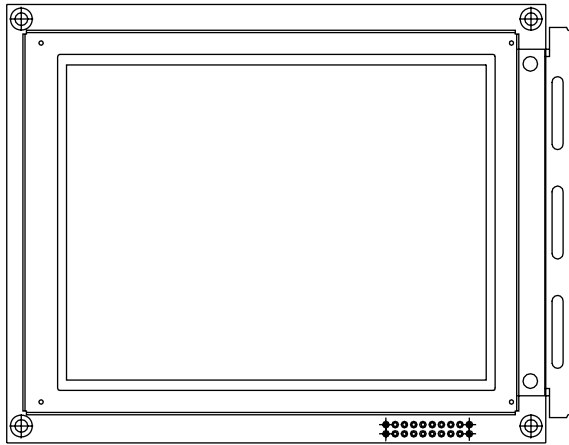


320 x 240 Graphic LCD



FEATURES

- Type: Graphic
- Display format: 320 x 240 dots
- Built-in controller: RA8835 and SRAM
- Duty cycle: 1/240
- Built-in N.V.
- Touch screen option (analog type)
- Temperature compensation option
- Compliant to RoHS directive 2002/95/EC


RoHS
COMPLIANT

| MECHANICAL DATA | | |
|------------------|-----------------|------|
| ITEM | STANDARD VALUE | UNIT |
| Module Dimension | 148.02 x 120.24 | mm |
| Viewing Area | 120.14 x 92.14 | |
| Dot Size | 0.34 x 0.34 | |
| Dot Pitch | 0.36 x 0.36 | |
| Mounting Hole | 139.98 x 116.61 | |
| Character Size | N/a | |

| ABSOLUTE MAXIMUM RATINGS | | | | | |
|--------------------------|----------------------|----------------|------|----------|------|
| ITEM | SYMBOL | STANDARD VALUE | | | UNIT |
| | | MIN. | TYP. | MAX. | |
| Power Supply | V_{DD} to V_{SS} | 4.75 | 5.0 | 5.25 | V |
| Input Voltage | V_I | - 0.3 | - | V_{DD} | |

Note

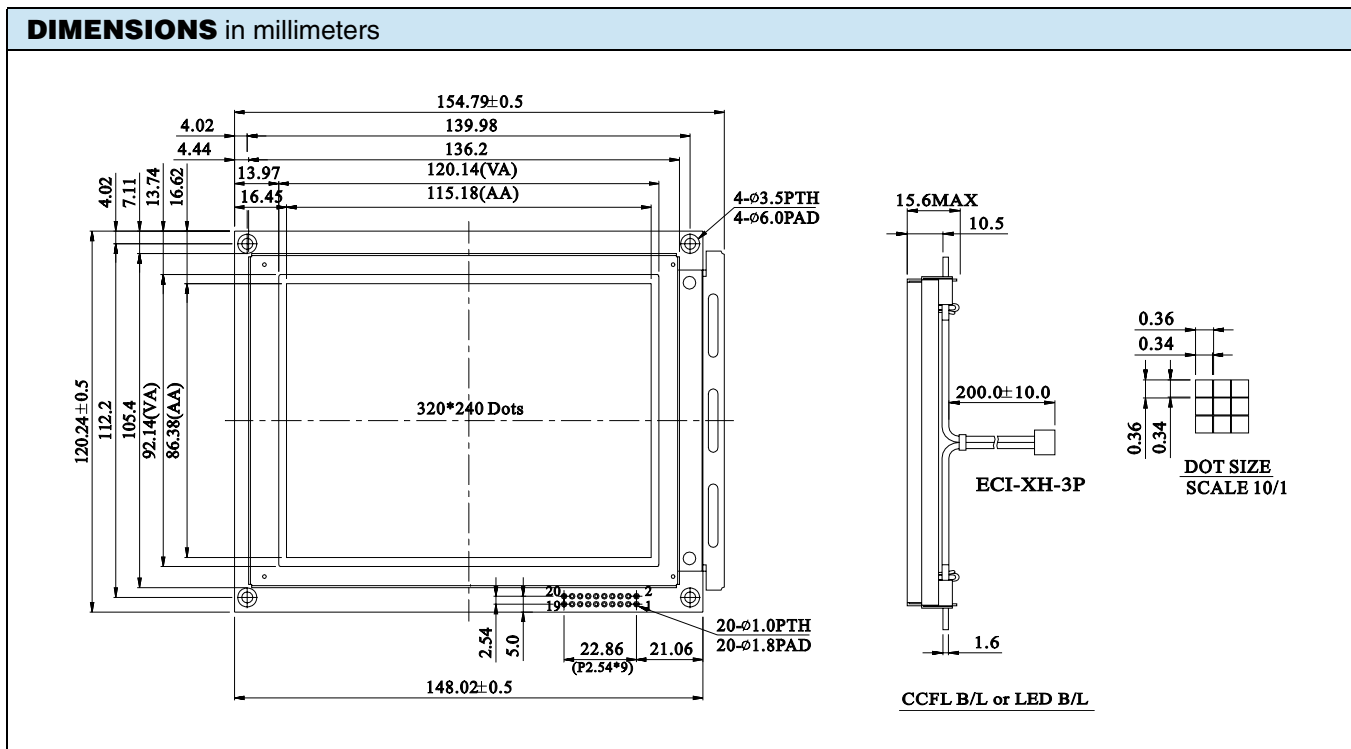
- $V_{SS} = 0$ V, $V_{DD} = 5.0$ V

| ELECTRICAL CHARACTERISTICS | | | | | | |
|--|-------------------|--------------------------------|----------------|------|--------------|------------|
| ITEM | SYMBOL | CONDITION | STANDARD VALUE | | | UNIT |
| | | | MIN. | TYP. | MAX. | |
| Input Voltage | V_{DD} | L level | $0.7 V_{DD}$ | - | V_{DD} | V |
| | V_{IO} | H level | 0 | - | $0.3 V_{DD}$ | |
| Supply Current | I_{DD} | $V_{DD} = + 5.0$ V | - | 100 | 105 | mA |
| Recommended LC Driving Voltage for Normal Temperature Version Module | V_0 to V_{SS} | - 20 °C | - | - | 26.1 | V |
| | | 25 °C | - | 23.8 | - | |
| | | 70 °C | 20.9 | - | - | |
| CCFL Starting Voltage | V_{FLS} | 25 °C | - | 600 | - | V_{RMS} |
| CCFL Driving Voltage | V_{FLD} | 25 °C | - | 268 | - | V_{RMS} |
| CCFL Driving Current | I_{FLD} | $V_{FQ} = 450 V_{RMS}, 30$ kHz | - | 5.0 | - | mA_{RMS} |
| LED Forward Voltage | V_F | 25 °C | - | 4.2 | 4.6 | V |
| LED Forward Current | I_F | 25 °C | - | 180 | 360 | mA |
| EL Power Supply Current | I_{EF} | $V_{EL} = 110 V_{AC}, 400$ Hz | - | - | 5.0 | mA |

| OPTIONS | | | | | | | | | |
|---------------|----------|------------|----------|----------|-----------|-----------|-----|----|------|
| PROCESS COLOR | | | | | | BACKLIGHT | | | |
| TN | STN Gray | STN Yellow | STN Blue | FSTN B&W | STN Color | None | LED | EL | CCFL |
| | | | | | | | | | |

For detailed information, please see the "Product Numbering System" document.

| INTERFACE PIN FUNCTION | | |
|------------------------|------------------|--|
| PIN NO. | SYMBOL | FUNCTION |
| 1 | V _{SS} | Ground |
| 2 | V _{DD} | Power supply for logic |
| 3 | V ₀ | Driving voltage for LCD |
| 4 | \overline{RD} | 8080 family: Read signal/6800 family: Enable clock |
| 5 | \overline{WR} | 8080 family: Write signal/6800 family: R/W signal |
| 6 | A ₀ | Data type select For 80 family: RD = L, WR = H; AO = L: Data read, AO = H: Status read RD = H, WR = L; AO = L: Data write, AO = H: Command write For 68 family: R/W = L; AO = H: Command write, AO = L: Data write R/W = H; AO = H: Status read, AO = L: Data read |
| 7 | DB0 | Date bus line |
| 8 | DB1 | Date bus line |
| 9 | DB2 | Date bus line |
| 10 | DB3 | Date bus line |
| 11 | $\overline{DB4}$ | Date bus line |
| 12 | $\overline{DB5}$ | Date bus line |
| 13 | DB6 | Date bus line |
| 14 | DB7 | Date bus line |
| 15 | CS | Chip select, active L |
| 16 | RES | Controller reset signal, active L |
| 17 | V _{EE} | Negative voltage output (optional) |
| 18 | F _{GND} | Frame ground |
| 19 | NC | No connection |
| 20 | NC | No connection |





Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: ocean@oceanchips.ru

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А