



RAYSTAR

曜凌光電股份有限公司

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RFA180F-ALW-DNN

SPECIFICATION

General Specifications

- Size: 1.77 inch
- Dot Matrix: 128 x RGB x 160(TFT) dots
- Module dimension: 34.0(W) x 45.83(H) x 2.65(D) mm
- Active area: 28.03 x 35.04 mm
- Dot pitch: 0.073 x 0.219 mm
- LCD type: TFT, Normally White, Transmissive
- View Direction: 6 o'clock
- Gray Scale Inversion Direction: 12 o'clock
- Aspect Ratio: Portrait
- IC: ST7735S
- Backlight Type: LED, Normally White
- Touch Panel: Without Touch Panel
- Surface: Anti-Glare

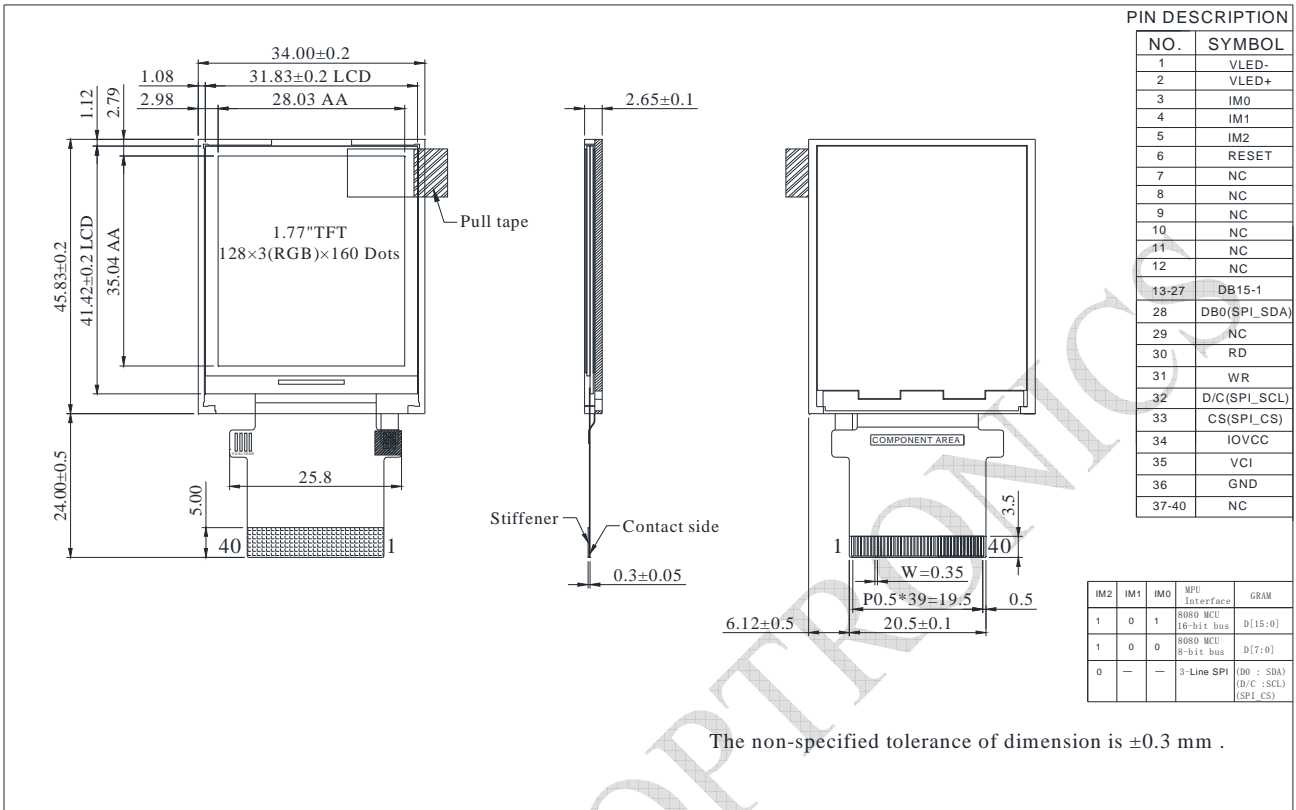
*Color tone slight changed by temperature and driving voltage.

Interface

LCM PIN Definition

Pin	Symbol	I/O	Function															
1	VLED-	P	Back light cathode															
2	VLED+	P	Back light anode															
3	IM0	I	- MCU Parallel Interface Type Selection -If Not Used, Please Fix this Pin at VDDI or DGND Level. <table border="1" data-bbox="603 528 1267 741"> <thead> <tr> <th>IM1</th> <th>IM0</th> <th>Parallel Interface</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>MCU 8-bit Parallel</td> </tr> <tr> <td>0</td> <td>1</td> <td>MCU 16-bit Parallel</td> </tr> <tr> <td>1</td> <td>0</td> <td>MCU 9-bit Parallel</td> </tr> <tr> <td>1</td> <td>1</td> <td>MCU 18-bit Parallel</td> </tr> </tbody> </table>	IM1	IM0	Parallel Interface	0	0	MCU 8-bit Parallel	0	1	MCU 16-bit Parallel	1	0	MCU 9-bit Parallel	1	1	MCU 18-bit Parallel
IM1	IM0			Parallel Interface														
0	0	MCU 8-bit Parallel																
0	1	MCU 16-bit Parallel																
1	0	MCU 9-bit Parallel																
1	1	MCU 18-bit Parallel																
4	IM1																	
5	IM2	I	MCU Parallel Interface Bus and Serial Interface select IM2='1', Parallel Interface IM2='0', Serial Interface															
6	RESET	P	Reset signal															
7-12	NC	-	No Connect															
13-28	DB15-DB0(SPI_SDA)	I/O	DB15:0] are used as MCU parallel interface data bus. -DB is the serial input/output signal in serial interface mode. -In serial interface, DB15:1] are not used and should be fixed at VDDI or DGND level.															
29	NC	-	No Connect															
30	RD	I	Read Enable in 8080 MCU Parallel Interface. -If not used, please fix this pin at VDDI or DGND level.															
31	WR	I	Serial clock -Write Enable in MCU Parallel Interface. -If not used, please fix this pin at VDDI or DGND level.															
32	D/C(SPI_SCL)	I	-Display data/command Selection Pin in MCU Interface. -D/CX='1': Display Data or Parameter. -D/CX='0': Command Data. -In Serial Interface, this is used as SCL. -If not used, please fix this pin at VDDI or DGND level.															
33	CS(SPI_CS)	I	Chip enable															
34	IOVCC	P	Interface Operation Voltage															
35	VCI	P	Analog Supply Voltage															
36	GND	P	Ground															
37-40	NC	-	No Connect															

Contour Drawing



PIN DESCRIPTION

NO.	SYMBOL
1	VLED-
2	VLED+
3	IM0
4	IM1
5	IM2
6	RESET
7	NC
8	NC
9	NC
10	NC
11	NC
12	NC
13-27	DB15-1
28	DB0(SPI_SDA)
29	NC
30	RD
31	WR
32	D/C(SPI_SCL)
33	CS(SPI_CS)
34	IOVCC
35	VCI
36	GND
37-40	NC

IM2	IM1	IM0	MPU Interface	GRAM
1	0	1	8080 MCU 16-bit bus	D[15:0]
1	0	0	8080 MCU 8-bit bus	D[7:0]
0	-	-	3-Line SPI	(D0 : SDA) (D/C : SCL) (SPI CS)

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

RAYSTAR OPTICS

Absolute Maximum Ratings

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

Electrical Characteristics

Operating conditions

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Analog	VCI	—	2.5	2.75	4.8	V
Interface Operation Voltage	IOVCC	—	1.65	1.8	3.7	V
Supply LCM current	ICI(mA)	—	-	0.9	2	mA

LED driving conditions

Parameter	Symbol	Min	Typ	Max	Unit
LED current		-	40	-	mA
Power Consumption			128	-	mW
LED voltage	VBL+	2.9	3.2	3.4	V
LED Life Time		-	50,000	-	Hr