



## CUSTOM MODULE APPLICATIONS

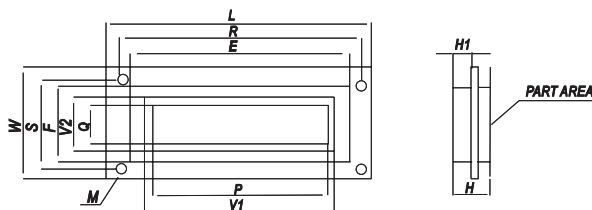
## Glossary

TERM	EXPLANATION
COB (chip on board)	An IC chip is mounted onto a printed circuit board and wire bonding.
COF (chip on fpc)	A chip product is mounted on a FPC.
EL (electro luminescence)	Light generated by an electric field. An EL layer is formed on a high molecular weight film and is used as an EL light source for a liquid crystal display.
FSTN (formulated STN)	An optically compensated film is added to a STN, and is used as a monochrome display.
LED (light emitting diode)	A diode which emits light for Backlight.
PCB (print circuit board)	A printed circuit board.
PFP (plastic film panel)	An LCD using plastic film on a cell base board.
QFP (quad flat package)	A package formed with leads on surfaces oriented in four directions.
QTP (quad tape carrier package)	Four directional type TCP.
SMT (surface mount technology)	Mounting on the surface.
STN (super twisted nematic)	A nematic liquid crystal with a twist of roughly 180 degrees to 270 degrees.
TCP (tape carrier package)	A flexible board printed with a circuit pattern, with ic chips mounted on it.
tf (fall time)	Response speed: falling edge time.
TN (twisted nematic)	A nematic liquid crystal with a twist of roughly 90 degrees, and the type of display that uses it.
TNR (tn with retardation film)	A type of color display which does not use a color filter, made by attaching a phase difference plate to a normal TN panel.
tr (rise time)	Response speed: rising edge time.
Vop (operating voltage)	LCD drive voltage/liquid crystal drive voltage
Vth (threshold voltage)	A threshold voltage.
COG (chip on glass)	An IC chip mounted onto glass.

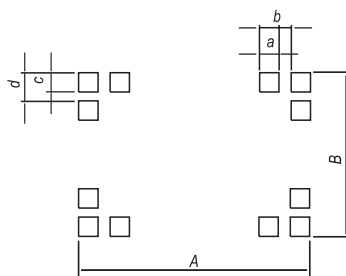
## CHECK LIST FOR CUSTOM DESIGNED LCM

## 1. Dimensions

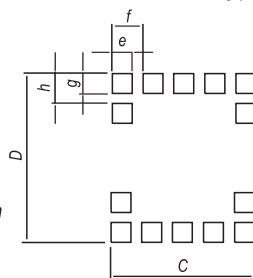
L x W : Module size \_\_\_\_ x \_\_\_\_ mm  
 E x F : Bezel size \_\_\_\_ x \_\_\_\_ mm  
 V1 x V2 : View area \_\_\_\_ x \_\_\_\_ mm  
 P x Q : Display area \_\_\_\_ x \_\_\_\_ mm  
 R : Length between mounting holes \_\_\_\_ mm  
 S : Length between mounting holes \_\_\_\_ mm  
 M : Diameter of mounting hole \_\_\_\_ mm  
 H : Total thickness \_\_\_\_ mm  
 H1 : Upper thickness \_\_\_\_ mm



## 2. Display Resolution

☐ Graphic Type☐ Character Type

Resolution: \_\_\_\_ x \_\_\_\_  
 Dot size: a = \_\_\_\_ mm x c = \_\_\_\_ mm  
 Dot pitch: b = \_\_\_\_ mm x d = \_\_\_\_ mm  
 Active area: a = \_\_\_\_ mm x b = \_\_\_\_ mm



☐ Resolution: \_\_\_\_ characters x \_\_\_\_ lines  
 Font: ☐ 5x7 ☐ 5x8 ☐ 5x11 ☐ 5x7+cursor  
 Dot size: e = \_\_\_\_ mm x g = \_\_\_\_ mm  
 Dot pitch: f = \_\_\_\_ mm x h = \_\_\_\_ mm  
☐ Character size: c = \_\_\_\_ mm x d = \_\_\_\_ mm

## 3. Display mode

\*viewing Angle:(viewing Direction)

☐ 6 O'clock ☐ 12 O'clock ☐ \_\_\_\_ O'clock

\*type

☐ STN ☐ Yellow ☐ Gray ☐ Blue  
☐ FSTN ☐ Normally Black ☐ Normally White  
☐ Others: \_\_\_\_  
☐ Positive Type ☐ Negative Type

Rear Polarizer:

☐ Reflective ☐ Transflective ☐ Transmissive

## 4. Polarizer

\*Visual Specifications

☐ Norml ☐ Anti-glare  
☐ Special Requirement: \_\_\_\_

## 5. Operation voltage

☐ Operation Voltage \_\_\_\_ V  
☐ Multiplexing: 1/ \_\_\_\_ Duty, 1/ \_\_\_\_ Bias  
☐ According To Winstar's Design

\*frame Frequency \_\_\_\_ Hz

## 6. IC

Controller: \_\_\_\_ ☐ Built-in ☐ External  
 Driver: ☐ Segment drive \_\_\_\_  
☐ Common drive \_\_\_\_  
☐ According to Winstar's Design

## 7. Developing schedule

\*Sample: delivery \_\_\_\_ quantity: \_\_\_\_ pcs  
 \*Mass production: delivery \_\_\_\_  
 quantity \_\_\_\_ pcs/month  
 total quantity \_\_\_\_ pcs

## 8. Power Source

☐ Single power supply ☐ 5V ☐ \_\_\_\_ V  
☐ 2 power supplies  
 for logic: VDD-VSS = \_\_\_\_ V  
 for LCD drive: VDD-VO = \_\_\_\_ V

## 9. Contrast Adjustment

\*Method: \_\_\_\_  
☐ Built-in ☐ External

## 10. Temperature range

\*Operating temperature range:  
☐ \_\_\_\_ °C to \_\_\_\_ °C  
 \*Storage temperature range:  
☐ \_\_\_\_ °C to \_\_\_\_ °C