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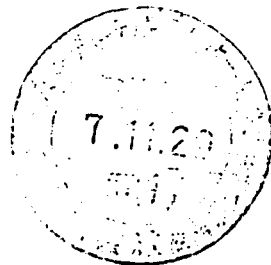
DEVICE SPECIFICATION for
 Passive Matrix COLOR LCD Module
 (640×480 dots)

Model No.
LM64C391

CUSTOMER'S APPROVAL

DATE _____

BY _____



PRESENTED
 BY For J. Inoue
 Y. Inoue
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 ENGINEERING DEPARTMENT II
 DUTY PANEL DEVELOPMENT CENTER
 NARA LIQUID CRYSTAL DISPLAY GROUP
 SHARP CORPORATION

3. Mechanical Specifications

Table 1

Parameter	Specifications	Unit
Outline dimensions	271.5±0.5(W)×199.5±0.5(H)×10MAX(D)	mm
Effective viewing Area	234.4(W)×176.8(H)	mm
Display format	640(W)×480(H) full dots	—
Dot size	0.095×RGB(W)×0.335(H)	mm
Dot spacing	0.025	mm
*1 Base color	Normally black *2	—
Weight	Approx. 670	g

*1 Due to the characteristics of the LC material, the colors vary with environmental temperature.

*2 Negative-type display

Display data "H" : ON → transmission

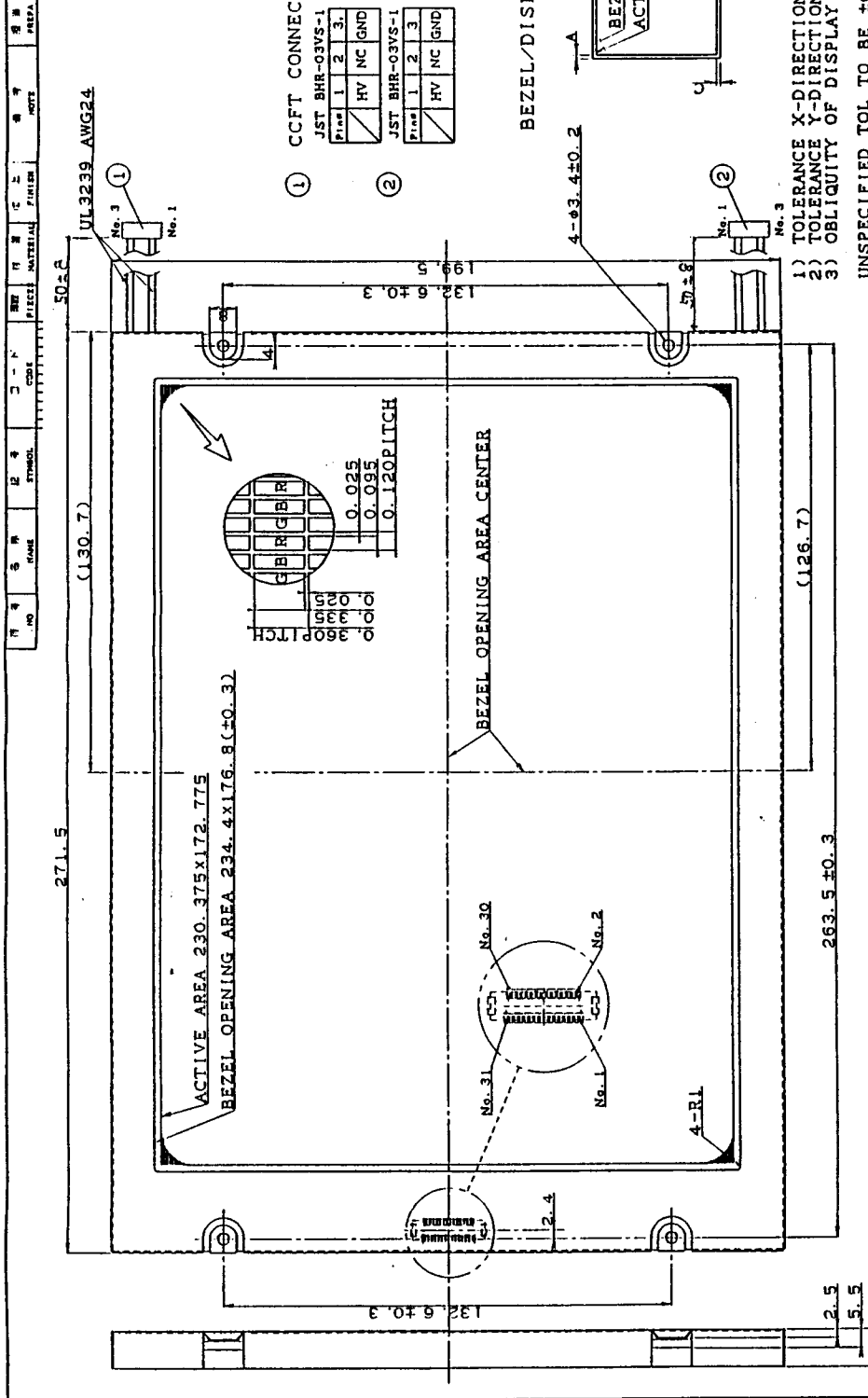
Display data "L" : OFF → light isolation

4. Absolute Maximum Ratings

4-1 Electrical absolute maximum ratings

Table 2

Parameter	Symbol	MIN.	MAX.	Unit	Remark
Supply voltage (Logic)	$V_{DD}-V_{SS}$	0	6.0	V	Ta=25 °C
Input voltage	V_{IN}	-0.3	$V_{DD}+0.3$	V	Ta=25 °C



- 1) TOLERANCE X-DIRECTION A: 2.0 ± 0.8
- 2) TOLERANCE Y-DIRECTION B: 2.0 ± 0.8
- 3) OBLIQUITY OF DISPLAY AREA IC-DI < 0.8

UNSPECIFIED TOL TO BE ± 0.5

品名 (PART NAME)	数量 (QTY)	単位 (UNIT)	仕様 (SPEC)	備考 (REMARKS)
液晶モジュール (LCD MODULE)	1	個 (PCS)	LMG4C391	
ベゼル (BEZEL)	1	個 (PCS)		
CCFTコネクタ (CCFT CONNECTOR)	2	個 (PCS)		

LCD MODULE OUTLINE DIMENSIONS	
項目 (ITEM)	仕様 (SPEC)
外形寸法 (OUTLINE DIMENSIONS)	640xR.G. x Bx480DOTS
ドットピッチ (DOT PITCH)	1/240 DUTY
製造年月日 (MANUFACTURE DATE)	1995. 10. 27
納入先 (CUSTOMER)	SHARP CORPORATION

Excluded the allowance of deformation
 INTERFACE CONNECTOR

DF98-31-1V(HIROSE)

PIN LAYOUT (31pins)

Pin	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
DL4VSS	DL5	YD	DL6	LP	DL7	VSS	VSS	XC	DL0	VCC	DL1	VDD	VSS		
18	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
VDD	DL2	DL3	NC	VSS	DL4	DL5	DL6	DL7	VSS	DL8	DL9	DL10	VSS	DL11	VDD

5-2 Interface signals

○LCD

Table 5

Pin No	Symbol	Description	Level
1	DL4	Display data signal (Lower)	H(ON), L(OFF)
2	V _{SS}	Ground potential	—
3	DL5	Display data signal (Lower)	H(ON), L(OFF)
4	YD	Scan start-up signal	"H"
5	DL6	Display data signal (Lower)	H(ON), L(OFF)
6	LP	Input data latch signal	"H"→"L"
7	DL7	Display data signal (Lower)	H(ON), L(OFF)
8	V _{SS}	Ground potential	—
9	V _{SS}	Ground potential	—
10	XCK	Data input clock signal	"H"→"L"
11	DLO	Display data signal (Lower)	H(ON), L(OFF)
12	V _{CON}	Contrast adjust voltage	—
13	DL1	Display data signal (Lower)	H(ON), L(OFF)
14	V _{DD}	Power supply for logic and LCD (+5V)	—
15	V _{SS}	Ground potential	—
16	V _{DD}	Power supply for logic and LCD (+5V)	—
17	DL2	Display data signal (Lower)	H(ON), L(OFF)
18	DISP	Display control signal	H(ON), L(OFF)
19	DL3	Display data signal (Lower)	H(ON), L(OFF)
20	NC	—	—
21	V _{SS}	Ground potential	—
22	DU3	Display data signal (Upper)	H(ON), L(OFF)
23	DU4	Display data signal (Upper)	H(ON), L(OFF)
24	DU2	Display data signal (Upper)	H(ON), L(OFF)
25	DU5	Display data signal (Upper)	H(ON), L(OFF)
26	DU1	Display data signal (Upper)	H(ON), L(OFF)
27	V _{SS}	Ground potential	—
28	DU0	Display data signal (Upper)	H(ON), L(OFF)
29	DU6	Display data signal (Upper)	H(ON), L(OFF)
30	V _{SS}	Ground potential	—
31	DU7	Display data signal (Upper)	H(ON), L(OFF)

○CCFT

Pin No	Symbol	Description	Level
1	HV	High voltage lineal (from Inverter)	—
2	NC	—	—
3	GND	Ground line (from Inverter)	—

NOTE) Pin No. and its location are shown in Fig.10.

○LCD

Used connector:DF9B-31P-1V (HIROSE)

Mating connector:DF9B-31S-1V (HIROSE)

○CCFT

Used connector:BHR-03VS-1 (JST)

Mating connector:SM02(8.0)B-BHS (JST)

Except above connector shall be out of guaranty