AND Displays

ANDpSi08C351-HB

8.4" SVGA Color p-Si TFT LCD Module

The ANDpSi08C351-HB is 800 x 600 Color TFT display that utilizes new poly-silicon (p-Si) technology to provide a brighter, thinner and lighter display with high-resolution. The p-Si TFT technology allows the row and column LCD drivers to be fabricated directly on the LCD glass. This eliminates the need for discrete TAB drivers. Wide viewing angle technology provides excellent images from all directions. The dual tube CCFL backlight offers a very bright display with extended operating life. This makes it ideal for computer, instrumentation, medical or industrial applications.

Features

• RoHS Compliant

- p-Si construction with drivers on glass
- Wide viewing angle (± 45° at CR> 30)
- High luminance, long life backlight (50,000 hours)
- Dual CCFL backlight
- Clear 256K colors (K=1024)
- Thin and lightweight design
- RoHS compliant
- Applications: Display Terminals; Scientific, Medical, Test & Measurement Instruments; Office Automation Equipment

Mechanical Characteristics

Item	Specification	Unit
Outline Dimensions	199.5 (W) x 149.5 (h) x 12.0 max (D)	mm
Number of Pixels	800 (W) x 600 (H)	pixels
Active Area	170.4 (W) x 127.8 (H)	mm
Pixel Pitch	0.213 (W) x 0.213 (H)	mm
Weight (approx.)	395	gram
Backlight	CCFL, Side-light type (2 lamps)	–

Absolute Maximum Ratings

Item	Symbol	Min.	Max.	Unit
Supply Voltage	V_{DD}	-0.3	4.5	V
	V_{FL}	0	2000	Vrms
FL Driving Frequency	f_{FL}	0	100	kHz
Input Signal Voltage	V_{IN}	-0.3	V_{DD} + 0.3	V
Operating Temperature	T_{op}	0	50	°C
Storage Temperature	T_{stg}	-20	60	°C
Humidity (Max. Wet bulb temp = 29°C)	–	10	90	% RH

Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage (I_{FL}=6mA)	V_{DD}	3.0	3.3	3.6	V
	V_{FL}	480	530	580	Vrms
FL Start Voltage (Ta = 0°C)	–	1400	–	1600	Vrms
High Level Input Voltage	V_{IH}	0.8	_	V_{DD}	V
Low Level Input Voltage	V_{IL}	0	–	0.2	V
Current Consumption	I_{DD}	–	240	–	mA
	I_{FL}	3.0	–	6.0	mArms
Power Consumption (*1)	P	–	7.2	–	W

*1: Before the efficiency loss of CCFL inverter, I_{FL} =6mA

Optical Characteristics (Ta = 25˚C)

Item	Symbol	Min.	Typ.	Max.	Unit
Contrast	CR	100	250	–	–
Response	t_{on}	–	–	50	ms
	t_{off}	–	–	50	ms
Luminance (I_{FL} =6mA)	L	280	350	–	cd/m^2
Viewing Angle (CR>30)	fL/ fR	40/40	45/45	–	deg
	fU/ fD	45/45	50/50	–	deg

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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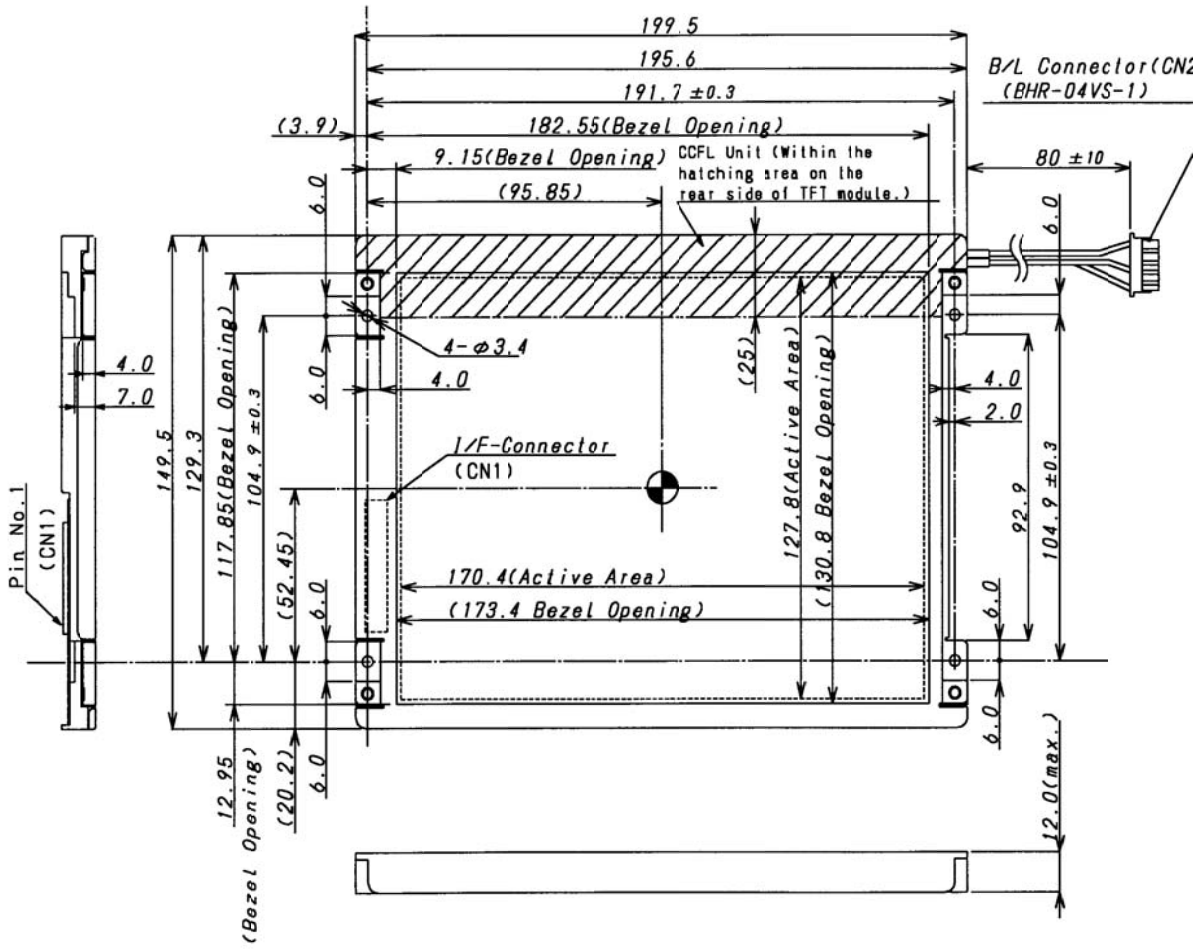
Dimensional Outline

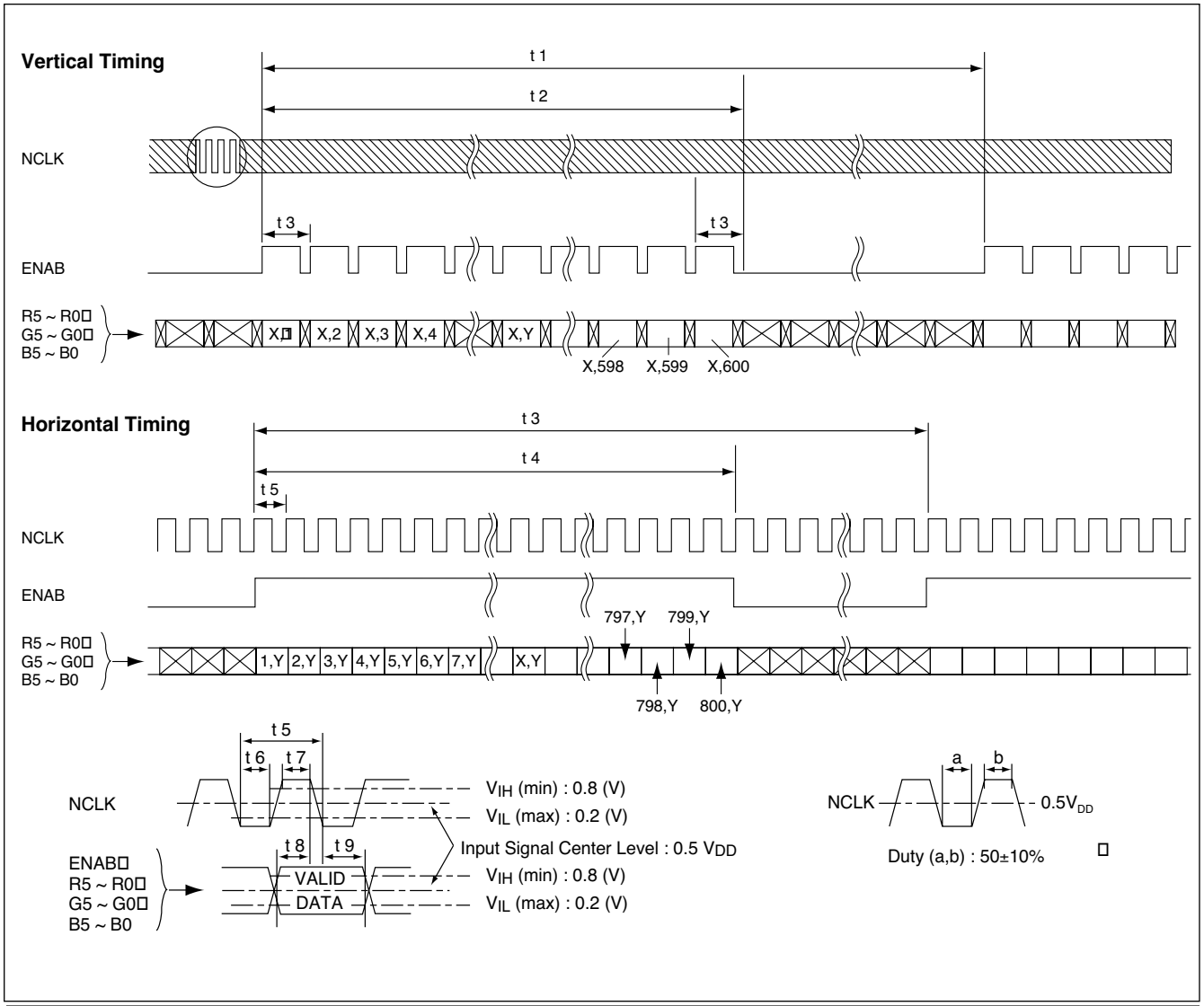
Unit: mm
Standard Tolerance: 0.5mm

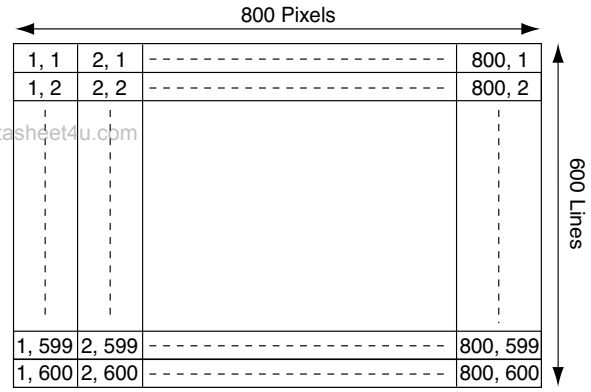


Timing Specifications

Item	Symbol	Min	Typ	Max	Unit
Frame Period	t1	604 x t3 –	625 x t3 17.78	628 x t3 17.86	– ms
Vertical Display Term	t2	600 x t3	600 x t3	600 x t3	t2 = N •t3
One Line Scanning Time	t3	944 x t5 (26.3)	1056 x t5 26.4	1064 x t5	– µs
Horizontal Display Period	t4	800 x t5	800 x t5	800 x t5	–
Clock Period	t5	24.7	25.0	27.8	ns
Clock “L” Time	t6	9.0	–	–	ns
Clock “H” Time	t7	9.0	–	–	ns
Set Up Time	t8	4.0	–	–	ns
Hold Time	t9	5.0	–	–	ns

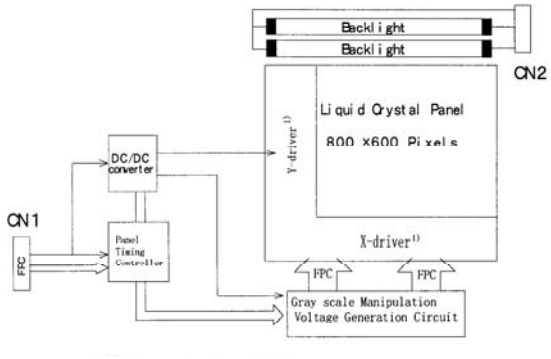
Timing Chart





Recommended Inverter: INV8m122325 (12VDC Input)

Block Diagram



1) Drivers are fabricated on the LCD glass

2) Connectors
CN1-DF19G-30P-1H/Hirose Electric Co.
Mating Connector - DF19G-30S-1C (Housing)

CN2-BHR-04VS-1/Japan Solderless Terminal Co., Ltd.
Mating Connector - SM04(4.0)B-BHS-1-TB/JST

Connector Pin Assignment for Interface

CN1 Input Signal (1)
(DF19G-30P-1H/Hirose Electric Co.)

Terminal No.		Symbol	Function
1		GND	Ground
	2	VDD	+3.3V Power Supply
3		VDD	+3.3V Power Supply
	4	GND	Ground
5		ENAB	Compound Synchronization Signal
	6	B5(2)	Blue Display Data (MSB)
7		B4(2)	Blue Display Data
	8	B3(2)	Blue Display Data
9		B2(2)	Blue Display Data
	10	B1(2)	Blue Display Data
11		B0(2)	Blue Display Data (LSB)
	12	GND	Ground
13		G5(2)	Green Display Data (MSB)
	14	G4(2)	Green Display Data
15		G3(2)	Green Display Data
	16	G2(2)	Green Display Data
17		G1(2)	Green Display Data
	18	G0(2)	Green Display Data (LSB)
19		GND	Ground
	20	R5(2)	Red Display Data (MSB)
21		R4(2)	Red Display Data
	22	R3(2)	Red Display Data
23		R2(2)	Red Display Data
	24	R1(2)	Red Display Data
25		R0(2)	Red Display Data (LSB)
	26	GND	Ground
27		NC	No Connect
	28	NC	No Connect
29		NCLK	Sampling Clock
	30	GND	Ground

CN2 CCFL Power Source
(BHR-04VS-1/Japan Solderless Terminal Mfg Co., Ltd.)

Terminal No.	Symbol	Function
1	VL	CCFL Power Supply (High Voltage)
2	VL	CCFL Power Supply (High Voltage)
3	NC(1)	–
4	GL	CCFL Power Supply (GND Side)

Note (1) NC terminal is open.

Note (2): 256K colors are displayed by the combinations of 18 data bits.

	Display	R5	R4	R3	R2	R1	R0	G5	G4	G3	G2	G1	G0	B5	B4	B3	B2	B1	B0	Gray Scale Level
Basic Color	Black	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	–
	Blue	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	H	H	–
	Green	L	L	L	L	L	L	H	H	H	H	H	H	L	L	L	L	L	L	–
	Lt. Blue	L	L	L	L	L	L	H	H	H	H	H	H	H	H	H	H	H	H	–
	Red	H	H	H	H	H	H	L	L	L	L	L	L	L	L	L	L	L	L	–
	Purple	H	H	H	H	H	H	L	L	L	L	L	L	H	H	H	H	H	H	–
	Yellow	H	H	H	H	H	H	H	H	H	H	H	H	L	L	L	L	L	L	–
	White	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H		–
Gray Scale of Red	Black	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L0
	Dark	L	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L1
		L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L2
					:						:						:			L3~L60
					:						:						:			
		H	H	H	H	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L61
	Light	H	H	H	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L62
	Red	H	H	H	H	H	H	L	L	L	L	L	L	L	L	L	L	L	L	Green L63
Gray Scale of Green	Black	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L0
	Dark	L	L	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L1
		L	L	L	L	L	L	L	L	L	L	H	L	L	L	L	L	L	L	L2
					:						:						:			L3~L60
					:						:						:			
		L	L	L	L	L	L	H	H	H	H	L	H	L	L	L	L	L	L	L61
	Light	L	L	L	L	L	L	H	H	H	H	H	L	L	L	L	L	L	L	L62
	Green	L	L	L	L	L	L	H	H	H	H	H	H	L	L	L	L	L	L	Green L63
Gray Scale of Blue	Black	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L0
	Dark	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H	L1
		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	H	L	L2
					:						:						:			L3~L60
					:						:						:			
		L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	L	H	L61
	Light	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	H	L	L62
	Blue	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	H	H	Blue L63
Gray Scale of White & Black	Black	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L0
	Dark	L	L	L	L	L	H	L	L	L	L	L	H	L	L	L	L	L	H	L1
		L	L	L	L	H	L	L	L	L	L	H	L	L	L	L	L	H	L	L2
					:						:						:			L3~L60
					:						:						:			
		H	H	H	H	L	H	H	H	H	H	L	H	H	H	H	H	L	H	L61
	Light	H	H	H	H	H	L	H	H	H	H	H	L	H	H	H	H	H	L	L62
	White	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	White L63