AND-TFT-35VX-UHB-TS

3.5” TFT LCD
aSi LCD Color Module

The AND-TFT-35VX-UHB-TS is a compact full color TFT LCD module, that is suitable for projectors and other media applications which require high quality, flat-panel displays.

Features

- Amorphous silicon TFT LCD panel with ultra high bright LED backlight
- Module with resistive type touch panel
- Pixel in stripe configuration
- Display colors: 262,144 colors
- Optimum Viewing Direction: 6 o’clock
- TTL transmission interface
- Four wire resistive touch
- **RoHS complliant**

Mechanical Characteristics

Item	Standard Value	Unit
Screen size	3.5 inch (diagonal)	inch
Display Format	640 x (R, G, B) x 480	dot
Display Colors	262,144	—
Active Area	72.0 (H) x 52.56(V)	mm
Pixel Pitch	0.1125 (H) x 0.1095 (V)	mm
Pixel Configuration	Stripe	—
Outline Dimensions	84.25 (W) x 65.40 (H) x 4.55 (D) (Typ.)	mm
Weight	52 ± 5	g
Surface Treatment	AG	
Display Mode	Normally White	–
Surface Treatment of Touch Panel	3H	–
Backlight	12-LED	–

Absolute Maximum Ratings VSS1 = VSS2 = GND = 0V, Ta = 25ºC

Parameters	Symbol	Absolute Maximum Rating		Unit
		Min.	Max.	
Supply Voltage	VDD1	-0.3	2	V
	VCC	-0.3	5	V
	VDD2	-0.5	12.0	V
	VGG	-0.3	40.0	V
	VGG-VEE	–	40.0	V
	VEE	-20	0.3	V

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.

Electrical Characteristics - Recommended Operating Conditions (VSS1 = VSS2 = GND = 0V, Ta = 25ºC)

Item	Symbol	Specifications			Unit
		Min.	Typ.	Max.	
Supply Voltage for Source Driver	VDD1	3.0	3.3	3.6	V
	VDD2	9.5	10	10.5	V
Supply Voltage for Gate Driver	VGG	–	+17	–	V
	VEE	–	-10	–	V
	VCC	3.0	3.3	3.6	V
Supply Voltage for Vcom	Vcom	–	(2.7)	–	V
Digital Input Voltage	VIH	0.8VDD1	–	VDD1	V
	VIL	0	–	0.2VDD1	ς

Recommended Driving Conditions for LED Backlight (GND = 0V, Ta = 25ºC)

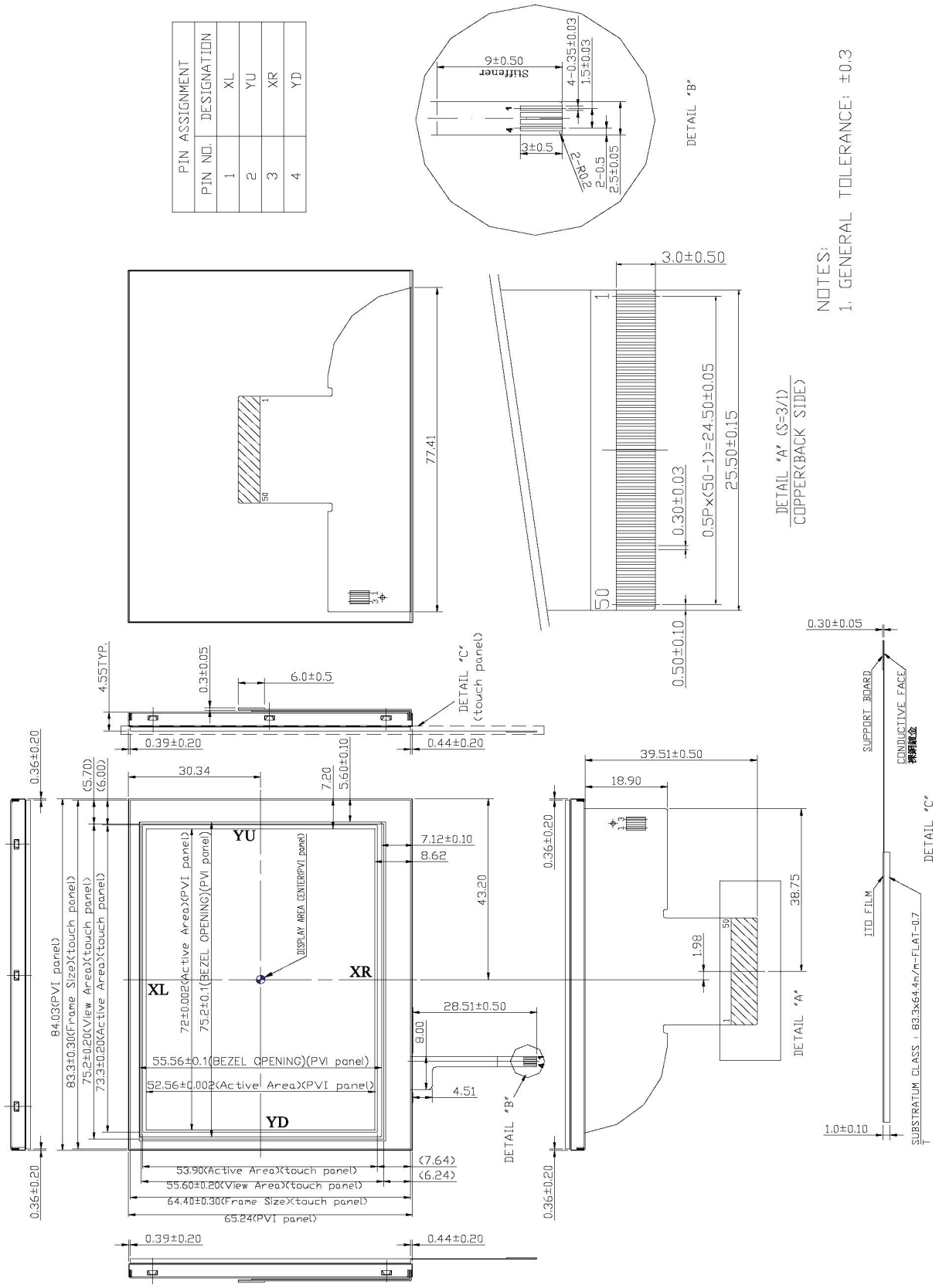
Item	Symbol	Specifications			Unit	Remarks
		Min.	Typ.	Max.		
Supply Voltage of LED Backlight	VLED	9	9.5	11.5	V	I_L = 20 mA
Supply Current of LED Backlight	ILED1	–	40	–	mA	
	ILED2	–	40	–	mA	
Backlight Power Consumption	PLED	720	780		mW	Note 2

Note 2: PLED = VLED * ILED + VLED * ILED.

Optical Specifications (Ta = 25 ºC)

Item		Symbol	Condition	Specifications Min.	Typ.	Max.	Units
Viewing Angle	Horizontal	θ	CR ≥ 10	±45	±50	–	deg
	Vertical	θ 12 (12 o'clock)		10	15	–	
		θ 11 (to 6 o'clock)		30	35	–	
Contrast Ratio Luminance when LCD is white Luminance when LCD i black		CR	At Optimized Viewing Angle	200	400	–	–
Response Time	Rise	Tr	θ = 0º	—	15	30	ms
	Fall	Tf	θ = 0º	—	25	50	ms
Brightness		LUM	θ = 0º	1200	1300	–	cd/m^2
Uniformity (%)		U	θ = 0º	70	75	–	%
Cross Talk			θ = 0º	–	–	3	%
White Chhromaticity		x		0.28	0.31	0.34	–
		y		0.30	0.33	0.36	–
LED Life Time			Ta = 25º	–	10,000	–	Hrs

Dimensional Outline:



Pin Description - Input/Output Terminals

Pin No.	Symbol	I/O	Description
1	DIO1	I/O	Horizontal Start Pulse SIgnal Input or Output 1
2	VSS2	I	Ground
3	VDD1	I	Power Supply
4	CLK	I	Horizontal Shift Clock
5	R/L	I	Left/Right Selection
6	R0	I	Red Data (LSB)
7	R1	I	Red Data
8	R2	I	Red Data
9	R3	I	Red Data
10	R4	I	Red Data
11	R5	I	Red Data (MSB)
12	VSS2	I	Ground
13	G0	I	Green Data (LSB)
14	G1	I	Green Data
15	G2	I	Green Data
16	G3	I	Green Data
17	G4	I	Green Data
18	G5	I	Green Data (MSB)
19	B0	I	Blue Data (LSB)
20	B1	I	Blue Data
21	B2	I	Blue Data
22	B3	I	Blue Data
23	B4	I	Blue Data
24	B5	I	Blue Data (MSB)
25	LD	I	Load Output SIgnal
26	REV	I	Data Invert Control
27	POL	I	Polarity Selection
28	DIO2	I/O	Horizontal Pulse Signal Input or Output
29	VSS2	I	Ground
30	V3	I	Gamma Voltage 3
31	V5	I	Gamma Voltage 5
32	V7	I	Gamma Voltage 7
33	V8	I	Gamma Voltage 8
34	V10	I	Gamma Voltage 10
35	V12	I	Gamma Voltage 12
36	VSS2	I	Ground
37	VDD2	I	Voltage for Analog Circuit
38	VCOM	I	Common Voltage
39	OE	I	Output Enable
40	U/D	I	Up/Down Selection
41	CKV	I	Vertifcal Shift Clock
42	STVU	I/O	Vertical Shift Pulse Signal Input or Output
43	STVD	I/O	Vertical Shift Pulse Signal Input or Output
44	VGG	I	Gave on Voltage
45	VSS1	I	Ground
46	VCC	I	Voltage for Logic Circuit
47	VEE	I	Gate Off Voltage
48	VLED	–	Supply Voltage for LED Backlight
49	GLED2	–	Ground for LED Backlight
50	GLED1	–	Ground for LED Backlight

Touch Panel Characteristics - Electrical Performance (Ta = 25ºC)

Item	Symbol	Specifications			Unit	Remark
		Min.	Typ.	Max.		
Terminal Resistance	X	100	–	900	Ω	
	Y	100	–	900	Ω	
Input Voltage	Vt	–	50	7.0	V	
Linearity (X, Y Direction)	–	–	–	±1.5	%	
Insulation Impedance	–	20	–	–	MΩ	DC 25V
Response Time	–	–	–	5	ms	
Operation Force	–	–	–	35	g	Note 1

Note 1: Input through 0.8R stylus or finger.

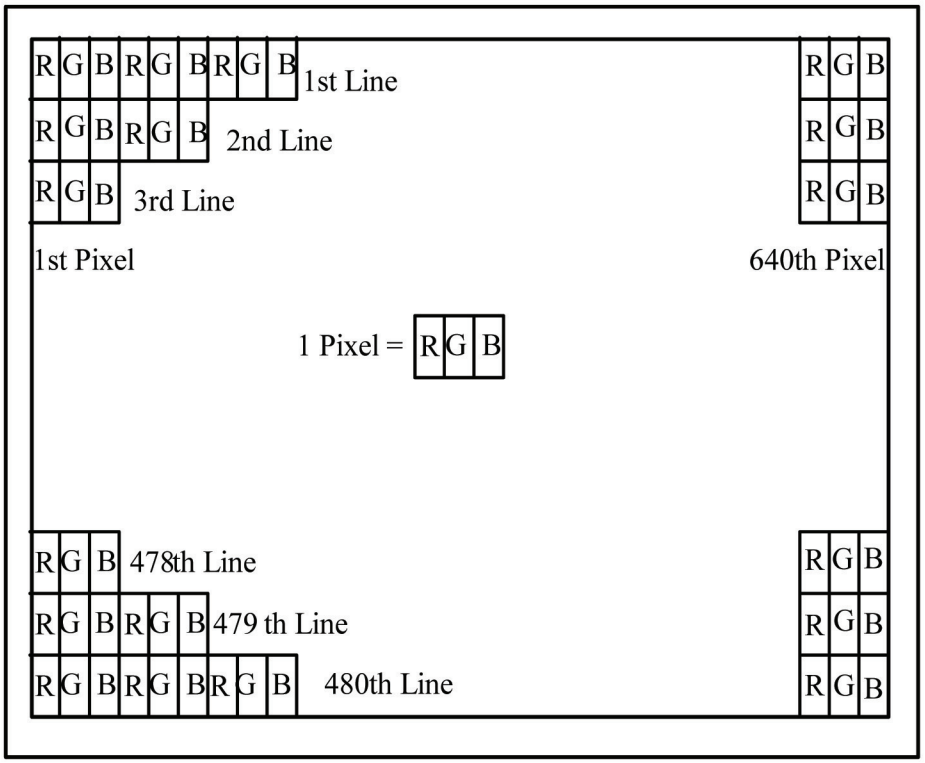
Touch Panel Characterisitcs - Pin Assignment

Pin	Symbol	Function
1	XL	Upper Electrode X (Left Side)
2	YU	Lower Electrode (Upper Side)
3	XR	Upper Electrode X (Right Side)
4	YD	Lower Electrode (Down Side)

Power Consumption

Parameter	Symbol	Condition	Specifications		Unit
			Typ.	Max.	
Supply Current for Gate Driver (Hi Level)	IGG	VGG = +17V	0.12	0.15	mA
Supply Current for Gate Driver (Low Level)	IEE	VEE = -10V	0.15	0.19	mA
Supply Current for Source Driver (Digital)	IDD1	VDD1 = +3.3V	4.8	8.0	mA
Supply Current for Source Driver (Analog)	IDD2	VDD2 = +10V	16.0	30.0	mA
Supply Current for Gate Driver (Digital)	ICC	VCC = +3.3V	0.17	0.21	mA
LCD Panel Power Consumption	–	–	180	332	mW
Backlight Power Consumption	PLED	–	384	456	mW
Total Power Consumption	–	–	564	788	mW

Pixel Arrangement



Block Diagram