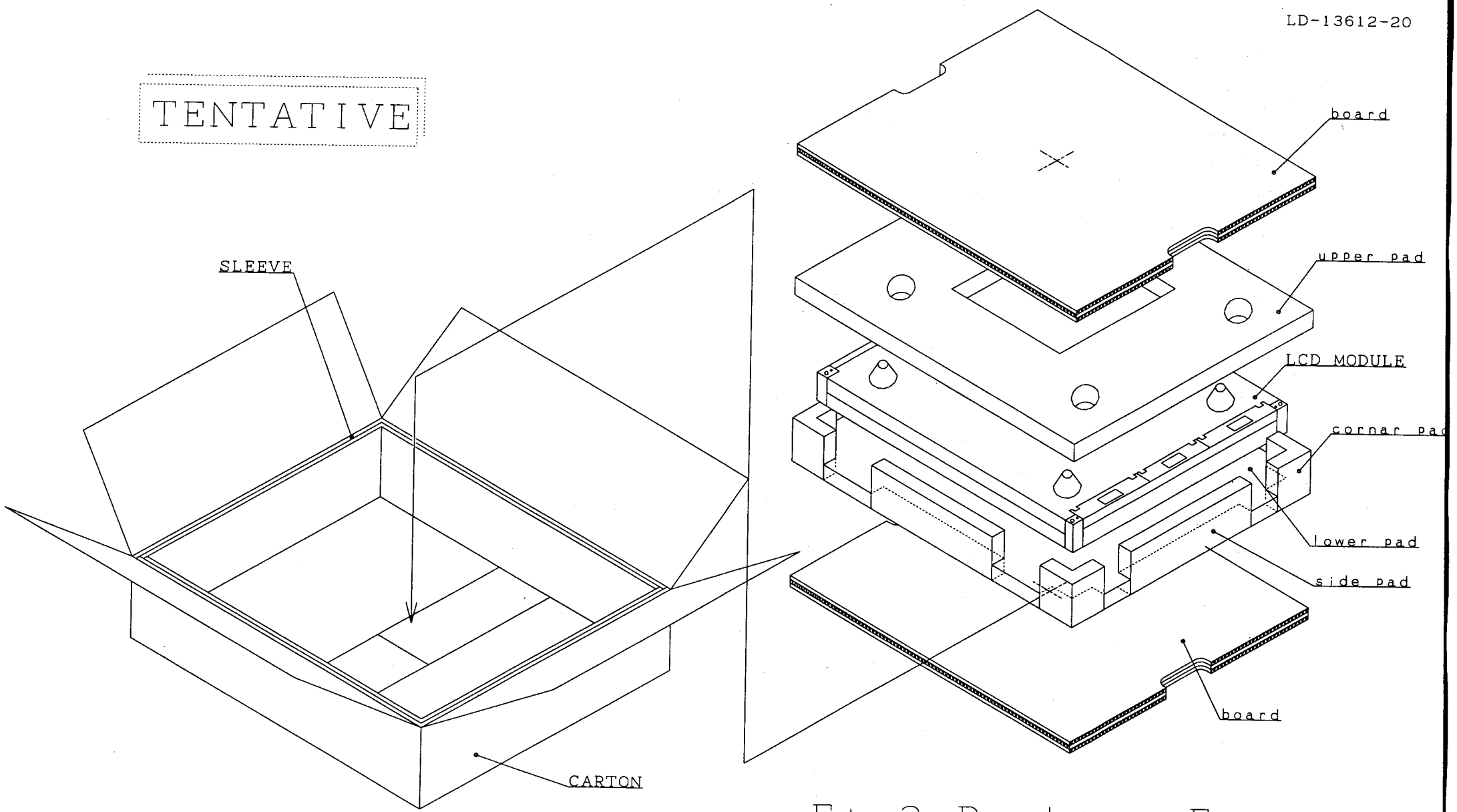


Fig3. Packing Form