SMART DISPLAY SPECIFICATION



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

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SPECIFICATION

CUSTOMER : _____

MODEL NO. : WL0F00035000XGAABSA00-FC

APPROVED BY: (FOR CUSTOMER USE ONLY)	

SALES BY	APPROVED BY	CHECKED BY	PREPARED BY
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VERSION	DATE	REVISED PAGE NO.	SUMMARY
0	2023/03/29		First Issue

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RECORDS OF REVISION			**DOC. FIRST ISSUE**
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Summary

3.5 Inch Smart Display Feature

1. DC 5V working voltage, low power consumption for USB to drive.
2. Self-testing after booting function.
3. CAN bus communication interface.
4. Supports CUSTOM CAN ID protocol, default baud rate at 250KB.
5. Built in flash memory, store the font and Object Dictionary Data.
6. Support capacitive touch panel(CTP).
7. Smart Display scenario is slave device display and action from Master Device instruction.
8. Embedded buzzer controlled by Master Device.
9. Demo set HOST can be used on multiple platforms, such as Computer (with USB to CAN Dongle), MCU, Raspberry Pi (with PiCAN2).

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Product information

Mechanical Data

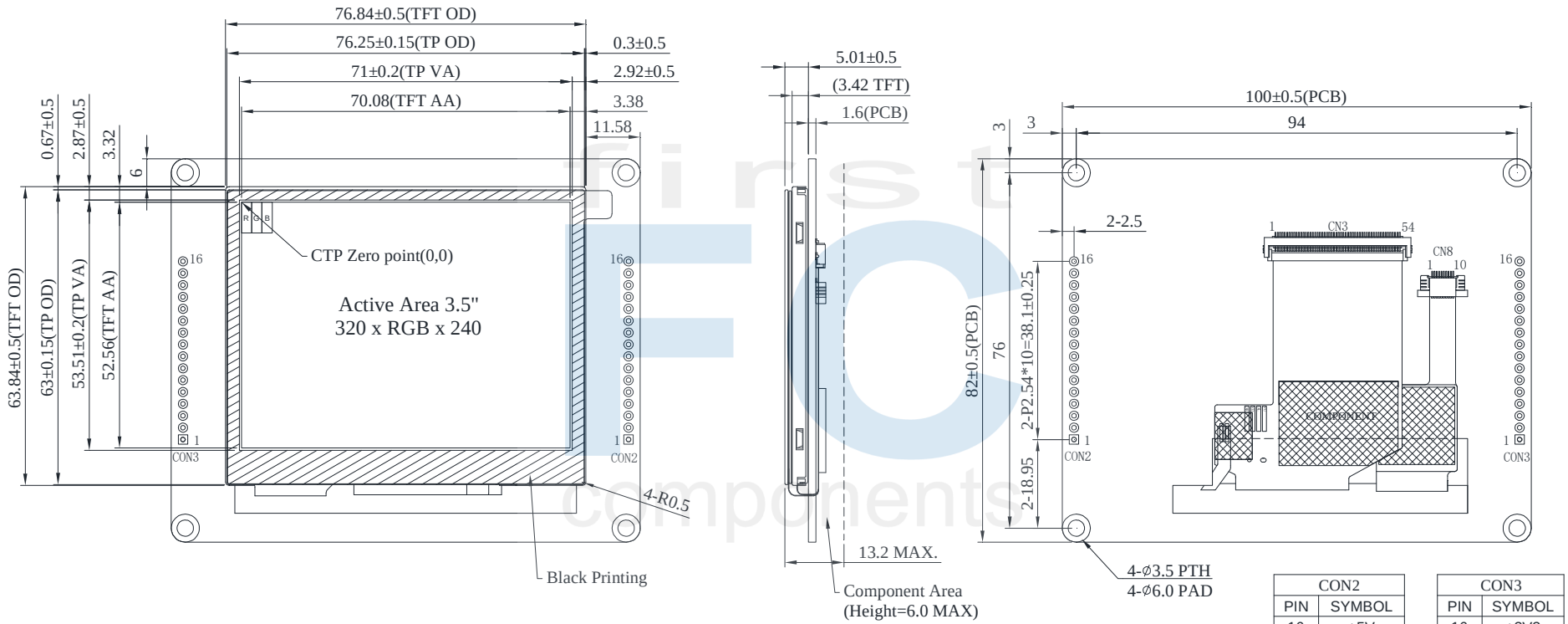
Item	Standard Value	Unit
LCD panel	76.84(W)*63.84(H)*4.53	mm
PCB	100(W)*82(H)*1.6	mm
Housing outline	NA	mm

General information

Item	Standard Value	Unit
Operating voltage	5	Vdc
Communication Interface	CAN bus differential ± 3.3	Vpp
MCU	STM32F750	N/A
Flash Memory	16	MB
SDRAM Frequency	108	MHz
LCD display size	3.5	inch
Dot Matrix	320× 3(RGB) × 240	dot
Module dimension	76.84(W) x 63.84(H) x 4.53(D)	mm
Active area	70.08(W) x 52.56(H)	mm
Dot pitch	0.073(W) x 0.219(H)	mm
LCD type	TFT, Normally Black, Transmissive	
View Direction	80/80/80/80	
Aspect Ratio	4:3	
With /Without TP	With CTP	
Surface	Glare	

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Contour Drawing



CON2	
PIN	SYMBOL
16	+5V
15	GND
14	CAN_H
13	CAN_L
12	GND
11	GND
10-1	NC

CON3	
PIN	SYMBOL
16	+3V3
15	SWCLK
14	GND
13	SWDIO
12	NRST
11	SWO
10-1	NC

The non-specified tolerance of dimension is ±0.3mm.

Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-20	—	+70	℃
Storage Temperature	TST	-30	—	+80	℃

Note: Device is subject to be damaged permanently if stresses beyond those absolute maximum ratings listed above

1. Temp. ≦60℃, 90% RH MAX. Temp.＞60℃, Absolute humidity shall be less than 90% RH at 60℃

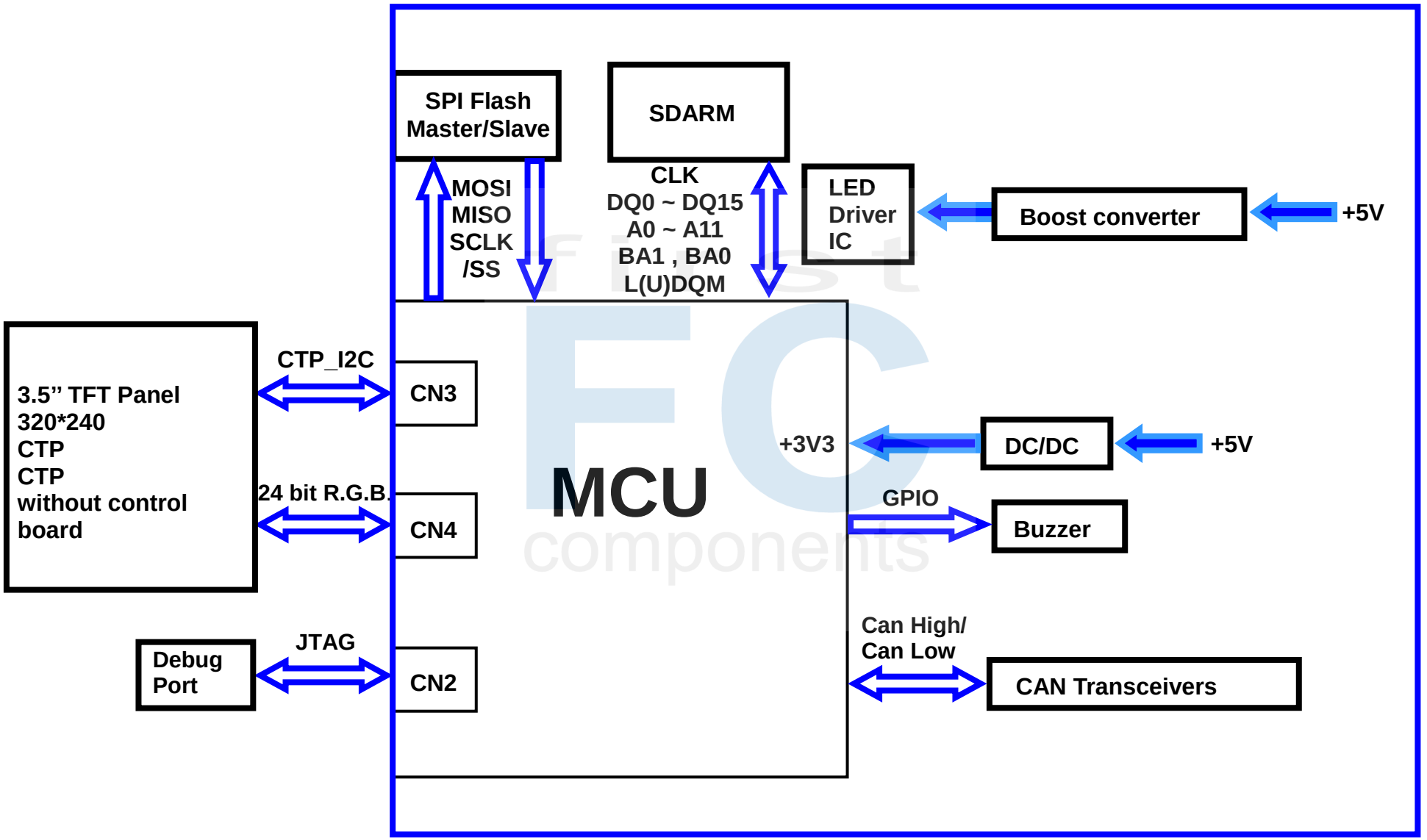
Electrical Characteristics

Item	Symbol	Min	Typ	Max	Unit	Remark
Supply Voltage	VCC	4.5	5-	5.5	V	
Supply Current	ICC	-	250		mA	

BOM

Item	Description	Remark
LCM	WF35-320240XD#0P3-FC	
PCBA	SV100035000XA00N0100	

Block diagram



Interface

CON2 definition:

Pin	Symbol	Function	Remark
16	+5V	Power supply 5V input	Input
15	GND	Power supply GND input	Input
14	CAN_High	CAN bus D+	I/O
13	CAN_Low	CAN bus D-	I/O
12	GND	Power supply GND input	Input
11	GND	Power supply GND input	Input
10-1	NC	Connection	-

CON3 definition:

Pin	Symbol	Function	Remark
16	VMCU	3.3V power for JTAG interface	Output
15	JTAG_SWCLK	CLK pin for JTAG interface	Input
14	GND	GND for JTAG interface	Output
13	JTAG_SWDI	Data pin for JTAG interface	I/O
12	NRST	Reset pin for JTAG interface	Input
11	JTAG_SWDO	Data pin for JTAG interface	I/O
11-1	NC	Connection	-

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Reliability

Content of Reliability Test (Wide temperature, -20℃~70℃)

Environmental Test			
Test Item	Content of Test	Test Condition	Note
High Temperature storage	Endurance test applying the high storage temperature for a long time.	80℃ 200hrs	2
Low Temperature storage	Endurance test applying the low storage temperature for a long time.	-30℃ 200hrs	1,2
High Temperature Operation	Endurance test applying the electric stress (Voltage & Current) and the thermal stress to the element for a long time.	70℃ 200hrs	___
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-20℃ 200hrs	1
High Temperature/ Humidity Operation	The module should be allowed to stand at 40℃,90%RH max	60℃,90%RH 96hrs	1,2
Thermal shock resistance	The sample should be allowed stand the following 10 cycles of operation -20℃ 25℃ 70℃ 30min 5min 30min 1 cycle	-20℃/70℃ 10 cycles	___
Vibration test	Endurance test applying the vibration during transportation and using.	Total fixed amplitude : 1.5mm Vibration Frequency : 10~55Hz One cycle 60 seconds to 3 directions of X,Y,Z for Each 15 minutes	3
Static electricity test	Endurance test applying the electric stress to the terminal.	VS=±2KV~±6KV(contact),±2KV~±8KV (air), RS=330Ω CS=150pF 10 times	___

Note1: No dew condensation to be observed.

Note2: The function test shall be conducted after 4 hours storage at the normal Temperature and humidity after remove from the test chamber.

Note3: The packing have to including into the vibration testing.

Product inspection check list

Check samples by meter V_{IN}, I_{system}

Item	No 1	No 2	No 3	Note
V_{IN} (V)	5	5	5	
I_{System}(mA)	-	-	-	

Check sample Reliability Test

Item	Result	Note
Thermal shock		-20℃/70℃ 20 cycles
High Temperature Operation	PASS_20210406	80℃ 200hrs
Low Temperature Operation	PASS_20210305	-30℃ 200hrs
Static electricity test		VS=±2KV~±6KV(contact),±2KV~±8KV (air), RS=330Ω CS=150pF 10 times
Vibration test	–	Total fixed amplitude : 1.5mm Vibration Frequency : 10~55Hz One cycle 60 seconds to 3 directions of X,Y,Z for Each 15 minutes

- Prepare sets for testing

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