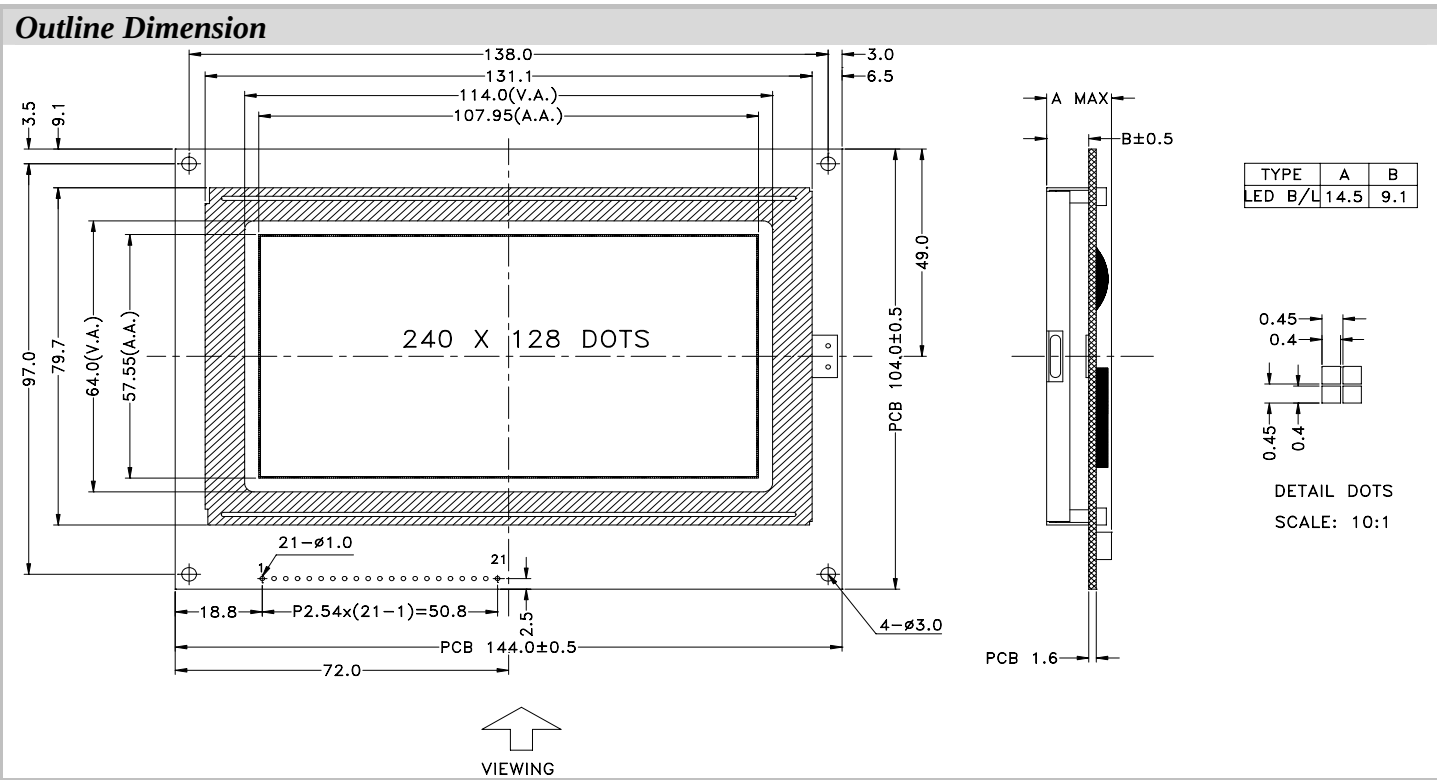


KLS9-240128A

240x128 Graphic Type LCD Module



Graphic Type

Feature:

- 1、240x128 dot-matrix
- 2、STN/Transflective/Positive/Y-G
- 3、Backlight: Yellow-green/bottom Backlight
- 4、Operating Temp.: -20℃~+70℃
- 5、1/128 duty cycle, 1/12 Bias
- 6、Built-in Controller (T6963C or equivalent)
- 7、Viewing angle: 6 o'clock

Absolute Maximum Rating:

| Item                   | Symbol                           | Standard value  |                 |                      | Unit |
|------------------------|----------------------------------|-----------------|-----------------|----------------------|------|
|                        |                                  | M <sub>IN</sub> | T <sub>YP</sub> | M <sub>AX</sub>      |      |
| Power supply for logic | V <sub>DD</sub> -V <sub>SS</sub> | -0.3            | --              | 7.0                  | V    |
| Input voltage          | V <sub>I</sub>                   | -0.3            | --              | V <sub>DD</sub> +0.3 | V    |

Electrical Characteristic: (V<sub>SS</sub>=0V, T<sub>a</sub> = 25℃)

| Parameter                    | Symbol           | Condition | M <sub>IN</sub> | T <sub>YP</sub> | M <sub>AX</sub> | Unit |
|------------------------------|------------------|-----------|-----------------|-----------------|-----------------|------|
| Supply voltage for logic     | V <sub>DD</sub>  | --        | 4.8             | 5.0             | 5.2             | V    |
| Supply current for logic     | I <sub>DD</sub>  | --        | --              | 20              | --              | mA   |
| Operating voltage for LCD    | V <sub>LCD</sub> | -20℃      | --              | --              | --              | V    |
|                              |                  | +25℃      | --              | 15.8            | --              | V    |
|                              |                  | +70℃      | --              | --              | --              | V    |
| Supply voltage for Backlight | V <sub>BL</sub>  | --        | --              | 5.0             | --              | V    |
| Supply current for Backlight | I <sub>BL</sub>  | --        | --              | 720             | --              | mA   |

Interface Pin Connections:

| Pin No. | Symbol  | Level | Description                                                                                                                                                                                                                                                                                                  |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
|---------|---------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---|---|---|---|-----|---|---|---|---|------|-----|-----|-----|-----|
| 1       | FG      | 0V    | Ground for Frame.                                                                                                                                                                                                                                                                                            |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| 2       | GND     | 0V    | Ground output for pad option.                                                                                                                                                                                                                                                                                |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| 3       | VDD     | +5.0V | Supply voltage for logic operating.                                                                                                                                                                                                                                                                          |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| 4       | V0      | --    | Adjusting the LCM display contrast voltage input.                                                                                                                                                                                                                                                            |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| 5       | /WR     | H/L   | Data write. Write data into T6963C when WR=L.                                                                                                                                                                                                                                                                |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| 6       | /RD     | H/L   | Data read. Read data from T6963C when RD=L.                                                                                                                                                                                                                                                                  |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| 7       | /CE     | H/L   | Chip Enable for T6963C. CE must be L when CPU communicates with T6963C.                                                                                                                                                                                                                                      |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| 8       | C/D     | H/L   | WR=L.....C/D=H: Command Write C/D=L: Data Write<br>RD=L.....C/D=H: Status Read C/D=L: Data Read                                                                                                                                                                                                              |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| 9       | /RST    | H/L   | H.....Normal (T6963C has internal pull-up resister)<br>L.....Initialize T6963C. Text and Graphic have addresses and text and graphic area settings are retained.                                                                                                                                             |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| 10      | DB0~DB7 | H/L   | 8-bit bi-directional data bus.                                                                                                                                                                                                                                                                               |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| 11~18   | FS      | H/L   | Pins for selection of font. The pin FS0 has been connected to the LOW in the PCB. <table border="1"><tr><td>FS0</td><td>H</td><td>L</td><td>H</td><td>L</td></tr><tr><td>FS1</td><td>H</td><td>H</td><td>L</td><td>L</td></tr><tr><td>Font</td><td>5×8</td><td>6×8</td><td>7×8</td><td>8×8</td></tr></table> | FS0 | H | L | H | L | FS1 | H | H | L | L | Font | 5×8 | 6×8 | 7×8 | 8×8 |
| FS0     | H       | L     | H                                                                                                                                                                                                                                                                                                            | L   |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| FS1     | H       | H     | L                                                                                                                                                                                                                                                                                                            | L   |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| Font    | 5×8     | 6×8   | 7×8                                                                                                                                                                                                                                                                                                          | 8×8 |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| 19      | VEE     | --    | Internal negative voltage to LCD driving.                                                                                                                                                                                                                                                                    |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| 20      | LED+    | +5.0V | Power supply for Backlight                                                                                                                                                                                                                                                                                   |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |
| 21      | LED-    | 0V    | The backlight ground.                                                                                                                                                                                                                                                                                        |     |   |   |   |   |     |   |   |   |   |      |     |     |     |     |

Adjusting Display Contrast:

