Graphic Display Module

Part Number

G248128B-FT3-DS63

Overview:

- 248x128 Graphic LCD
- FSTN / Positive
- 84.48x57.28 Module
- RGB LED Backlight

- Transflective
- Wide Temp Range
- 6:00 Viewing Angle
- Driver: ST75256
- RoHS Compliant

Graphic LCD Features
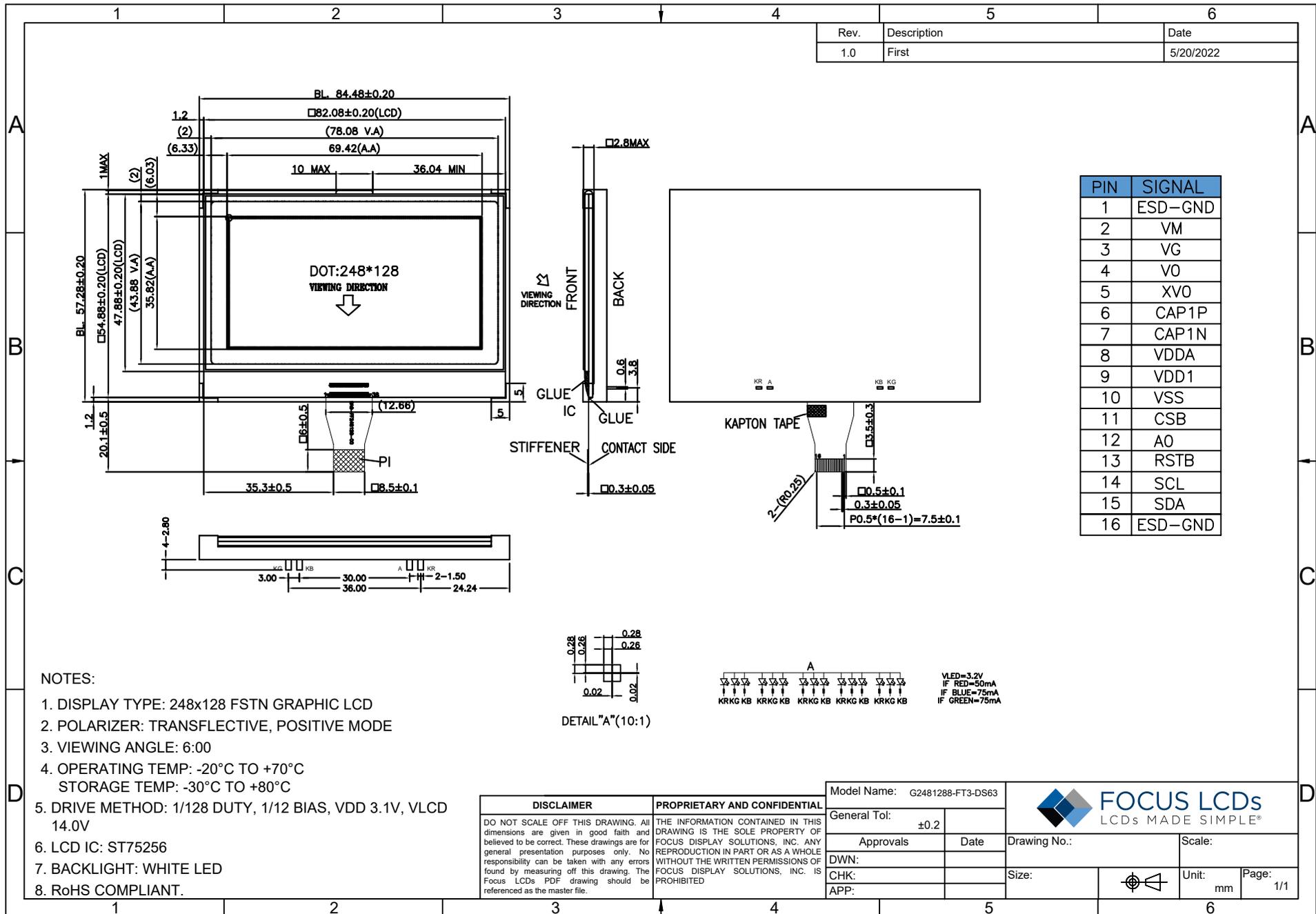
Resolution: 248x128 Dots
Interface(s): Serial
RoHS Compliant.

General Information Items	Specification	Unit	Note
	Main Panel		
Viewing Area (VA)	78.08 (H) x 43.88 (V)	mm	--
LCD Type	FSTN Positive	--	--
Viewing Angle	6:00	O'Clock	--
Polarizer	Transflective	--	--
Resolution	248x128	Dots	--
Backlight Type	LED	--	--
Backlight Color	RGB	mm	--
LCD IC	ST75256	--	--
Operating Temperature	-20 to +70	°C	--
Storage Temperature	-30 to +80	°C	--

Mechanical Information

Item		Min.	Typ.	Max.	Unit	Note
Module Size	Horizontal (H)	--	84.48	--	mm	--
	Vertical (V)	--	57.28	--	mm	--
	Depth (D)	--	6.50	--	mm	--
Weight		--	TBD	--	g	--

1. Outline Dimensions

Rev.	Description	Date
1.0	First	5/20/2022

PIN	SIGNAL
1	ESD−GND
2	VM
3	VG
4	V0
5	XV0
6	CAP1P
7	CAP1N
8	VDDA
9	VDD1
10	VSS
11	CSB
12	A0
13	RSTB
14	SCL
15	SDA
16	ESD−GND

DOT:248*128

VIEWING DIRECTION

VLED=3.2V
IF RED=50mA
IF BLUE=75mA
IF GREEN=75mA

DETAIL"A"(10:1)

NOTES:

1. DISPLAY TYPE: 248x128 FSTN GRAPHIC LCD

2. POLARIZER: TRANSFLECTIVE, POSITIVE MODE

3. VIEWING ANGLE: 6:00

4. OPERATING TEMP: -20°C TO +70°C
   STORAGE TEMP: -30°C TO +80°C

5. DRIVE METHOD: 1/128 DUTY, 1/12 BIAS, VDD 3.1V, VLCD 14.0V

6. LCD IC: ST75256

7. BACKLIGHT: WHITE LED

8. RoHS COMPLIANT.

Model Name: G2481288-FT3-DS63

General Tol: ±0.2

Approvals	Date
DWN:	
CHK:	
APP:	

Drawing No.:

Size:

Scale:

Unit: mm

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2. Input Terminal Pin Assignment

NO.	Symbol	Description
1	ESD-GND	GND
2	VM	VM is the I/O pin of LCD bias supply voltage.
3	VG	VG is the power of SEG-drivers.
4	V0	Positive operating voltage of COM-drivers
5	XV0	Negative operating voltage of COM-drivers
6	CA1P	DC/DC voltage converter. Connect a capacitor between CA1P and CA1N.
7	CA1N	
8	VDDA	Power
9	VDD1	
10	VSS	GND
11	CSB	Chip select input pin.
12	A0	Determines whether the access is related to data or command
13	RSTB	Reset pin
14	SCL	Serial input clock
15	SDA	Serial input/output data
16	ESD-GND	GND

3. LCD Optical Characteristics

Item		Symbol	Condition	Min	Typ.	Max	Unit
Contrast Ratio		CR		--	3	--	
Response Time	On	T_{on}		--	150	250	ms
	Off	T_{off}		--	180	300	ms
Viewing Angle $C_1 \geq 2$, 25°C	Hor.	Θ_L	Φ=270°, 9H	--	55	--	degree
		Θ_R	Φ=90°, 3H	--	55	--	
	Ver.	Θ_T	Φ=180°, 12H	--	40	--	
		Θ_B	Φ=0°, 6H	--	70	--	

4. Electrical Characteristics

4.1 Absolute Maximum Rating

Characteristics	Symbol	Min	Max	Unit
Supply Voltage	VDD	-0.3	4.0	V
	Vout	-0.3	15.0	V
Operating Temperature	TOPR	-20	+70	°C
Storage Temperature	TST	-30	+80	°C

NOTE: If the absolute maximum rating of the above parameters is exceeded, even momentarily, the quality of the product may be degraded. Absolute maximum ratings specify the values which the product may be physically damaged if exceeded. Be sure to use the product within the range of the absolute maximum ratings.

4.2 DC Electrical Characteristics

Characteristics		Symbol	Condition	Min	Typ.	Max	Unit
LCD Driving Voltage		VLCD		--	14.0	--	V
Supply Voltage		Logic	VDD-GND	--	3.1	--	V
Input Voltage	H Level	VDD		0.8VDD	--	VDD	V
	L Level	VIH		VSS	--	0.2VDD	V

Condition:

1. VDD = 3.1V
2. 1/28Duty, 1/12 Bias

5.0 Timing Characteristics

For more information on the timing characteristics of this display, please see the specification for ST75256 at: https://focuslcds.com/content/ST75256.pdf

6.0 Quality Information

For more information on quality inspection performance, please visit

https://focuslcds.com/content/LCD%20Quality%20Inspection%20Standards.pdf

7.0 Cautions and Handling Precautions

7.1 Handling and Operating the Module

1. When the module is assembled, it should be attached to the system firmly. Do not warp or twist the module during assembly work.

2. Protect the module from physical shock or any force. In addition to damage, this may cause improper operation or damage to the module and back-light unit.

3. Note that polarizer is very fragile and could be easily damaged. Do not press or scratch the surface.

4. Do not allow drops of water or chemicals to remain on the display surface. If you have the droplets for a long time, staining and discoloration may occur.

5. If the surface of the polarizer is dirty, clean it using some absorbent cotton or soft cloth.

6. The desirable cleaners are water, IPA (Isopropyl Alcohol) or Hexane. Do not use ketene type materials (ex. Acetone), Ethyl alcohol, Toluene, Ethyl acid or Methyl chloride. It might permanent damage to the polarizer due to chemical reaction.

7. If the liquid crystal material leaks from the panel, it should be kept away from the eyes or mouth. In case of contact with hands, legs, or clothes, it must be washed away thoroughly with soap.

8. Protect the module from static; it may cause damage to the CMOS ICs.

9. Use fingerstalls with soft gloves in order to keep display clean during the incoming inspection and assembly process.

10. Do not disassemble the module.

11. Protection film for polarizer on the module shall be slowly peeled off just before use so that the electrostatic charge can be minimized.

12. Pins of I/F connector shall not be touched directly with bare hands.

13. Do not connect, disconnect the module in the "Power ON" condition.

14. Power supply should always be turned on/off by the item Power On Sequence & Power Off Sequence.

7.2 Storage and Transportation

1. Do not leave the panel in high temperature, and high humidity for a long time. It is highly recommended to store the module with temperature from 0 to 35 ℃ and relative humidity of less than 70%

2. Do not store the TFT-LCD module in direct sunlight.

3. The module shall be stored in a dark place. When storing the modules for a long time, be sure to adopt effective measures for protecting the modules from strong ultraviolet radiation, sunlight, or fluorescent light.

4. It is recommended that the modules should be stored under a condition where no condensation is allowed. Formation of dewdrops may cause an abnormal operation or a failure of the module. In particular, the greatest possible care should be taken to prevent any module from being operated where condensation has occurred inside.

5. This panel has its circuitry FPC on the bottom side and should be handled carefully in order not to be stressed.

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