

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
- 8 bit LVDS Interface
- LED driver circuit is built in this module to provide PWM Dimmer function.
- 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	Clear(7H)	-
Viewing Direction	Full view angle	-
Outline Dimension	118.5(W)×77.55(H)×8.01(D)	mm
Weight	(100)	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	5.0	V	-

LED Driver Absolute Maximum Ratings

(Ta=25±2°C)

Item	Symbol	Value		Unit	Note
		Min.	Max.		
LED Driver Supply Voltage	V _{LED}	-0.3	17	V	(1)
LED Driver PWM	BLEN	-0.3	6	V	(1)

Note (1) Permanent damage to the device may occur if maximum values are exceeded or reverse voltage is loaded.

Electrical Characteristics TFT-LCD Module

(Ta=25±2°C)

Item	Symbol	Value			Unit	Note
		Min.	Typ.	Max.		
Power Supply Voltage	V _{CC}	3.0	3.3	3.6	V	-
Power Supply Current	I _{CC}	-	115	161	mA	(1)
Differential Input High Threshold Voltage	V _{TH}	-	-	100	mV	-
Differential Input Low Threshold Voltage	V _{TL}	-100	-	-	mV	-
Power Consumption	P _L	-	380	532	mW	(1)
VSYNC Frequency	F _V	-	60	-	Hz	-
DCLK Frequency	DCLK	-	33.26	-	MHz	-

Note (1) The specified power consumption is under the conditions at V_{CC}=3.3V, F_V=60Hz, 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.		
Voltage of LED Driver Unit	V _{LED}	11.5	12.0	12.5	V	-
Current of LED Driver Unit	I _{LED}	-	170	238	mA	V _{LED} =12V、 B/L=60mA
Voltage of LED Driver Unit	V _{LED}	4.5	5.0	5.5	V	-
Current of LED Driver Unit	I _{LED}	-	390	546	mA	V _{LED} =5V、 B/L=60mA
PWM Signal Low Voltage	V _{PWML}	0	-	0.4	V	-
PWM Signal High Voltage	V _{PWMH}	1.4	-	5.5	V	-
PWM frequency	f _{PWM}	100	-	1000	Hz	-
LED Life Time(25°C)	-	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}	0.7 V _{TP}	-	V _{TP}	V	-
Input Low Threshold Voltage	V _{IL}	-0.3	-	0.3 V _{TP}	V	-
Output High Threshold Voltage	V _{OH}	0.7 V _{TP}	-	-	V	-
Output Low Threshold Voltage	V _{OL}	-	-	0.3 V _{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: HIROSE DF19G-30P-1H

Pin No.	Symbol	I/O	Description
1	V _{CC}	I	Power supply
2	V _{CC}	I	Power supply
3	GND	I	Ground
4	GND	I	Ground
5	RIN3+	I	LVDS Signal (+) Channel 3
6	RIN3-	I	LVDS Signal (-) Channel 3
7	GND	I	Ground
8	RCLK+	I	LVDS Clock Signal (+)
9	RCLK-	I	LVDS Clock Signal (-)
10	GND	I	Ground
11	RIN2+	I	LVDS Signal (+) Channel 2
12	RIN2-	I	LVDS Signal (-) Channel 2
13	GND	I	Ground
14	RIN1+	I	LVDS Signal (+) Channel 1
15	RIN1-	I	LVDS Signal (-) Channel 1
16	GND	I	Ground
17	RIN0+	I	LVDS Signal (+) Channel 0
18	RIN0-	I	LVDS Signal (-) Channel 0
19	GND	I	Ground
20	GND	I	Ground
21	NC	I	Not Connection
22	NC	I	Not Connection
23	NC	I	Not Connection

24	NC	I	Not Connection
25	BLEN	I	Note 1
26	NC	I	Not Connection
27	V _{LED}	I	LED driver power supply
28	V _{LED}	I	LED driver power supply
29	GND	I	Ground
30	GND	I	Ground

Note 1: On/Off Control Input and Dimming Command Input.

A voltage greater than 0.7V will turn on the chip.

When the BLEN pin voltage rises from 0.7V to 1.4V, The LED current will change from 0% to 100% of the maximum LED current.

To use PWM dimming, apply a 100Hz to 1kHz square wave signal with amplitude greater than 1.4V to this pin.

Projected Capacitive Touch

Connector: CVILUX CF25101D0R0-05

Pin No.	Symbol	I/O	Description
1	GND	I	System ground.
2	V _{TP}	I	Power supply.
3	/RST	I	External reset signal, active low.
4	/INT	O	Interrupt signal, active low, asserted to request Host start a new transaction.
5	SDA	I/O	I2C data signal.
6	SCL	I	I2C clock signal.
7	NC	-	Not Connection
8	NC	-	Not Connection
9	NC	-	Not Connection
10	GND	I	System ground.

