



Features

- a-Si TFT-LCD
- 640 (W) x 3 (RGB) x 480 (H) vertical stripes, Highly minute
- "Transmitting type", low reflection treatment, high brightness, High contrast, Ultra wide viewing angle
- RoHS compliant
- COG (Chip on Glass) composition
- LCD drive circuit is built in, but inverter for backlight is not built in.
- Applications include portable instruments and PDAs

• RoHS Compliant

Mechanical Characteristics (H=Horizontal, V=Vertical, D=Depth)

Item	Specification	Unit
Outline Dimensions	151.0 (H) x 115.5 (V) x 10.0 (D)	mm
Number of Pixels	640 (H) x 3 (RGB) x 480 (V)	pixels
Color-Filter-Array	RGB vertical stripes	mm
Pixel Pitch	0.0685 (H) x 0.2055 (V)	mm
Effective Display Area	131.52 (H) x 98.63 (V)	mm
Gray Scales	64	—
Front Surface Treatment	Anti-Glare Coat (with WV film)	—
Backlight	CCFL with 3 wavelength spectrum	L-type
Consumption Power	4.00	W
Weight (TYP.)	205	grams

Absolute Maximum Ratings

Item	Symbol	Min.	Max.	Unit
Logic Voltage	V_I	-0.3	4.5	V
Supply Voltage	V_{DD}	-0.3	$V_{DD} + 0.3$	V
Backlight Input Voltage	—	—	3000	Vrms
Operating Temperature (Panel Surface)	T_{op}	-20	70	°C
Storage Temperature (Panel Surface)	T_{stg}	-20	70	°C

AND065A041F-HB

Custom 6.5" VGA ColorTFT-LCD Integrated Display Module

The AND065A041F-HB is a custom VGA (640 x 480) color a-Si TFT-LCD panel with a 6.5" diagonal viewing area.

Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min.	Typ.	Max.	Unit
Power Voltage (input voltage)	V_{DD}	+3.15	+3.3	+3.45	V
Power Voltage (current consumption)	I_{DD}	—	240	350	mArms
Input Low Voltage	V_{IL}	0.0	—	0.3 * V_{DD}	V
Input High Voltage	V_{IH}	0.7 * V_{DD}	—	V_{DD}	V
Allowable Ripple Voltage	V_{RP}	—	—	100	mVp-p

*1: 8 color bars pattern

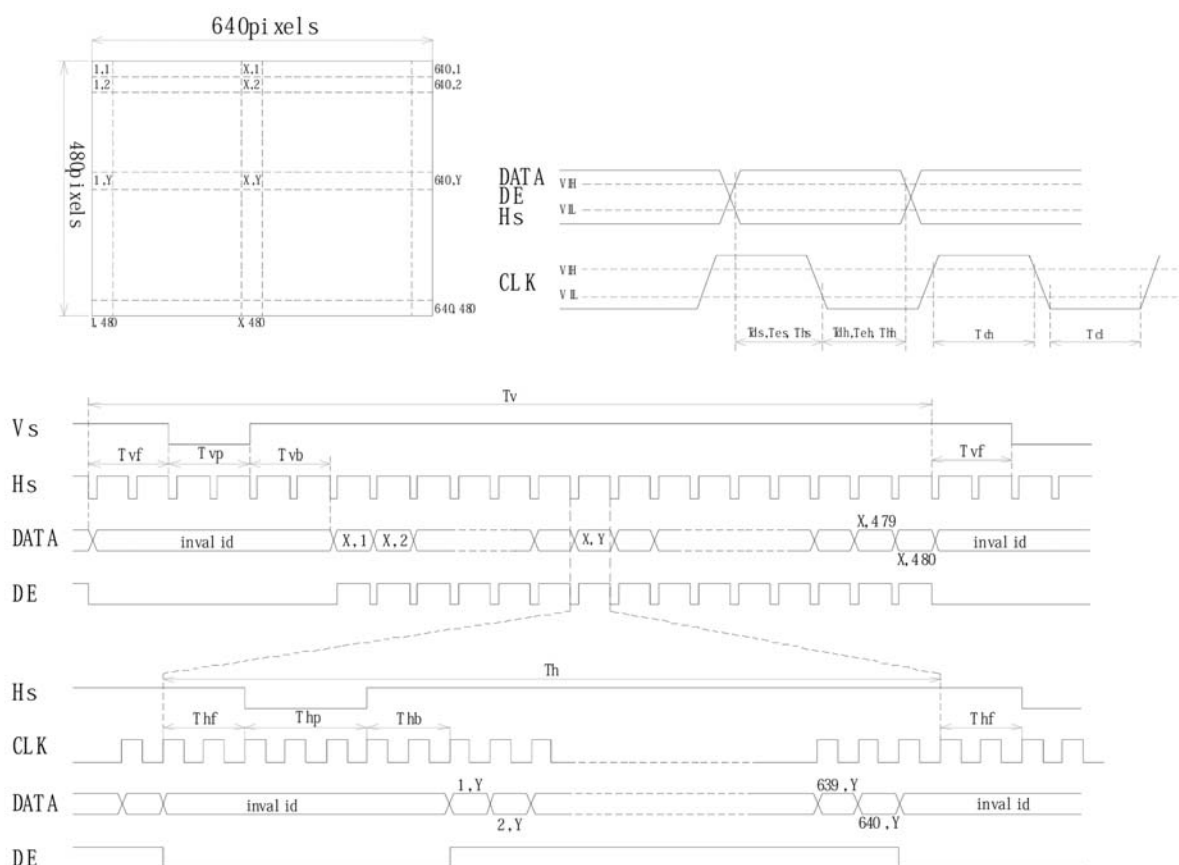
Optical Characteristics (Ta = 25°C)

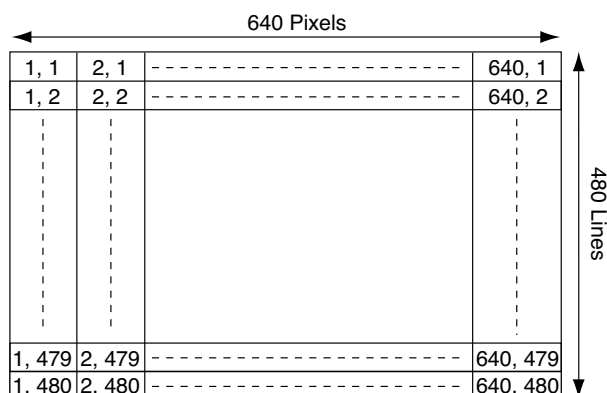
Item	Sym.	Condition			Standard Value			Unit
		θ	ϕ	C	Min	Typ	Max	
Brightness	B	0°	0°	—	300	400	—	cd/m ²
Contrast ratio	Cmax	Best Angle			100	250	—	—
White color chromaticity	X	0°	0°	—	0.27	0.31	0.35	—
	Y	0°	0°	—	0.28	0.32	0.36	—
Bright./uniformity	—	0°	0°	—	0.7	—	—	—
Vert. viewing angle	θU	—	0°	≥ 10	40	60	—	°
	θD	—	0°	≥ 10	20	30	—	°
Horz. viewing angle	ϕL	0°	—	≥ 10	45	60	—	°
	ϕR	0°	—	≥ 10	45	60	—	°
Response time	τr	0°	0°	—	—	10	20	ms
	τd	0°	0°	—	—	15	30	ms

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.

Timing Specifications

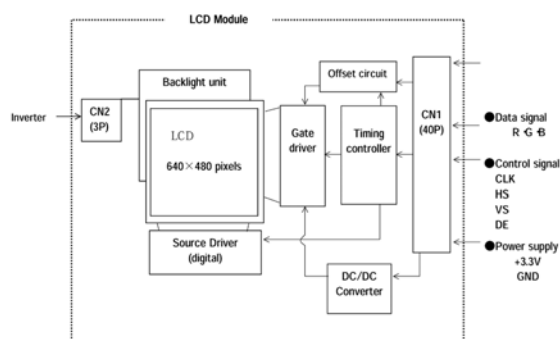
Characteristics		SYMBOL	MIN	TYP.	MAX	UNIT	REMARKS
CLK Clock	Frequency	Fck	—	25.175	—	MHz	
	Period	Clk	—	39.72	—	ns	
	High/Low Time	Tch/Tcl	12/12	—	—	ns	
DATA Data	Setup/Hold Time	Tds/Tdh	5/10	—	—	ns	
DE Data Enable	Setup/Hold Time	Tes/Teh	5/10	—	—	ns	
Hs Horiz. Sync.	Setup/Hold Time	Ths/Thh	5/10	—	—	ns	
	Period	Th	700	800	832	clk	
	Pulse Width	Thp	4	96	—	clk	
	Front/Back Porch	Thf/Thb	—/7	13/51	—/—	clk	
Vs Vert. Sync.	Period	Tv	516/16.2	525/16.7	534/17.6	th/ms	
	Pulse Width	Tvp	1	2	—	th	
	Front/Back Porch	Thf/Thb	—/4	11/32	—/—	th	

Timing Chart




Recommended Inverter: TBD

Block Diagram



- 1) Drivers are fabricated on the LCD glass
- 2) Connectors
CN1
1L-FHR-B40S-HF / JAE
Mating connector: FFC (0.5mm pitch)

Photo of back of display



Connector Pin Assignments for Interface CN1; Signal Interface

Terminal No.		Symbol	Function
1		VDD	+3.3V Power Supply
	2	VDD	+3.3V Power Supply
3		VDD	+3.3V Power Supply
	4	VDD	+3.3V Power Supply
5		GND	Signal Ground
	6	GSX1	Display period compensation signal
7		GND	Signal Ground
	8	DOFF1	Non-display pd. compensation signal
9		GND	Signal Ground
	10	DE	Data Enable Signal
11		GND	Signal Ground
	12	VS	Vertical Sync.
13		GND	Signal Ground
	14	HS	Horizontal Sync.
15		GND	Signal Ground
	16	B5	Blue Data
17		B4	
	18	B3	
19		B2	
	20	B1	
21		B0	
	22	GND	Signal Ground
23		G5	Green Data
	24	G4	
25		G3	
	26	G2	
27		G1	
	28	G0	
29		GND	Signal Ground
	30	R5	Red Data
31		R4	
	32	R3	
33		R2	
	34	R1	
35		R0	
	36	GND	Signal Ground
37		GND	Signal Ground
	38	CLK	Dot Clock
39		GND	Signal Ground
	40	GND	Signal Ground

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	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	
		:						:						:							
	Light	H	H	H	H	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L61
		H	H	H	H	H	L	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	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	
		:						:						:							
	Light	L	L	L	L	L	L	H	H	H	H	L	H	L	L	L	L	L	L	L	L61
		L	L	L	L	L	L	H	H	H	H	H	L	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	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	
		:						:						:							
	Light	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H	L	H	L61
		L	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	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	
		:						:						:							
	Light	H	H	H	H	L	H	H	H	H	L	H	H	H	H	H	H	L	H	L	L61
		H	H	H	H	H	L	H	H	H	H	H	L	H	H	H	H	H	L	L	L62
	White	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	White L63

Mechanical Drawing

