



# Microtips

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## TECHNOLOGY

AN ENGINEERING COMPANY SPECIALIZED IN LIQUID CRYSTAL DISPLAYS AND MODULES

## Semi/Complete Custom LCD Modules

Reduce unit price by using current technology

Exact mechanical matches

2nd source option which is not always possible between TFT manufacturers

Less components on your board or erases the need for a daughter/converter board

### Custom Options include but are not limited to:

External backlight control through A&K or LCD pins  
 Standard & custom wavelength to match logo/other LEDs  
 Low power, high efficiency LEDs for handheld end products  
 Custom LED layout (in parallel or in series)  
 High quality diffusers for single LED backlights



### Touch Screens

4-wire resistive  
 5-wire resistive  
 8-wire resistive  
 Projective capacitive  
 Specify tail location & tail length  
 Integrated touch screen through LCD FPC pins  
 On-board touch screen controller

### Backlight



### Interface Changes

Pin headers  
 Cables  
 Change FPC location  
 Match your connector

### Change Interface Types

TFT - Sync mode to DE or CPU mode  
 Mono - parallel to RS232 or I<sup>2</sup>C  
 Alternative driver IC manufacturers available

Specific size requirements (overall, viewing, or active area)

Chip On Glass to best fit your mechanical restrictions and reduce unit price

Bezel changes including color, shielding, and back metal bezels for TFTs

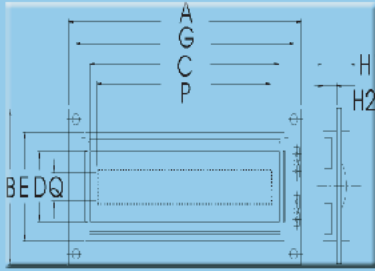
Extended temp glass (-30°C to +80°C operating and -40°C to +85°C storage)

visit [www.microtipsusa.com](http://www.microtipsusa.com) for details

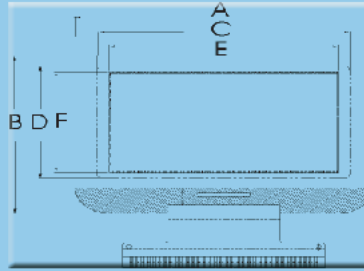
# LCD Customization Options

## Module Structure

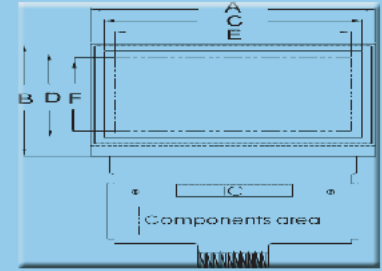
Chip on Board



Chip on Glass



CoF/TAB



## Dimensions

<b>Module Outline:</b>	(A) X (B) mm
<b>Viewing Area:</b>	(C) X (D) mm
<b>Active Area:</b>	(E) X (F) mm
<b>Distance between mounting holes:</b>	(G) X (H) mm
<b>Diameter of mounting holes:</b>	(M) mm
<b>Total thickness:</b>	(H1) mm
<b>Upper thickness:</b>	(H2) mm

## Display Contents

- Segment Type \_\_\_\_\_ Number of Segments
- Character Type \_\_\_\_\_
- \_\_\_\_\_ Number of Characters x \_\_\_\_\_ Number of Lines
- Character size = \_\_\_\_\_ Width x \_\_\_\_\_ Height mm
- Character pitch = \_\_\_\_\_ Width x \_\_\_\_\_ Height mm
- Graphic Type \_\_\_\_\_
- Resolution = \_\_\_\_\_ dots x \_\_\_\_\_ dots
- Character size = \_\_\_\_\_ Width x \_\_\_\_\_ Height mm
- Character pitch = \_\_\_\_\_ Width x \_\_\_\_\_ Height mm

## LCD Specification

- STN  FSTN  TN
- TFT  Color STN
- Mono gray background  Mono yellow background
- Reflective (no backlight)  Transflective  Transmissive (backlight on)
- 6 o'clock view  12 o'clock view  Other view \_\_\_\_\_

## Backlight

- Array LED  Edge lit LED  CCFL
- Yellow/green LED  White LED  EL
- Blue LED  Red LED  Built-in Inverter
- Green LED  Amber LED

## Driver IC

- Serial  Parallel  \_\_\_\_\_ bits
- Segment driver \_\_\_\_\_  Column driver \_\_\_\_\_
- Hsync/Vsync (RGB/TTL)  CPU mode (RGB/TTL)  Data Enable (RGB/TTL)
- IC Manufacturer \_\_\_\_\_  IC model # \_\_\_\_\_

## Controller

- (LCD attached to PCB)  FPC  Heat seal  Metal pins
- (interface)  Rubber  TCP IC  Connector manufacturer
- Through-hole  FPC \_\_\_\_\_
- Straight pin header  Pin pitch \_\_\_\_\_ mm
- Right angle pin header  Pin number \_\_\_\_\_  Connector # \_\_\_\_\_

## Remarks