AND064VT8-HB-LED
High Bright 6.4" TFT LCD
LCD Color Module

The AND064VT8-HB-LED is a compact full color TFT LCD module, that is suitable for computer peripheral, industrial meter, image communication and multi-media. This device consists of an amorphous silicon TFT LCD panel with 24 LED B/L that has 640 x 480 pixels on a 6.4 inch diagonal screen.

Features
• Compatible with VGA-480, VGA-400, VGA-350 mode
• Support the DENB mode
• Pixel in stripe configuration
• Slim and compact
• Display colors: 262,144 colors
• Image reversion: Up/Down and Left/Right
• TTL transmission interface
• **RoHS complliant**

Mechanical Characteristics

Item	Standard Value	Unit
Screen size	6.4 inch (diagonal)	inch
Display Format	640 x (R, G, B) x 480	dot
Active Area	129.6 (H) x 97.44 (V)	mm
Outline Dimensions	175.4 (W) x 126.9 (H) x 12.5 (D) (Typ.)	mm
Pixel Pitch	0.2025 (H) x 0.203 (V)	mm
Pixel Configuration	Stripe	–
Surface Treatment	Anti-Glare and Wide View film	–
Display Mode	Normally White	–
Backlight	Middle Power 24 * 2-LED	–
Weight	321 ± 15	grams
Gray scale inversion direction	6 o'clock	–

Absolute Maximum Ratings: GND = 0V, Ta = 25ºC

Item	Symbol	Absolute Maximum Rating		Unit	Remarks
		Min.	Max.		
Supply Voltage	VCC	-0.3	+7.0	V	
Input SIgnals Voltage	V-sign	-0.3	VCC +0.3	V	Note 1
Storage Temperature	Tst	-30	+80	ºC	
Operation Temperature	Top	-30	+80	ºC	

Note 1: Input signals include CLK, HSYNC, VSYNC, DENB, R[0:5], G[0:5] and B[0:5]

Product specifications contained herein may be changed without prior notice.
It is therefore advisable to contact Purdy Electronics before proceeding with the design of equipment incorporating this product.

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Electrical Characteristics - Recommended Operation Condition for TFT-LCD Panel (Ta = 25ºC)

Item	Symbol	Specifications			Unit	Remark
		Min.	Typ.	Max.		
Supply Voltage	VCC	4.75	5.0	5.25	V	
Current Dissipation	ICC	–	100	120	mA	VCC=+5V
Power Consumption	PCC	–	0.5	0.63	W	
Supply Input Ripple Voltage	VCCRP	–	–	0.1	Vp-p	VCC=+5V
Input Signals Voltage (High)	VIH	+2.6	–	–	V	
Input Signals Voltage (Low)	VIL	–	–	+0.5	V	

Recommended Operating Conditions for Backlight (Ta = 25 ºC)

Item	Symbol	Min.	Typ.	Max.	Units	Remarks
Supply Voltage for LED Backlight	VLED	–	–	(11)	V	Note 1
Supply Current for LED Backlight	ILED	–	17.5	–	mA	Note 2
Backlight Power Consumption	PLED	–	–	3.08	W	Note 1, 3

Note 1: ILED = 17.5 mA, constant current
Note 2: The LED driving condition is defined for each LED module. (3 LED Serial)
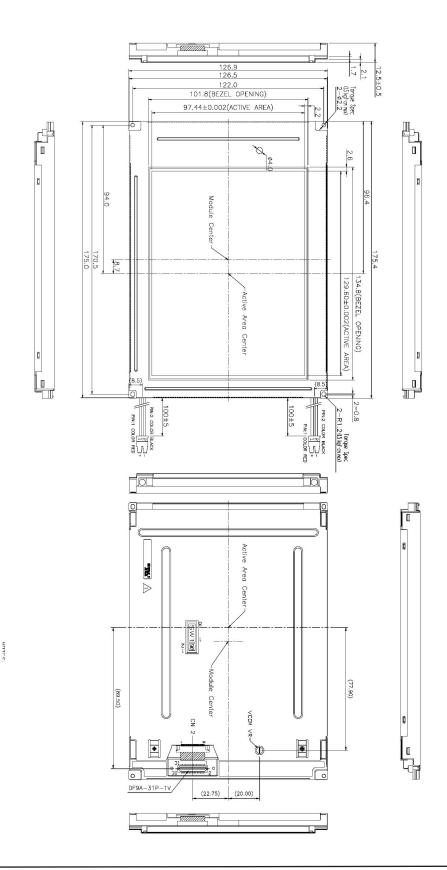   Input current = 17.5 mA * 8 = 140 mA
Note 3: PLED = (VLD-1 * ILED-1 + VLED-2 * ILED-2 .... + VLED-7 + ILED-7 + VLED-8) *2 (light bar)

Optical Specifications (Ta = 25 ºC)

Item		Symbol	Remarks	Specifications Min.	Specifications Typ.	Max.	Units
Viewing Angle	Horizontal	$\theta 21, \theta 22$	CR ≥ 10	55	60	–	deg
	Vertical	$\theta 12$		35	40	–	
		$\theta 11$		50	55	–	
Contrast Ratio Luminance when LCD is white Luminance when LCD i black		CR	At optimized viewing angle	200	400	–	–
Response Time	Rise	Tr	$\theta = 0º$	–	15	30	ms
	Fall	Tf	$\theta = 0º$	–	25	50	
Brightness		LUM	$\theta = 0º$	350	400	–	cd/m^2
Uniformity		U	$\theta = 0º$	75	80	–	%
Cross Talk		–	$\theta = 0º$	–	–	3.5	%
White Chhromaticity		X	$\theta = 0º$	0.27	0.31	0.35	–
		Y		0.29	0.33	0.37	
LED Life Time	Ta = 25 ºC	–	+25 ºC	20,000	30,000	–	hrs

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Dimensional Outline:

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Timing Parameters - AC Electrical Characteristics (VCC = VDD1 = 3.3V, VDD2 = 10V, GND = VSS1 = VSS2 = 0V, Ta = 25ºC)

	Item	Symbol	Format	Min.	Typ.	Max.	Unit
CLK	Frequency	Fc=1/tc	All	–	25.175	–	MHz
	(tc is the period of sampling click. In case of low-fre-quency, the imae-flicker may occur.)	tc	All	–	40	–	ns
Hsync	Period	Hp	All	–	31.778	–	us
				–	800	–	tc
	Display Period	Hd	All	–	640	–	tc
	Pulse Width	Hpw	All	12	96	139	tc
	Back-porch	Hbp	All	12	46	139	tc
	Front-porch	Hfp	All	–	18	–	tc
	Hpw + Hbp		All	136	142	151	tc
	Hsync-CLK	Hhc	All	10	–	Tc-10	ns
	Vsync-Hsync	Hvh	All	0	0	200	tc
Vsync	Period	Vp	480	–	16.8	–	ms
				515	525	800	Hp
			400	–	14.3	–	ms
				446	449	480	Hp
			350	–	14.3	–	ms
				447	449	510	Hp
	Display Period	Vdp	480	–	480	–	Hp
			400	–	400	–	
			350	–	350	–	
	Pulse Width	Vpw	All	2	2	35	Hp
	Back-porch	Vbp	480	2	33	35	Hp
			400	2	35	38	
			350	2	60	63	
	Front-porch	Vfp	480	1	10	–	Hp
			400	1	12	–	
			350	1	37	–	
	Vpw + Vbp		480	31	35	38	Hp
			400	33	37	40	
			350	58	62	65	
Data	CLK-DATA	Dcd	All	10	–	–	ns
	DATA-CLK	Ddc	All	10	–	–	ns
DENB	Horizontal scanning period	T1	All	780	800	900	tc
	Horizontal display period	T2	All	–	640	–	tc
	Vertical display period	T3	All	–	480	–	T1
	Frame cycling period	T4	All	515	525	800	T1

Input/Output Terminals
TFT-LCD Panel Driving - LCD Module Connector (Reference)-DF9A-31P-1V

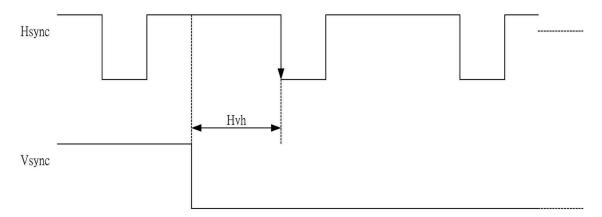| Pin No.	Symbol	Function
1	GND	Ground (0V)
2	CLK	Clock Signal for Sampling IMage DIgital Data
3	HSYNC	Horizontal Synchronous Signal
4	VSYNC	Vertical Synchronous Signal
5	GND	Ground (0V)
6	R0	Red Image Data Signal (LSB)
7	R1	Red Image Data Signal
8	R2	Red Image Data Signal
9	R3	Red Image Data Signal
10	R4	Red Image Data Signal
11	R5	Red Image Data Signal (MSB)
12	GND	Ground (0V)
13	G0	Green Image Data Signal (LSB)
14	G1	Green Image Data Signal
15	G2	Green Image Data Signal
16	G3	Green Image Data Signal
17	G4	Green Image Data Signal
18	G5	Green Image Data Signal (MSB)
19	GND	Ground (0V)
20	B0	Blue Image Data Signal (LSB)
21	B1	Blue Image Data Signal
22	B2	Blue Image Data Signal
23	B3	Blue Image Data Signal
24	B4	Blue Image Data Signal
25	B5	Blue Image Data Signal (MSB)
26	GND	Ground (0V)
27	DENB	Enable
28	VCC	DC +5.0 V Power Supply
29	VCC	DC +5.0 V Power Supply
30	R/L	Horizontal Image Shift direction Select Signal
31	U/D	Vertical Image Shift Direction Select Signal

Backlight Driving Connector: JST BHSR-02VS-1, 2 Pins

Pin No.	Symbol	Function	Remarks
1	+	Input Terminal (Anode)	Red
2	-	Input Terminal (Cathode)	Black

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Display Time Range

(1) Vertical Timing :

(2) Horizontal Timing :

(3) DENB Timing :

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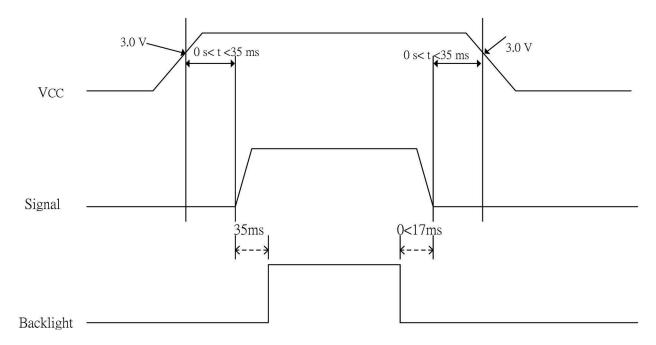
Power On Sequence

1. The supply voltage for input signals should be same as V_{CC}.
2. When the power is off , please keep whole signals (Hsync, Vsync, CLK, Data) low level or high impedance