



RAYSTAR

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RAYSTAR OPTRONICS, INC.

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RFS390Q-EIW-DBN

SPECIFICATION

General Specifications

- Size: 3.9 inch
- Dot Matrix: 480x128 x RGB (TFT) dots
- Module dimension: 122.0 x 44.0 x 7.5(max) mm
- Active area: 95.04 x 25.34 mm
- Dot pitch: 0.066(W)x 0.198(H) mm
- LCD type: TFT, Normally White, Transmissive
- View Direction: 12 o'clock
- Gray Scale Inversion Direction: 6 o'clock
- Aspect Ratio: Bar Type
- TFT Driver IC: SSD1963
- TFT Interface: Digital 8080 family MPU 8bit/16bit
- Backlight Type: LED, Normally White
- Color arrangement: RGB-STRIFE
- With /Without TP: Without Touch Panel
- Surface: Anti-Glare

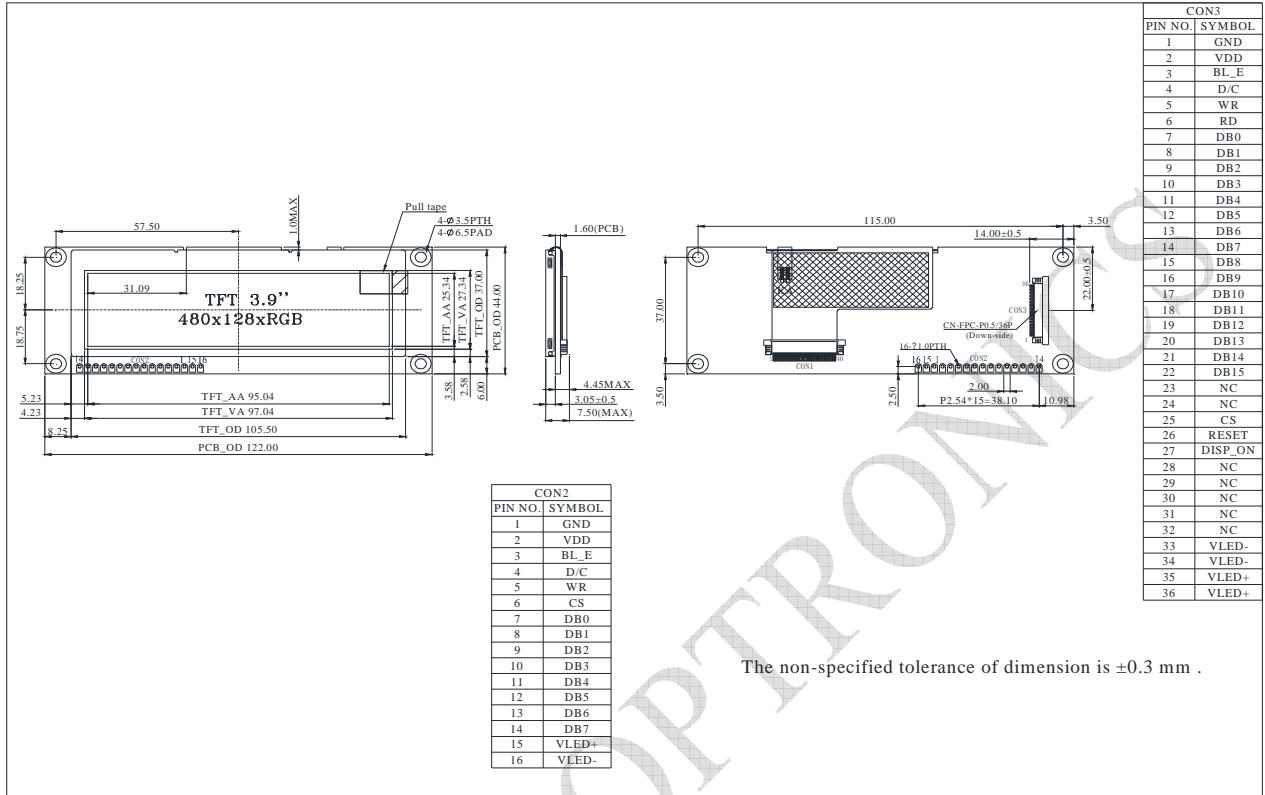
*Color tone slight changed by temperature and driving voltage.

Interface

LCM PIN Definition

| Pin | Symbol | Function |
|-----|---------|---|
| 1 | GND | System round pin of the IC. Connect to system ground. |
| 2 | VDD | Power Supply : +3.3V |
| 3 | BL_E | Backlight control signal , H: On \ L: Off |
| 4 | D/C | Data/Command select |
| 5 | WR | Write strobe signal |
| 6 | RD | Read strobe signal |
| 7 | DB0 | Data bus |
| 8 | DB1 | Data bus |
| 9 | DB2 | Data bus |
| 10 | DB3 | Data bus |
| 11 | DB4 | Data bus |
| 12 | DB5 | Data bus |
| 13 | DB6 | Data bus |
| 14 | DB7 | Data bus |
| 15 | DB8 | Data bus (When select 8bits mode, this pin is NC) |
| 16 | DB9 | Data bus (When select 8bits mode, this pin is NC) |
| 17 | DB10 | Data bus (When select 8bits mode, this pin is NC) |
| 18 | DB11 | Data bus (When select 8bits mode, this pin is NC) |
| 19 | DB12 | Data bus (When select 8bits mode, this pin is NC) |
| 20 | DB13 | Data bus (When select 8bits mode, this pin is NC) |
| 21 | DB14 | Data bus (When select 8bits mode, this pin is NC) |
| 22 | DB15 | Data bus (When select 8bits mode, this pin is NC) |
| 23 | NC | No connect |
| 24 | NC | No connect |
| 25 | CS | Chip select |
| 26 | RESET | Hardware reset |
| 27 | DISP_ON | Display on/off control |
| 28 | NC | No connect |
| 29 | NC | No connect |
| 30 | NC | No connect |
| 31 | NC | No connect |
| 32 | NC | No connect |
| 33 | VLED- | VLED- for B/L LED inverter (GND) |
| 34 | VLED- | VLED- for B/L LED inverter (GND) |
| 35 | VLED+ | VLED+ for B/L LED inverter (+5V) |
| 36 | VLED+ | VLED+ for B/L LED inverter (+5V) |

Contour Drawing



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: (CON3.Pin1=GND, Pin2=VDD)

| Item | Symbol | Min | Typ | Max | Unit |
|------------------------|--------|-----|-----|-----|------|
| Supply Voltage For LCM | VDD | 3.0 | 3.1 | 3.3 | V |
| Supply Current For LCM | IDD | — | 200 | — | mA |

Backlight driving conditions (CON3.Pin33,34=VLED-, Pin35,36=VLED+)

| Item | Symbol | Min | Typ | Max | Unit |
|----------------------------------|---------|-----|--------|-----|------|
| Operation Current For LED Driver | VLED=5V | - | 150 | - | mA |
| Supply Voltage For LED Driver | VLED+ | - | 5 | - | V |
| LED Life Time | | - | 50,000 | - | Hr |