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APPROVED BY:		TOTAL PAGE : 8
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CUSTOMER ACCEPTANCE SPECIFICATIONS

MODEL NO. :

EW 50088 YLY

FOR MESSRS :

CUSTOMER'S APPROVAL

DATE :

BY :

**EMERGING DISPLAY
TECHNOLOGIES CORPORATION**

MODEL NO. EW50088YLY	VERSION 2
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RECORDS OF REVISION	DOC . FIRST ISSUE MAR.19,2001
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DATE	REVISED PAGE NO.	SUMMARY
AUG.15,2002	1	2. MECHANICAL SPECIFICATIONS ADD (10) EW50088YLY = EW24D33YLY + REGULATED COMPONENTS

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1. GENERAL SPECIFICATIONS

1.1 GENERAL SPECIFICATIONS

PLEASE REFER TO :

CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS :

EU-002A

1.2 APPLICATION NOTES FOR CONTROLLER : T6963C

PLEASE REFER TO :

CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS :

EU-T6963C

1.3 THIS INDIVIDUAL SPECIFICATION IS PRIOR TO GENERAL SPECIFICATIONS .

2. MECHANICAL SPECIFICATIONS

- (1) NUMBER OF DOTS ----- 240W * 128H DOTS
- (2) MODULE SIZE ----- 144.0W * 104.0H * 17.0D(max) mm
- (3) EFFECTIVE AREA ----- 114.0W * 64.0H mm
- (4) ACTIVE AREA ----- 107.97W * 57.57H mm
- (5) DOT SIZE ----- 0.42W * 0.42H mm
- (6) DOT PITCH ----- 0.45W * 0.45H mm
- (7) LCD TYPE ----- STN, YELLOW-GREEN, TRANSFLECTIVE
- (8) DRIVING METHOD ----- 1 / 128 DUTY MULTIPLEX DRIVE
- (9) BACKLIGHT ----- LED , COLOR:YELLOW-GREEN
- (10) EW50088YLY = EW24D33YLY + REGULATED COMPONENTS

3. ABSOLUTE MAXIMUM RATINGS

3.1 ELECTRICAL ABSOLUTE MAXIMUM RATINGS .

PARAMETER	SYMBOL	MIN .	MAX .	UNIT	REMARK
POWER SUPPLY FOR LOGIC	VDD – VSS	0	6.5	V	
INPUT VOLTAGE	VI	VSS	VDD	V	
STATIC ELECTRICITY	—	—	100	V	NOTE (1)
LED POWER DISSIPATION	PD	—	10.3	W	
LED FORWARD CURRENT	IF	—	2250	mA	
LED REVERSE VOLTAGE	VR	—	8	V	

NOTE (1) : TEST METHOD AND CONDITIONS :
AFTER CHARGING UP 200 PF CAPACITOR BY STATED VOLTAGE ,
THE CAPACITOR IS CONNECTED WITH INTERFACE PINS OF THE
MODULE .

3.2 ENVIRONMENTAL ABSOLUTE MAXIMUM RATINGS .

I T E M	OPERATING		STORAGE		REMARK
	MIN .	MAX .	MIN .	MAX .	
AMBIENT TEMPERATURE	-20 °C	70 °C	-30 °C	80 °C	NOTE (2), (3)
HUMIDITY	—	85 % RH	—	85 % RH	WITHOUT CONDENSATION
VIBRATION	—	2.45 m/s ² (0.25 G)	—	11.76 m/s ² (1.2 G)	10~100 HZ XYZ DIRECTIONS 1 Hr . EACH
SHOCK	—	29.4 m/s ² (3 G)	—	490.0 m/s ² (50 G)	1 Mseconds XYZ DIRECTIONS 1 TIME EACH
CORROSIVE GAS	NOT ACCEPTABLE		NOT ACCEPTABLE		

NOTE (2) : Ta AT -30°C : 48HR MAX .

80°C : 168HR MAX .

NOTE (3) : BACKGROUND COLOR CHANGES SLIGHTLY DEPENDING ON AMBIENT
TEMPERATURE THIS PHENOMENON IS REVERSIBLE .

4. ELECTRICAL CHARACTERISTICS

Ta = 25 °C

VDD = 5.0 V

PARAMETER	SYMBOL	CONDITION	MIN .	TYP .	MAX .	UNIT
POWER SUPPLY VOLTAGE FOR LOGIC	VDD - VSS	—	4.75	5.0	5.25	V
INPUT VOLTAGE NOTE (1)	VIH	H LEVEL	2.2	—	—	V
	VIL	L LEVEL	—	—	0.8	V
OUTPUT VOLTAGE NOTE (1)	VOH	H LEVEL	2.4	—	VCC	V
	VOL	L LEVEL	0	—	0.4	V
POWER SUPPLY CURRENT FOR LOGIC NOTE (2)	IDD	VDD - VSS = 5.0 V	—	17.5	—	mA
CLOCK OSCILLATION FREQUENCY	f _{osc}	—	—	5	—	MHZ
LED FORWARD VOLTAGE	VF	IF = 900 mA	—	4.2	4.6	V
LED FORWARD CURRENT	IF	—	—	900	—	mA
LED REVERSE CURRENT	IR	VR = 8V	—	—	0.2	mA

NOTE (1): APPLIED TO TERMINALS FS, CE, \overline{WR} , \overline{RD} , C/D, DB0 ~ DB7, \overline{RES} , MD2.

NOTE (2): THE DISPLAY PATTERN IS ALL "OFF" / "ON".

NOTE (3): RECOMMENDED LCD DRIVING VOLTAGE MAY FLUCTUATE ABOUT $\pm 1.0V$ BY EACH MODULE.

5. OPTICAL CHARACTERISTICS

Ta = 25 °C

VDD = 5.0 V

I T E M	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	NOTE	
VIEWING AREA	$\varnothing 2 - \varnothing 1$	$K \geq 1.4$	40	—	—	deg.	1	
CONTRAST RATIO	K	$\varnothing = 10^\circ \theta = 0^\circ$	—	5	—	—	1	
RESPONSE TIME	tr (rise)	$\varnothing = 10^\circ$ $\theta = 0^\circ$	Ta = -20°C	—	2886	—	ms	1
			Ta = 25°C	—	259	—		
			Ta = 70°C	—	156	—		
	tf (fall)		Ta = -20°C	—	2193	—		
			Ta = 25°C	—	177	—		
			Ta = 70°C	—	84	—		
THE BRIGHTNESS OF BACK-LIGHT	L	IF =900 mA	—	30	—	cd/m ²	2	
			—	65	—		3	
PEAK EMISSION WAVELENGTH	λP	IF = 900 mA	—	572	—	nm	1	

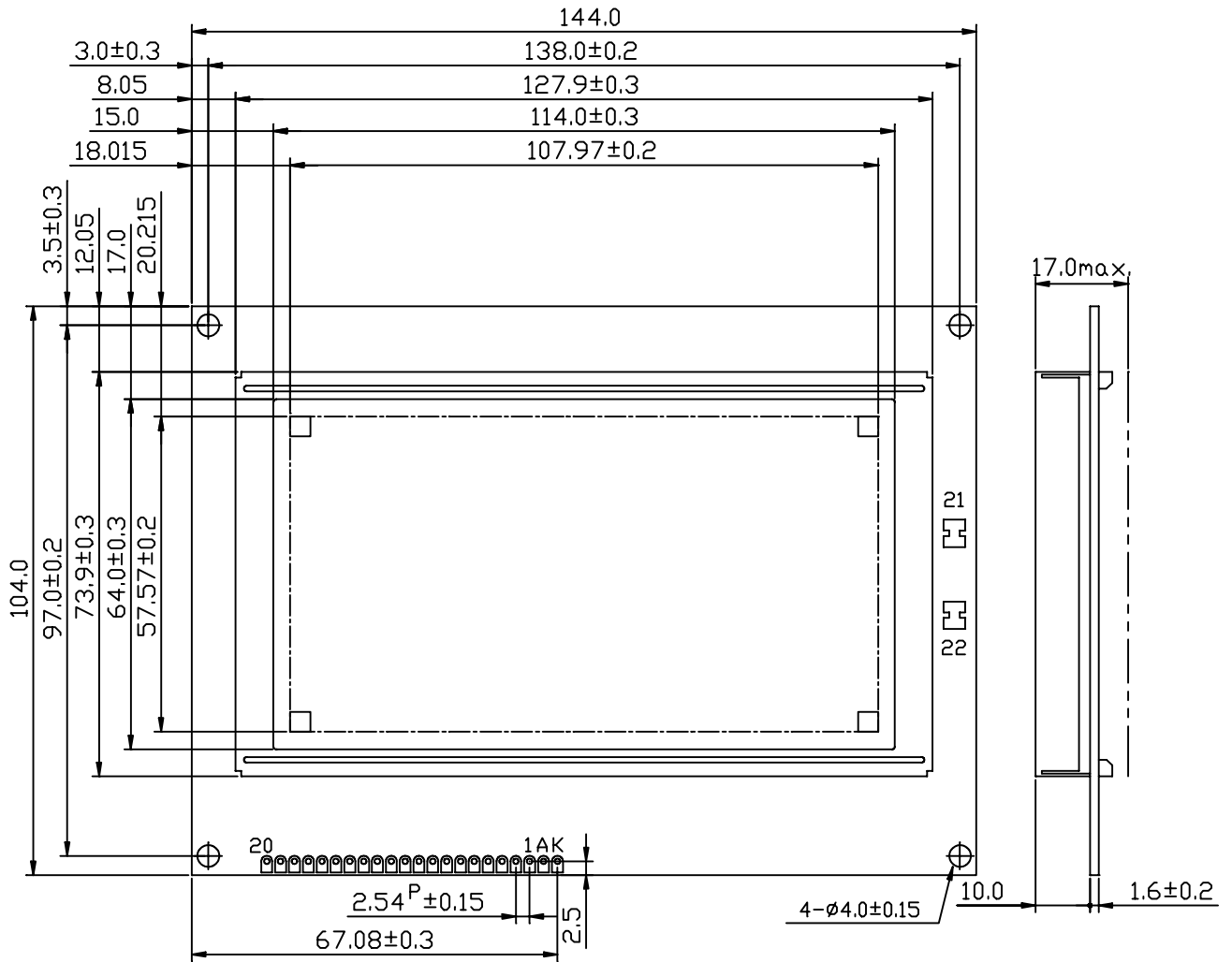
NOTE (1) : PLEASE REFER TO :
CUSTOMER ACCEPTANCE STANDARD SPECIFICATIONS.

EU - 002 A

NOTE (2) : POLARIZER MODE : TRANSFLECTIVE

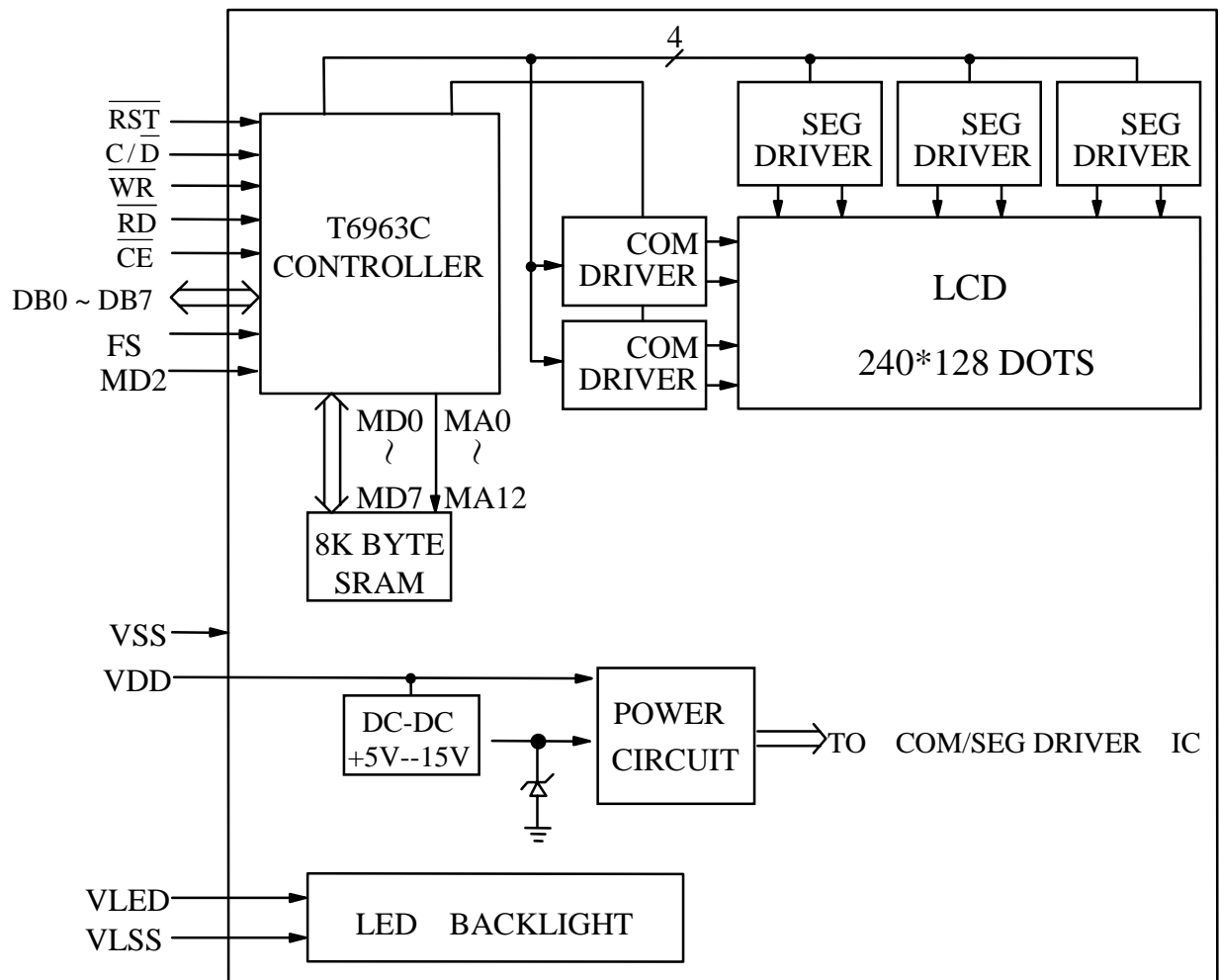
NOTE (3) : POLARIZER MODE : TRANSMISSIVE

6. OUTLINE DIMENSION

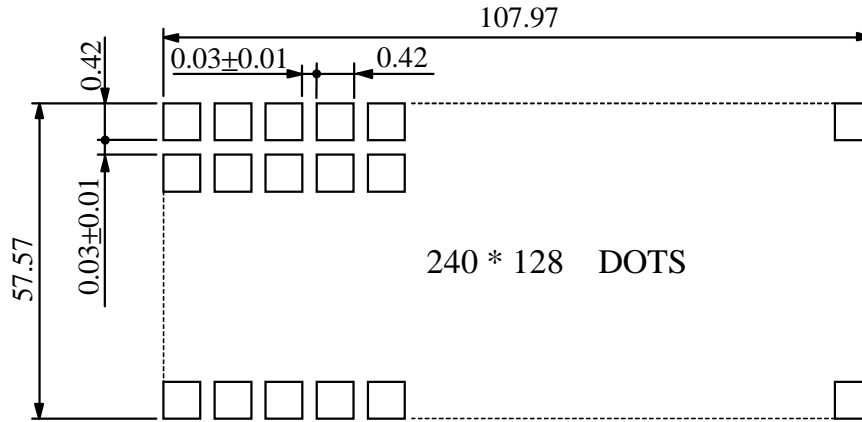


UNIT: mm
SCALE: NTS
NOT SPECIFIED TOLERANCE IS ±0.5mm

7. BLOCK DIAGRAM



8. DETAIL DRAWING OF DOT MATRIX



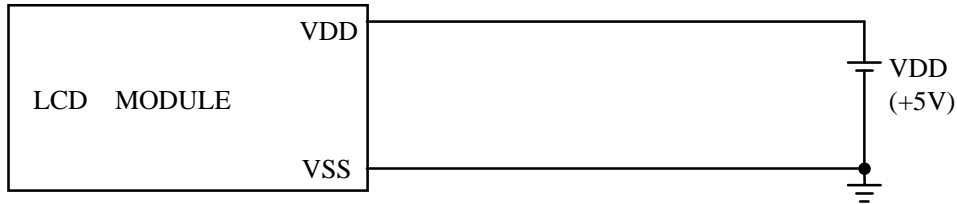
UNIT : mm
SCALE : NTS
NOT SPECIFIED TOLERANCE IS ± 0.1

9. INTERFACE SIGNALS

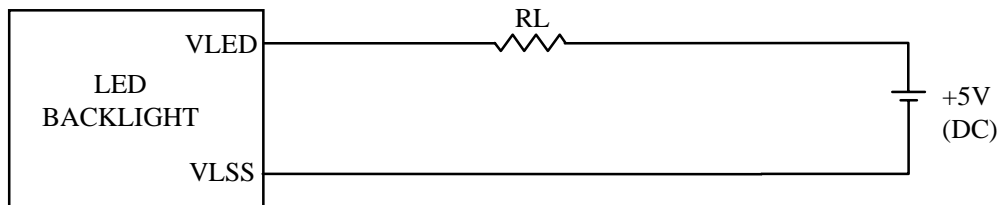
PIN NO	SYMBOL	LEVEL	FUNCTION
1	VSS	—	GROUND
2	VDD	—	POWER SUPPLY FOR LOGIC CIRCUIT
3	NC	—	NO CONNECTION
4	C/ \bar{D}	H/L	\overline{WR} = "L", C/ \bar{D} = "H" : COMMAND WRITE C/ \bar{D} = "L" : DATA WRITE \overline{RD} = "L", C/ \bar{D} = "H" : COMMAND READ C/ \bar{D} = "L" : DATA READ
5	\overline{RD}	L	DATA READ
6	\overline{WR}	L	DATA WRITE
7 14	DB0 DB7	H/L	DATA BUS LINE
15	\overline{CE}	L	CHIP SELECTION
16	\overline{RST}	L	RESET
17	NC		NO CONNECTION
18	MD2	H/L	COLUMNS SELECTION : "H" : 32 COLUMNS "L" : 40 COLUMNS
19	FS	H/L	SELECT : "H" : 6* 8 PIXEL/FONT "L" : 8* 8 PIXEL/FONT
20	NC	—	NO CONNECTION
A	VLED	—	POWER SUPPLY FOR LED BACKLIGHT (ANODE)
K	VLSS	—	POWER SUPPLY FOR LED BACKLIGHT (CATHODE)
21	VLED	—	POWER SUPPLY FOR LED BACKLIGHT (ANODE)
22	VLSS	—	POWER SUPPLY FOR LED BACKLIGHT (CATHODE)

10. POWER SUPPLY

10.1 POWER SUPPLY FOR LCM



10.2 POWER SUPPLY FOR LED BACK - LIGHT



RECOMMENDED RESISTOR $RL = 0.7 \sim 1.5 \Omega$, (CONTROLLER BY USER)

10.3 TIMING OF POWER SUPPLY AND INTERFACE SIGNAL

