

Application

This specification is applied to the 5 inch WVGA supported TFT-LCD module and can display true 16.7M colors(8 bit/ color). The module is designed for OA, Car TV application and other electronic products which require flat panel display of digital signal interface. This module is composed of a 5" TFT-LCD panel, a driver circuit and backlight unit and used as the input devices for general electric appliances via both finger and Capacitive stylus pen.

Features

- WVGA (800×480 pixels) resolution.
- Digital 24 bit parallel RGB.
- Projected Capacitive Touch
 - ☐ I2C Interface
 - ☐ Multi Touch (Ten points)
 - ☐ 2048 x 2048 resolution

General Specifications

Item	Specifications	Unit
Screen Size	5 (5:3 diagonal)	inch
Display Format	800RGB(H)×480(V)	dot
Active Area	108(H)×64.8(V)	mm
Pixel Pitch	0.135(H)×0.135(V)	mm
Pixel Configuration	RGB Vertical Stripe	-
Display Mode	IPS Type Transmissive Mode Normally Black	-
Surface Treatment	Anti-Glare	-
Viewing Direction	Full view angle	-
Outline Dimension	118.5(W)×77.55(H)×4.95(D)	mm
Weight	(87)	g
RoHS Compliance	RoHS Compliance	-

Absolute Maximum Ratings

Absolute Ratings of Environment

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Storage Temperature	T _{ST}	-30	+80	°C	(1)(2)
Operating Ambient Temperature	T _{OP}	-30	+80	°C	(1)(2)

Note1: Background color changes slightly depending on ambient temperature.

This phenomenon is reversible.

Note2: Please refer to item of RELIABILITY.

Electrical Absolute Ratings

TFT-LCD Module

(Ta=25±2°C, GND=V_{SS}=0V)

Item	Symbol	Value		Unit	Note
		Min.	Max.		
Digital Power Supply Voltage	V _{CC}	-0.3	4.0	V	-

LED Driver Absolute Maximum Ratings

(Ta=25±2°C)

Item	Symbol	Value		Unit	Note
		Min.	Max.		
LED Driver Supply Voltage	VLED	-0.3	13	V	(1)
LED Driver PWM	PWM	-0.3	6	V	(1)

Electrical Characteristics
TFT-LCD Module

(Ta=25±2°C)

Item	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Digital Power Supply Voltage	V _{CC}	3.0	3.3	3.6	V	-
Digital Current	I _{CC}	-	75	105	mA	(1)
Input High Threshold Voltage	V _{IH}	0.7xV _{CC}	-	V _{CC}	V	-
Input Low Threshold Voltage	V _{IL}	GND	-	0.3xV _{CC}	V	-
Pixel Clock	DCLK	-	25	-	MHz	-

Note (1) The specified power consumption is under the conditions at V_{CC} = 3.3V, FV=60Hz, DCLK=25 MHz, whereas a power dissipation check Pattern below is displayed.

White Pattern / 255 Gray



Active Area

Electrical Characteristics

Backlight Unit

(Ta=25±2°C)

Item	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Backlight Driver Power Supply	VLED	11.5	12.0	12.5	V	-
Backlight Driver Current	ILED	-	120	168	mA	VLED=12V
PWM signal Low voltage	V _{BLENIL}	-	-	0.4	V	-
PWM signal High voltage	V _{BLENIH}	1.2	-	-	V	-
PWM frequency	f _{BLENI}	6.5	-	100	kHz	-
LED life time	-	50000	60000	-	Hr	(1)

Note (1) : LED life time is defined as under 25±2°C , when the average brightness decrease to 50% of original brightness

Projected Capacitive Touch

(Ta=25±2°C)

Item	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Operating Voltage	V _{TP}	3.0	3.3	3.6	V	-
Power Supply Current	I _{TP}	-	15.5	21.7	mA	(1)
Input High Threshold Voltage	V _{IH}	0.7V _{TP}	-	V _{TP}	V	-
Input Low Threshold Voltage	V _{IL}	-0.3	-	0.3V _{TP}	V	-
Output High Threshold Voltage	V _{OH}	0.7V _{TP}	-	-	V	-
Output Low Threshold Voltage	V _{OL}	-	-	0.3V _{TP}	V	-
Power Consumption	P _L	-	51.15	71.61	mW	@3.3V
Report Rate	RR	-	60	-	Hz	-
Interface		I ² C				-
Function		Multi Touch				-

Note (1) This test condition is touched with 10 points.

Input / Output Terminals Pin Assignment

TFT-LCD Module

Connector : CviLux CF25501D0R0-05-NH or equivalent

Pin No.	Symbol	I/O	Description
1	GND	I	Ground
2	V _{CC}	I	Power supply
3	V _{CC}	I	Power supply
4	VLED	I	Power of LED backlight
5	VLED	I	Power of LED backlight
6	PWM	I	Shutdown & Dimming control input for backlight. Do not allow this this pin to float. "Hi"=100%, "Low"=0%.
7	GND	I	Ground
8	R0	I	RED data (LSB)
9	R1	I	RED data
10	R2	I	RED data
11	R3	I	RED data
12	GND	I	Ground
13	R4	I	RED data
14	R5	I	RED data
15	R6	I	RED data
16	R7	I	RED data(MSB)
17	GND	I	Ground
18	G0	I	GREEN data(LSB)
19	G1	I	GREEN data
20	G2	I	GREEN data
21	G3	I	GREEN data
22	GND	I	Ground
23	G4	I	GREEN data
24	G5	I	GREEN data
25	G6	I	GREEN data
26	G7	I	GREEN data(MSB)
27	GND	I	Ground
28	B0	I	Blue data(LSB)
29	B1	I	Blue data
30	B2	I	Blue data

31	B3	I	Blue data
32	GND	I	Ground
33	B4	I	Blue data
34	B5	I	Blue data
35	B6	I	Blue data
36	B7	I	Blue data(MSB)
37	GND	I	Ground
38	HSYNC	I	Horizontal sync signal applied to the RGB interface, default is negative polarity. See Note 1
39	VSYNC	I	Vertical sync signal applied to the RGB interface, default is negative polarity. See Note 1
40	GND	I	Ground
41	DE	I	Input data enable control. See Note 1
42	GND	I	Ground
43	DCLK	I	Dot Clock See Note 1
44	GND	I	Ground
45	NC	-	Not connect
46	NC	-	Not connect
47	NC	-	Not connect
48	NC	-	Not connect
49	/RESET	I	Global Reset(Low Active)
50	GND	I	Ground

Note 1:

RGB Mode Selection Table	DCLK	HSYNC	VSYNC	DE
SYNC - DE Mode	Input	Input	Input	Input
SYNC Mode	Input	Input	Input	GND
DE Mode	Input	GND	GND	Input

Note: "Input" means these signals are driven by host side

Projected Capacitive Touch

Connector: CVILUX CF25061D0R0-05-NH or equivalent

Pin No.	Symbol	I/O	Description
1	GND	I	System ground.
2	V_{TP}	I	Power supply.
3	SCL	I	I2C clock signal.
4	SDA	I/O	I2C data signal.
5	/INT	O	Interrupt signal, active low, asserted to request Host start a new transaction.
6	/RST	I	External reset signal, active low.

Outline Drawing

