Ordering number : ENN6754

LCD Module

ALP121AGX

Low-Temperature Polysilicon 1.5-inch TFT LCD Module

Overview

This 1.5 inch low temperature poly- silicon TFT-LCD module is suitable for digital still camera.

Features

- Diagonal 3.8cm (1.5inch) display size.
- 521 × 218 = 113,578 dots.
- RGB delta color arrangement.
- Operating temperature (panel) is -10 to +60°C. Ambient temperature during storage is -20 to +70°C.
- Slim design, light weight and narrow frame. (t=0.7mm glass)
- Up / down and right / left inverse function.
- Built-in level shifter circuit.
- Conform to NTSC, PAL when using recommended IC : LV4135W, LV4137W, (LV4139W : Under development)
- Glare polarizer.
- Builds in white LED backlight unit. (No inverter unit.)
- Panel power consumption is Typ.55mW at NTSC. Back-light power consumption is 210mW. (reference)
- Display surface luminance is typ 150cd/m2.

Specifications

Item	Specifications	Unit	Remarks
Dot count (H) × (V)	521 × 218	dot	
Effective display dimensions (H) × (V)	30.25 × 22.67	mm	
Display size (diagonal)	3.8 (1.5inch)	cm	
Dot pitch (H) × (V)	0.058 × 0.104	mm	
Color arrangement	RGB Delta	-	
External Dimensions (W) × (H) × (D)	TYP 37.0 × 32.8 × 5.3	mm	Note1
Weight	Approx. 12	g	

*Note1: Excluding flexible cable and protrusions.

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Absolute Maximum Ratings at VSS=0V

Item	Symbol	Ratings	Unit
H driver power supply voltage	HVDD	-1.0 to +14	V
V driver power supply voltage	VVDD	-1.0 to +14	V
Common electrode voltage	VCOM	-1.0 to +14	V
Driving direction signal voltage	CSH, CSV	-1.0 to +14	V
H driver input voltage	STH, XSTH, CKH1, CKH2	-1.0 to +14	V
V driver / precharge data input voltage	STV, XSTV, CKV1, CKV2, ENB, XENB, PCG, XPCG	-1.0 to +14	V
Video / precharge data input voltage	VG, VR, VB, VPCD	-1.0 to +13	V
Operating temperature (panel)	Topr	-10 to +60	°C
Storage temperature	Tstg	-20 to +70	°C

Operating Conditions

Power supply voltage

HVDD LV4135W LV4137W : 12.0V ± 0.3V

VVDD LV4135W LV4137W : 12.0V ± 0.3V

VSS LV4135W LV4137W : 0V

Item			Symbol	MIN	TYP	MAX	Unit
H driver input voltage		Low	VHIL	-0.3	0.0	0.3	V
		High	VHIH	2.5	3.0	4.0	V
V driver input voltage		Low	VVIL	-0.3	0.0	0.3	V
		High	VVIH	2.5	3.0	4.0	V
CSV, CSH		Low	VSIL	-0.3	0.0	0.3	V
		High	VSIH	11.5	VDD	VDD	V
Video signal center voltage	LV4135W, LV4137W		VVC	5.0	5.2	5.4	V
Video signal input voltage range *1			VG, VR, VB	VVC-3.5	-	VVC+3.5	V
Common electrode voltage*2			VCOM	(VVC-0.2)-0.2	(VVC-0.2)	(VVC-0.2)+0.2	V
Precharge data signal *1			VPCD	VVC±1.5	VVC±2.0	VVC±2.5	V

*1 Video signal and precharge data signal shall be input symmetrically around VVC.

*2 Set common electrode voltage to the optimum voltage.

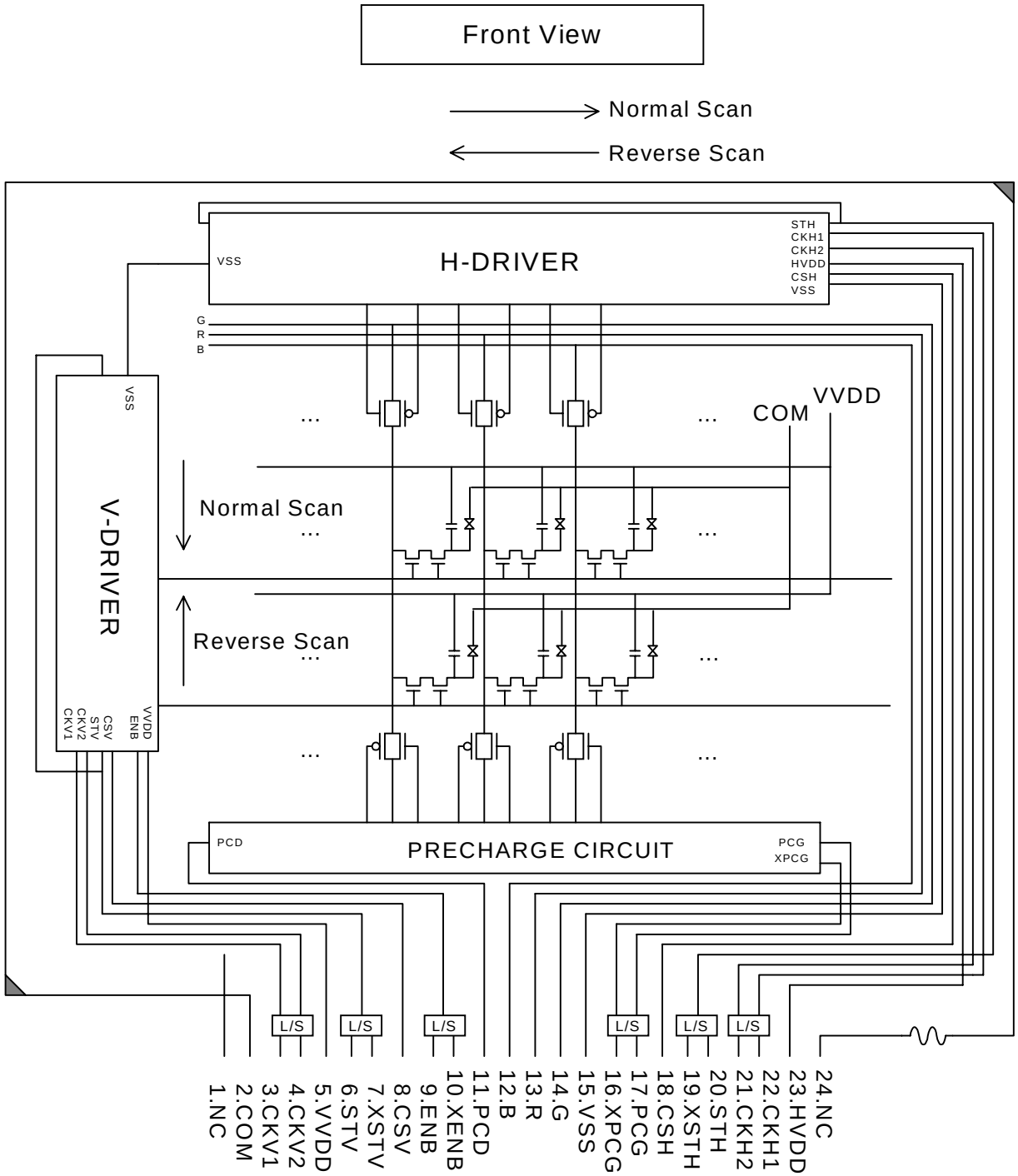
Optical Specifications

Item	Symbol	Condition	MIN	TYP	MAX	Unit
Contrast ratio	CR	25°C	-	100	-	-
Viewing angle range	θT θB θL θR	CR >= 10	-	15 35 45 45	-	deg

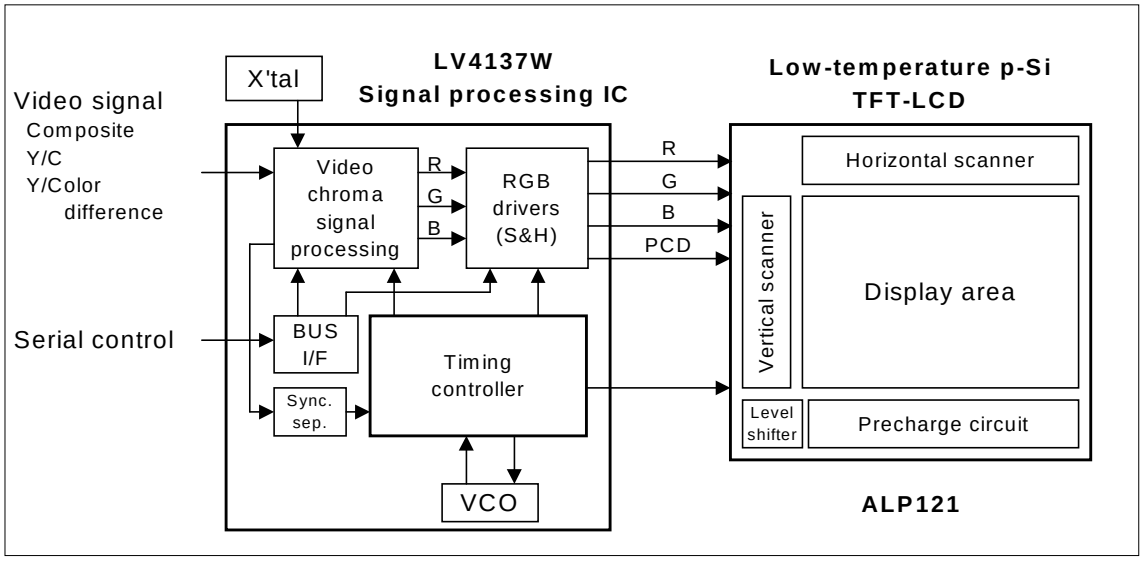
Pin Function

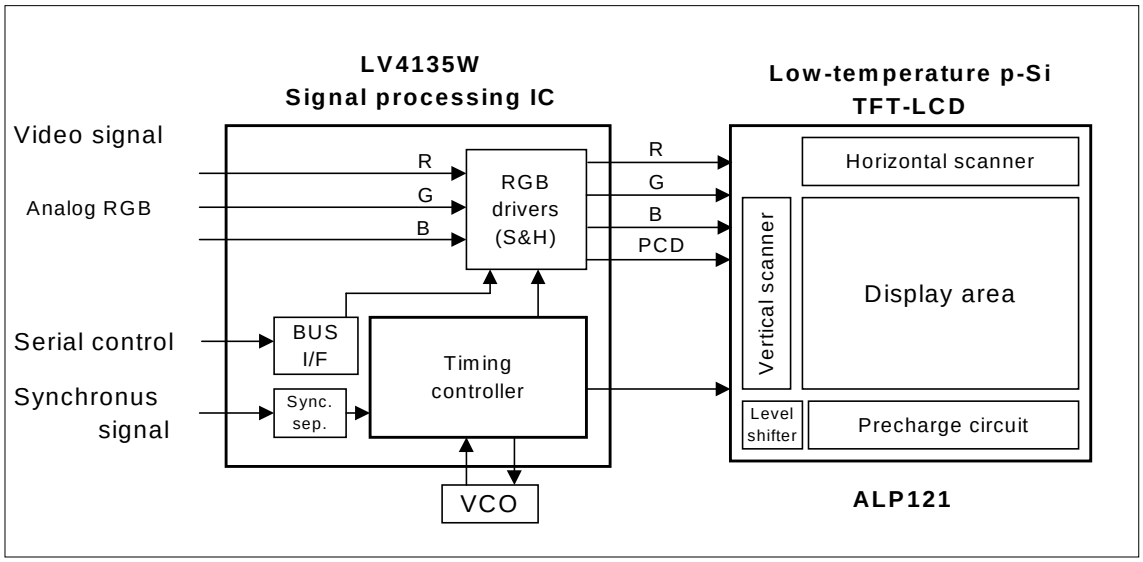
Pin No	Symbol	Function
1	NC	Leave this pin open
2	COM	Common electrode voltage
3	CKV1	V clock 1
4	CKV2	V clock 2
5	VVDD	VDD for V drive
6	STV	V start signal
7	XSTV	Inverted signal of STV
8	CSV	Up / down inverse control signal (H : Normal scan, L : Reverse scan)
9	ENB	Enable signal
10	XENB	Inverted signal of ENB
11	PCD	Precharge data signal
12	B	Video signal (B)
13	R	Video signal (R)
14	G	Video signal (G)
15	VSS	VSS for V and H drive
16	XPCG	Inverted signal of PCG
17	PCG	Precharge gate signal
18	CSH	Right / left inverse control signal (H : Normal scan, L : Reverse scan)
19	XSTH	Inverted signal of STH
20	STH	H start signal
21	CKH2	H clock 2
22	CKH1	H clock 1
23	HVDD	VDD for H drive
24	NC	Leave this pin open

Block Diagram

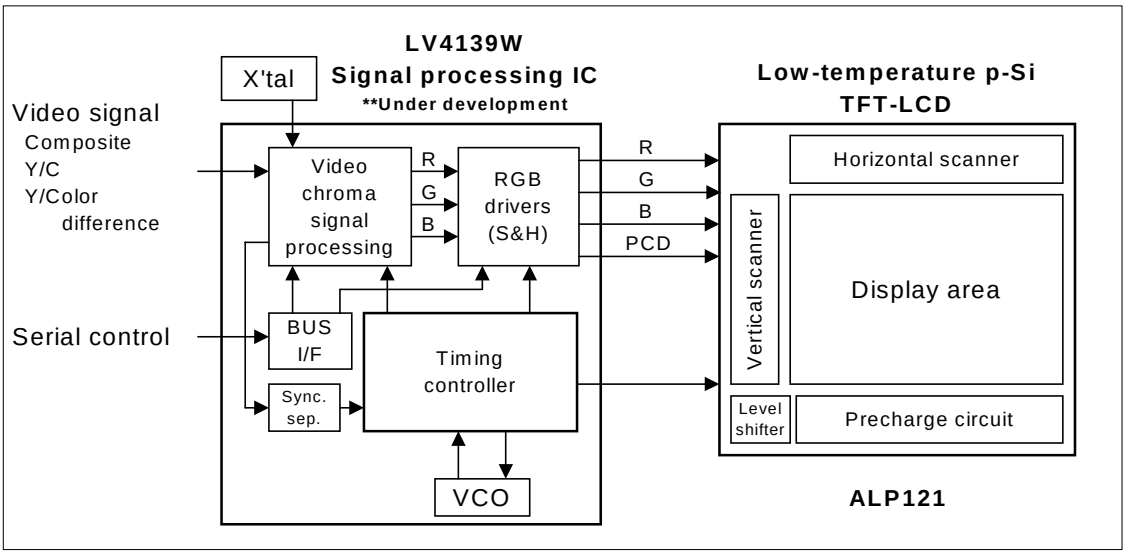


System Configuration

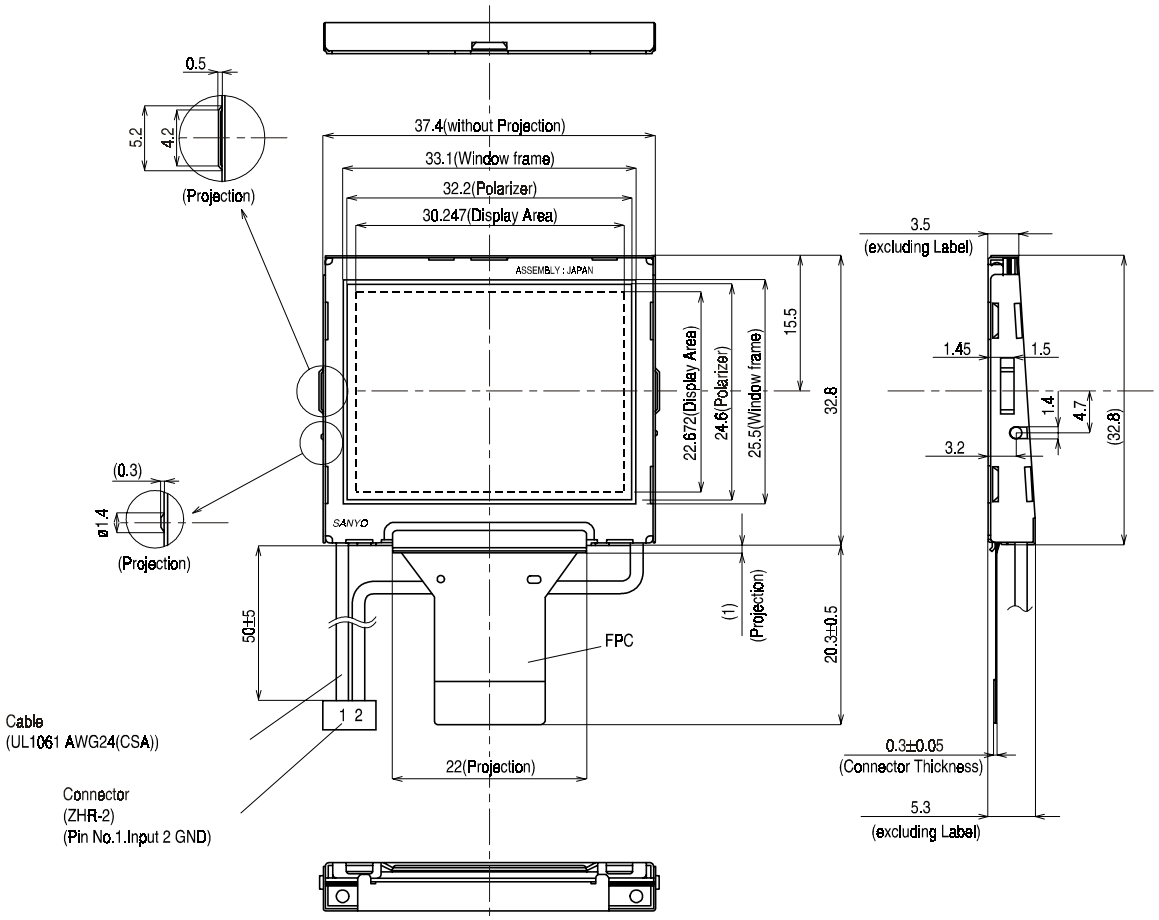


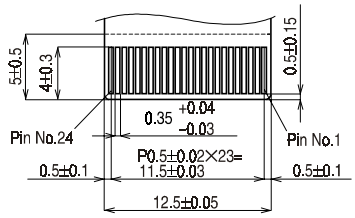


System Configuration



Package Dimension





Detail drawing of FPC terminal