



**SPECIFICATION
FOR
LCD Module**

| | |
|------------------|---------------|
| MODULE: | PV0503TD25D-C |
| CUSTOMER: | |



REVISION STATUS

| Version | Revise Date | Page | Content | Modified by |
|---------|-------------|------|---------------------------------|-------------|
| V1.0 | 2017-1-11 | - | First Issued. | |
| V1.1 | 20180808 | 5 | Update Mechanical Specification | YANG |
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1. General Description

* DESCRIPTION

PV0503TD25D-C is a color active matrix TFT (Thin Film Transistor) LCD (liquid crystal display) that uses amorphous silicon TFT as a switching device. This model is composed of a Transmissive type TFT-LCD Panel, driver circuit, back-light unit. The resolution of a 5.0" TFT-LCD contains 720 x 1280 pixels, and can display up to 16.7M colors.

* Features

- Low Input Voltage: IOVCC: 1.65~3.3V;VCC: 2.5~3.3V
- Display Colors of TFT LCD: 16.7M colors
- Interface: MIPI-4 Lanes
- Internal Power Supply Circuit.

| General Information Items | Specification | Unit | Note |
|---------------------------|--------------------------|---------|------|
| | Main Panel | | |
| Display area(AA) | 62.1(H) *110.4 (V) | mm | - |
| Driver element | a-Si TFT active matrix | - | - |
| Display colors | 16.7M | colors | - |
| Number of pixels | 720(RGB) *1280 | dots | - |
| Pixel arrangement | RGB vertical stripe | - | - |
| Pixel pitch | 0.02875 (H) *0.08625 (V) | mm | - |
| Viewing angle | All | o'clock | - |
| Drive IC | HX8394D | - | - |
| Display mode | Normally black | - | - |
| Operating temperature | -20~+70 | °C | - |
| Storage temperature | -30~+80 | °C | - |

Mechanical Information

| Item | | Min. | Typ. | Max. | Unit | Note |
|-------------|---------------|------|-------|------|------|-------|
| Module size | Horizontal(H) | - | 71.8 | - | mm | ±0.05 |
| | Vertical(V) | - | 131.8 | - | mm | ±0.05 |
| | Depth(D) | - | 2.70 | - | mm | ±0.2 |
| Weight | | - | TBD | - | g | - |



2. MECHANICAL SPECIFICATION

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--------------------------------|--|-------------------|----------|-----------------------------|------------------------------|-------------------------|----------------|-------------------------|--------------------------------|------------------------------|------------------------------|--|----------------------------|-------------------------|---------|-------------------------------|----------------|-----------------------------|----------------|-------------------------------|----------|------------------|----------------|---|--|--------|---------|----------|---|--------|--------|---|---------|--|---|--------|--|---|---------|--|---|-------|--|---|-----|--|---|-----|--|---|-----|--|---|------|--|----|-----|--|----|-----|--|----|-----|--|----|-----|--|----|------|--|----|-----|--|----|-----|--|----|------|--|----|-----|--|----|-----|--|----|------|--|----|------|--|----|-----|--|----|----|--|----|-------|--|----|-------|--|---------|----------|--------------|---|----|--|---|----|--|---|-----|--|---|-----|--|---|------|--|---|------|--|---|-----|--|---|--------|--|--|--|--------|
| <p>一. LENS REQUIRE (Lens Protection):</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>显示类型 (Display mode):</td><td>TFT/Normal, BLACK</td></tr> <tr><td>驱动芯片 (Driver IC):</td><td>H83894D</td></tr> <tr><td>人眼观察视场 (Viewing Direction):</td><td>ALL</td></tr> <tr><td>接口类型 (Interface Types):</td><td>MPI VIDEO MODE</td></tr> <tr><td>背光类型 (Backlight Types):</td><td>12pcs, 6#2#4mm(A20mm)/(LED), 电</td></tr> <tr><td>背光亮度 (Backlight Brightness):</td><td>320 cd/m2 Min, 350 cd/m2 TYP</td></tr> <tr><td>颜色坐标 (Color Coordinate):</td><td>(X=0.29±0.03, Y=0.30±0.03)</td></tr> <tr><td>模组均匀度 (LCD Uniformity):</td><td>80% MIN</td></tr> <tr><td>操作温度 (Operating Temperature):</td><td>-20° C ~ 70° C</td></tr> <tr><td>储存温度 (Storage Temperature):</td><td>-30° C ~ 80° C</td></tr> <tr><td>平面弯曲度 (Plane Warping Degree):</td><td><= 0.3MM</td></tr> <tr><td>连接器 EPC CONTROL:</td><td>PH26-25S-03SHW</td></tr> </table> | 显示类型 (Display mode): | TFT/Normal, BLACK | 驱动芯片 (Driver IC): | H83894D | 人眼观察视场 (Viewing Direction): | ALL | 接口类型 (Interface Types): | MPI VIDEO MODE | 背光类型 (Backlight Types): | 12pcs, 6#2#4mm(A20mm)/(LED), 电 | 背光亮度 (Backlight Brightness): | 320 cd/m2 Min, 350 cd/m2 TYP | 颜色坐标 (Color Coordinate): | (X=0.29±0.03, Y=0.30±0.03) | 模组均匀度 (LCD Uniformity): | 80% MIN | 操作温度 (Operating Temperature): | -20° C ~ 70° C | 储存温度 (Storage Temperature): | -30° C ~ 80° C | 平面弯曲度 (Plane Warping Degree): | <= 0.3MM | 连接器 EPC CONTROL: | PH26-25S-03SHW | <p>二. CTP技术要求 (CTP Technical requirements)</p> <ol style="list-style-type: none"> 产品配置: G+P+F 多点触摸 IC 品牌型号: 汇顶, GT5688; CTP透过率: T > 85% LENS 材质: 旭硝子 0.7MM厚度. Cover Glass表面处理: 抗指纹 (AF Coating); 无表面硬度: ≥ 6H, 翘曲度 <= 0.3mm 所有材料及制程符合 Europe RoHS Specification; 金属合页与前面板保护膜, 后壳保护膜要求向 SF155EC-4 握手且做出LENS外延, 如图露底, 且L1需伸出增加保护. 工作温度: -20° ~ 70° C, 存储温度: -30° ~ 80° C 未注公差按 ±0.20mm管控; 未注倒角按 C0.15 ±0.10mm管控 皆为重点管控尺寸. | <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>MPPI接口</td><td>Pin No.</td><td>Pin Name</td></tr> <tr><td>1</td><td>VDD1/8</td><td></td></tr> <tr><td>2</td><td>LC.D_ID</td><td></td></tr> <tr><td>3</td><td>DDV2/8</td><td></td></tr> <tr><td>4</td><td>LC.D_TE</td><td></td></tr> <tr><td>5</td><td>RESET</td><td></td></tr> <tr><td>6</td><td>GND</td><td></td></tr> <tr><td>7</td><td>GND</td><td></td></tr> <tr><td>8</td><td>DN1</td><td></td></tr> <tr><td>9</td><td>DDP1</td><td></td></tr> <tr><td>10</td><td>GND</td><td></td></tr> <tr><td>11</td><td>TCP</td><td></td></tr> <tr><td>12</td><td>TCX</td><td></td></tr> <tr><td>13</td><td>GND</td><td></td></tr> <tr><td>14</td><td>DDP2</td><td></td></tr> <tr><td>15</td><td>DN2</td><td></td></tr> <tr><td>16</td><td>GND</td><td></td></tr> <tr><td>17</td><td>DDP3</td><td></td></tr> <tr><td>18</td><td>DN3</td><td></td></tr> <tr><td>19</td><td>GND</td><td></td></tr> <tr><td>20</td><td>DDP0</td><td></td></tr> <tr><td>21</td><td>DDP0</td><td></td></tr> <tr><td>22</td><td>GND</td><td></td></tr> <tr><td>23</td><td>NC</td><td></td></tr> <tr><td>24</td><td>LED_A</td><td></td></tr> <tr><td>25</td><td>LED_K</td><td></td></tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Pin No.</td><td>Pin Name</td><td>Pin Function</td></tr> <tr><td>1</td><td>NC</td><td></td></tr> <tr><td>2</td><td>NC</td><td></td></tr> <tr><td>3</td><td>SDA</td><td></td></tr> <tr><td>4</td><td>SCL</td><td></td></tr> <tr><td>5</td><td>RES1</td><td></td></tr> <tr><td>6</td><td>RES2</td><td></td></tr> <tr><td>7</td><td>GND</td><td></td></tr> <tr><td>8</td><td>VBDD08</td><td></td></tr> <tr><td></td><td></td><td>VBDD08</td></tr> </table> <p>IC: GT5688 sensor ID接法: 0P11=GND 0P12=GND</p> | MPPI接口 | Pin No. | Pin Name | 1 | VDD1/8 | | 2 | LC.D_ID | | 3 | DDV2/8 | | 4 | LC.D_TE | | 5 | RESET | | 6 | GND | | 7 | GND | | 8 | DN1 | | 9 | DDP1 | | 10 | GND | | 11 | TCP | | 12 | TCX | | 13 | GND | | 14 | DDP2 | | 15 | DN2 | | 16 | GND | | 17 | DDP3 | | 18 | DN3 | | 19 | GND | | 20 | DDP0 | | 21 | DDP0 | | 22 | GND | | 23 | NC | | 24 | LED_A | | 25 | LED_K | | Pin No. | Pin Name | Pin Function | 1 | NC | | 2 | NC | | 3 | SDA | | 4 | SCL | | 5 | RES1 | | 6 | RES2 | | 7 | GND | | 8 | VBDD08 | | | | VBDD08 |
| 显示类型 (Display mode): | TFT/Normal, BLACK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 驱动芯片 (Driver IC): | H83894D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 人眼观察视场 (Viewing Direction): | ALL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 接口类型 (Interface Types): | MPI VIDEO MODE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 背光类型 (Backlight Types): | 12pcs, 6#2#4mm(A20mm)/(LED), 电 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 背光亮度 (Backlight Brightness): | 320 cd/m2 Min, 350 cd/m2 TYP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 颜色坐标 (Color Coordinate): | (X=0.29±0.03, Y=0.30±0.03) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 模组均匀度 (LCD Uniformity): | 80% MIN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 操作温度 (Operating Temperature): | -20° C ~ 70° C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 储存温度 (Storage Temperature): | -30° C ~ 80° C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 平面弯曲度 (Plane Warping Degree): | <= 0.3MM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 连接器 EPC CONTROL: | PH26-25S-03SHW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MPPI接口 | Pin No. | Pin Name | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | VDD1/8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | LC.D_ID | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | DDV2/8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | LC.D_TE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | RESET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | DN1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | DDP1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | TCP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | TCX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | DDP2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | DN2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | DDP3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | DN3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | DDP0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | DDP0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | LED_A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | LED_K | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin No. | Pin Name | Pin Function | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | SDA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | SCL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | RES1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | RES2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | VBDD08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | VBDD08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <p>背光电路图</p> | <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>Pin No.</td><td>Pin Name</td><td>Pin Function</td></tr> <tr><td>1</td><td>NC</td><td></td></tr> <tr><td>2</td><td>NC</td><td></td></tr> <tr><td>3</td><td>SDA</td><td></td></tr> <tr><td>4</td><td>SCL</td><td></td></tr> <tr><td>5</td><td>RES1</td><td></td></tr> <tr><td>6</td><td>RES2</td><td></td></tr> <tr><td>7</td><td>GND</td><td></td></tr> <tr><td>8</td><td>VBDD08</td><td></td></tr> <tr><td></td><td></td><td>VBDD08</td></tr> </table> | Pin No. | Pin Name | Pin Function | 1 | NC | | 2 | NC | | 3 | SDA | | 4 | SCL | | 5 | RES1 | | 6 | RES2 | | 7 | GND | | 8 | VBDD08 | | | | VBDD08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pin No. | Pin Name | Pin Function | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | SDA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | SCL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | RES1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | RES2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | VBDD08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | VBDD08 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Kingtech Group Co., Ltd</p> <p>贴合总成</p> <p>图角 (View) 比例 (Proportional) 1:1:1 设计 (DESIGN) 审核 (AUDITING) 批准 (APPROVE)</p> <p>日期 (Date) 2017.12.18</p> <p>物料代码 (Material Code) PV0503TD25D-C</p> <p>版本号 (Version) 符号 (Symbol)</p> | | <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>V4</td><td></td></tr> <tr><td>V3</td><td>更改正面保护膜厚度, 后壳保护膜要求向SF155EC-4</td></tr> <tr><td>V2</td><td>加长CTP的FFC长度</td></tr> <tr><td>V1</td><td>增加壳体30CDM2 MIN</td></tr> <tr><td>V0</td><td>初版 (The first edition)</td></tr> <tr><td colspan="2">版本 (Version) 符号 (Symbol) 变更记录 (Change History)</td></tr> </table> | V4 | | V3 | 更改正面保护膜厚度, 后壳保护膜要求向SF155EC-4 | V2 | 加长CTP的FFC长度 | V1 | 增加壳体30CDM2 MIN | V0 | 初版 (The first edition) | 版本 (Version) 符号 (Symbol) 变更记录 (Change History) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| V4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| V3 | 更改正面保护膜厚度, 后壳保护膜要求向SF155EC-4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| V2 | 加长CTP的FFC长度 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| V1 | 增加壳体30CDM2 MIN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| V0 | 初版 (The first edition) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 版本 (Version) 符号 (Symbol) 变更记录 (Change History) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| <p>一、产品特征 (Features):</p> <p>1. 产品规格: (Product specifications):</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>显示类型 (Display mode):</td><td>TFT/Normal BLACK</td></tr> <tr><td>驱动芯片 (Driver IC):</td><td>HX8394D</td></tr> <tr><td>人眼观察角 (Viewing Direction):</td><td>ALL</td></tr> <tr><td>接口类型 (Interface Types):</td><td>MIPI VIDEO MODE</td></tr> <tr><td>背光类型 (Backlight Types):</td><td>12res, 6串2并40mA(20mA/LED) 电压为17.4~20.4</td></tr> <tr><td>模组亮度 (LCM Brightness):</td><td>≥ 380 cd/m²MIN 40(CD/M2) TYP</td></tr> <tr><td>颜色坐标 (Color Coordinate):</td><td>(X=0.28±0.03, Y=0.30±0.03)</td></tr> <tr><td>模组均匀度 (LCM Uniformity):</td><td>80% MIN</td></tr> <tr><td>操作温度 (Operating Temperature):</td><td>-20° C ~ 70° C</td></tr> <tr><td>储存温度 (Storage Temperature):</td><td>-30° C ~ 80° C</td></tr> <tr><td>平面翘曲度 (Plane Warping Degree):</td><td><= 0.3MM</td></tr> <tr><td>连接器 (PCB CONN):</td><td>PH26-26S-03SHW</td></tr> <tr><td>LCD:</td><td>F050A13-601(CMI)</td></tr> </table> | 显示类型 (Display mode): | TFT/Normal BLACK | 驱动芯片 (Driver IC): | HX8394D | 人眼观察角 (Viewing Direction): | ALL | 接口类型 (Interface Types): | MIPI VIDEO MODE | 背光类型 (Backlight Types): | 12res, 6串2并40mA(20mA/LED) 电压为17.4~20.4 | 模组亮度 (LCM Brightness): | ≥ 380 cd/m ² MIN 40(CD/M2) TYP | 颜色坐标 (Color Coordinate): | (X=0.28±0.03, Y=0.30±0.03) | 模组均匀度 (LCM Uniformity): | 80% MIN | 操作温度 (Operating Temperature): | -20° C ~ 70° C | 储存温度 (Storage Temperature): | -30° C ~ 80° C | 平面翘曲度 (Plane Warping Degree): | <= 0.3MM | 连接器 (PCB CONN): | PH26-26S-03SHW | LCD: | F050A13-601(CMI) | <p>2. 一般公差: ±0.2mm. (GENERAL TOLERANCE: ±0.2)</p> <p>3. 尺寸中带有"*"为重点管控尺寸. (*Dimensions of the key control and Control Dimensions.)</p> <p>4. 图纸中带有"☞"特别说明及重点确认位置. (Special Note And Key Confirmation Position)</p> <p>5. 产品所有物料符合 ROHS 规定要求. (All The Products Comply With The ROHS Requirements).</p> <p>6. 可视区开窗设计要求: 建议外壳可视区域比模块VA单边小0.3mm以上. (Visual Area Windows Design Requirements: The Proposed Shell Visual Area Than The Module VA Unilateral Small 0.3mm Above.).</p> | <p>二、防静电PCB A设计建议及要求: (The Antistatic PCB A Design Suggestions And Requests)</p> <p>1. 在RESET信号脚上接TVS管, 连接TVS管GND要铺完整. (TVS Tube Feet, Then The RESET Signal, Connect The TVS Tube GND To Shop Complete).</p> <p>2. 信号走线, 同时两侧包GND线. (Signal Go Line, While Both Sides Of The Package GND Line).</p> | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 显示类型 (Display mode): | TFT/Normal BLACK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 驱动芯片 (Driver IC): | HX8394D | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 人眼观察角 (Viewing Direction): | ALL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 接口类型 (Interface Types): | MIPI VIDEO MODE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 背光类型 (Backlight Types): | 12res, 6串2并40mA(20mA/LED) 电压为17.4~20.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 模组亮度 (LCM Brightness): | ≥ 380 cd/m ² MIN 40(CD/M2) TYP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 颜色坐标 (Color Coordinate): | (X=0.28±0.03, Y=0.30±0.03) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 模组均匀度 (LCM Uniformity): | 80% MIN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 操作温度 (Operating Temperature): | -20° C ~ 70° C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 储存温度 (Storage Temperature): | -30° C ~ 80° C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 平面翘曲度 (Plane Warping Degree): | <= 0.3MM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 连接器 (PCB CONN): | PH26-26S-03SHW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LCD: | F050A13-601(CMI) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>MIPI 接口</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><th>Pad No.</th><th>Pad Name</th></tr> <tr><td>1</td><td>VDD1V8</td></tr> <tr><td>2</td><td>LCD_ID</td></tr> <tr><td>3</td><td>VDD_2V8</td></tr> <tr><td>4</td><td>LCD_TE</td></tr> <tr><td>5</td><td>RESET</td></tr> <tr><td>6</td><td>GND</td></tr> <tr><td>7</td><td>GND</td></tr> <tr><td>8</td><td>TDN1</td></tr> <tr><td>9</td><td>TDPI</td></tr> <tr><td>10</td><td>GND</td></tr> <tr><td>11</td><td>TCP</td></tr> <tr><td>12</td><td>TCN</td></tr> <tr><td>13</td><td>GND</td></tr> <tr><td>14</td><td>TDN2</td></tr> <tr><td>15</td><td>TDN2</td></tr> <tr><td>16</td><td>GND</td></tr> <tr><td>17</td><td>TDN3</td></tr> <tr><td>18</td><td>TDN3</td></tr> <tr><td>19</td><td>GND</td></tr> <tr><td>20</td><td>TDN0</td></tr> <tr><td>21</td><td>TDN0</td></tr> <tr><td>22</td><td>GND</td></tr> <tr><td>23</td><td>NC</td></tr> <tr><td>24</td><td>LED_A</td></tr> <tr><td>25</td><td>LED_K</td></tr> </table> | Pad No. | Pad Name | 1 | VDD1V8 | 2 | LCD_ID | 3 | VDD_2V8 | 4 | LCD_TE | 5 | RESET | 6 | GND | 7 | GND | 8 | TDN1 | 9 | TDPI | 10 | GND | 11 | TCP | 12 | TCN | 13 | GND | 14 | TDN2 | 15 | TDN2 | 16 | GND | 17 | TDN3 | 18 | TDN3 | 19 | GND | 20 | TDN0 | 21 | TDN0 | 22 | GND | 23 | NC | 24 | LED_A | 25 | LED_K | | <p>背光电路</p> <p>LED A LED K R1-10K R2-NC ID CIRCUIT DIAGRAM</p> |
| Pad No. | Pad Name | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | VDD1V8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | LCD_ID | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | VDD_2V8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | LCD_TE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | RESET | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | TDN1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | TDPI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | TCP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | TCN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | TDN2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | TDN2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | TDN3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | TDN3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | TDN0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | TDN0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | GND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | NC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | LED_A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | LED_K | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Kingtech Group Co., Ltd</p> <p>LCM</p> | | | <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>规格 (View)</td><td>1:1</td></tr> <tr><td>单页 (Unit)</td><td>1/1</td></tr> <tr><td>产品型号 (Product Type)</td><td>PV0503TD25D-C</td></tr> <tr><td>日期 (Date)</td><td></td></tr> </table> | 规格 (View) | 1:1 | 单页 (Unit) | 1/1 | 产品型号 (Product Type) | PV0503TD25D-C | 日期 (Date) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 规格 (View) | 1:1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 单页 (Unit) | 1/1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 产品型号 (Product Type) | PV0503TD25D-C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 日期 (Date) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



3. PIN DESCRIPTION

| Pin NO. | Symbol | Level | Remark |
|---------|--------|-------|---|
| 1 | VDD1V8 | H | A supply voltage to the digital circuit. (1.8-3.3V) |
| 2 | LCD_ID | H/L | LCD identification |
| 3 | VDD2V8 | H | A supply voltage to the digital circuit. (2.8-3.3V) |
| 4 | LCD_TE | H/L | Output pin for scan line signal |
| 5 | RESET | H/L | Reset signal. |
| 6 | GND | L | Power Ground |
| 7 | GND | L | Power Ground |
| 8 | TDN1 | H/L | MIPI_D1- are differential data signal line |
| 9 | TDP1 | H/L | MIPI_D1+ are differential data signal line |
| 10 | GND | L | Power Ground |
| 11 | TCP | H/L | CLOCK Lane positive-end input pin |
| 12 | TCN | H/L | CLOCK Lane negative-end input pin |
| 13 | GND | L | Power Ground |
| 14 | TDP2 | H/L | MIPI_D2+ are differential data signal line |
| 15 | TDN2 | H/L | MIPI_D2- are differential data signal line |
| 16 | GND | L | Power Ground |
| 17 | TDP3 | H/L | MIPI_D3+ are differential data signal line |
| 18 | TDN3 | H/L | MIPI_D3- are differential data signal line |
| 19 | GND | L | Power Ground |
| 20 | TDN0 | H/L | MIPI_D0- are differential data signal line |
| 21 | TDP0 | H/L | MIPI_D0+ are differential data signal line |
| 22 | GND | L | Power Ground |
| 23 | NC | | Not connect |
| 24 | LED-A | H | LED backlight+ |
| 25 | LED-K | L | LED backlight- |



4. ELECTRICAL CHARACTERISTICS

4.1 ABSOLUTE MAXIMUM RATINGS

| Item | Symbol | Values | | Unit | Remark |
|-----------------------------------|--------|--------|------|------|--------|
| | | Min | Max. | | |
| Supply Voltage for Logic circuit | VDDIO | -0.3 | 3.6 | V | |
| Supply Voltage for analog circuit | Vcc | -0.3 | 3.6 | V | |

4.2 DC ELECTRICAL CHARACTERISTICS

4.2.1 OPERATING CONDITIONS

Typical Operating Conditions (Ta=25°C)

| Item | Symbol | Values | | | Unit | Remark |
|---------------------------------|-----------------|--------|-----|------|------|----------|
| | | Min | Typ | Max. | | |
| Power Supply | Vcc | 2.5 | 2.8 | 3.3 | V | |
| Power Supply | VDDIO | 1.65 | 1.8 | 3.3 | V | |
| Normal mode Current consumption | Icc | - | 48 | - | mA | VCC=2.8V |
| TFT Gate ON Voltage | V _{GH} | 10 | 15 | - | V | |
| TFT Gate OFF Voltage | V _{GL} | | -9 | -13 | V | |

4.2.2 BACKLIGHT UNIT (GND=0V)

| Item | Symbol | Values | | | Unit | Remark |
|------------------------|----------------|--------|------|------|-------------------|----------------------|
| | | Min | Typ | Max. | | |
| Forward supply Voltage | V _f | 17.4 | 19.2 | 20.4 | V | |
| Forward supply Current | I _f | - | 40 | - | mA | |
| LCM Luminance | L _V | 320 | 350 | - | cd/m ² | I _B =40mA |
| Uniformity | / | 80 | | | % | - |



4.3 MIPI Interface Characteristics

43.1

High Speed Mode

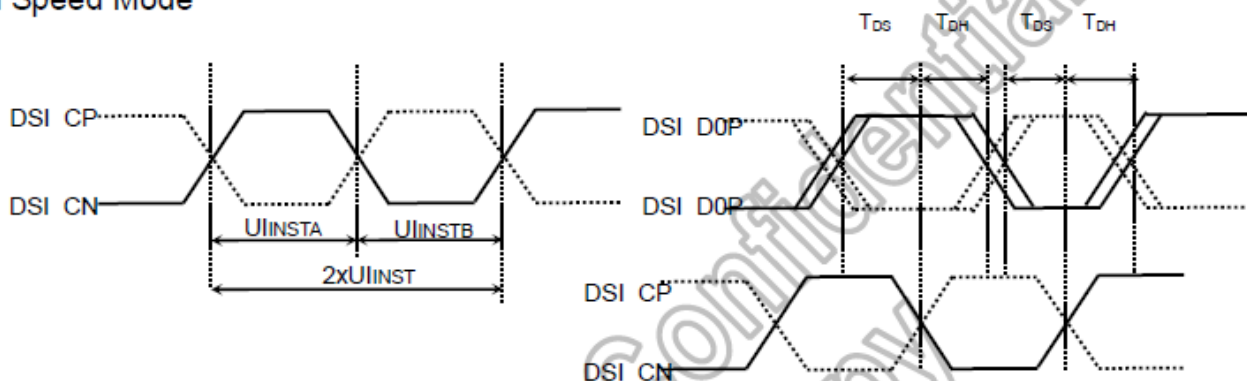


Figure 7.4: DSI clock timing Characteristics

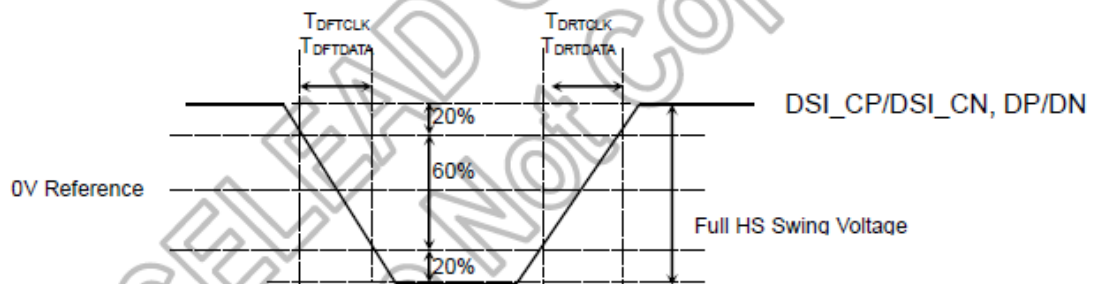


Figure 7.5: Rising and falling time on clock and data channel

(VSSA=0V, IOVCC=1.65V to 3.3V, VCI=2.5V to 3.3V, TA = -30 to 70°C)

| Signal | Item | Symbol | Spec. | | | Unit |
|-------------------|----------------------------------|----------------------|---------|------|-------|------|
| | | | Min. | Typ. | Max. | |
| DSI_CP/ DSI_CN | Double UI instantaneous | 2xUIINST | TBD | - | 25 | ns |
| | UI instantaneous | UIINSTA UIINSTB | TBD | - | 12.5 | ns |
| DP/DN | Data to clock setup time | T _{DS} | 0.15xUI | - | - | ps |
| | Data to clock hold time | T _{DH} | 0.15xUI | - | - | ps |
| DSI_CP/ DSI_CN | Differential rise time for clock | T _{DRTCLK} | 150 | - | 0.3UI | ps |
| | Differential fall time for clock | T _{DFTCLK} | 150 | - | 0.3UI | ps |
| DP/DN | Differential rise time for data | T _{DRTDATA} | 150 | - | 0.3UI | ps |
| | Differential fall time for data | T _{DFTDATA} | 150 | - | 0.3UI | ps |

DSI High SpeedMode Characteristics



4.32

Low Power Mode

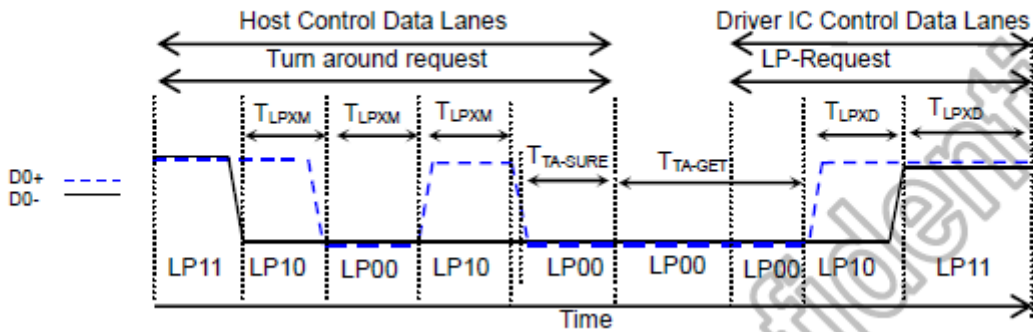
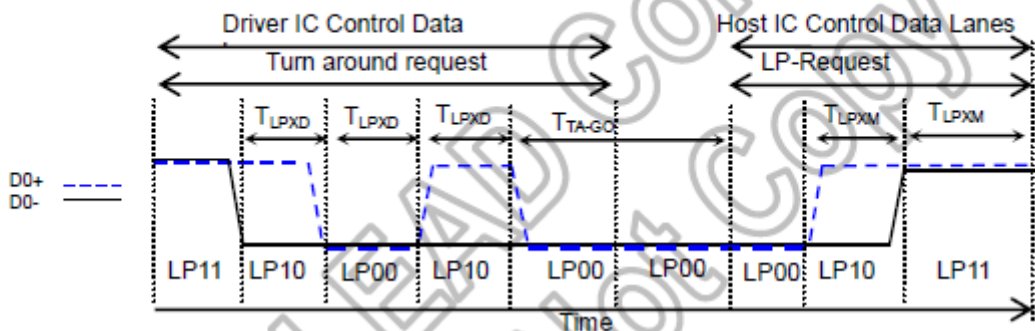


Figure 7.6: BTA from HOST to Display Module Timing



(VSSA=0V, IOVCC=1.65V to 3.3V, VCI=2.3V to 3.3V, TA = -30 to 70°C)

| Signal | Item | Symbol | Spec. | | | Unit |
|---------------------|--|----------------------|---------------------|------|---------------------|------|
| | | | Min. | Typ. | Max. | |
| DSI_D0P/ DSI_D0P | Length of LP-00/LP01/LP10/LP11 Host → Display module | T _{LPXM} | 50 | - | - | ns |
| | Length of LP-00/LP01/LP10/LP11 Display module → Host | T _{LPXD} | 50 | - | - | ns |
| | Time-out before the MPU start driver | T _{TA-SURE} | T _{LPXD} | - | 2xT _{LPXD} | ns |
| | Time to drive LP-00 by display module | T _{TA-GET} | 5xT _{LPXD} | - | - | ns |
| | Time to drive LP-00 after turnaround request Host | T _{TA-GO} | 4xT _{LPXD} | - | - | ns |

DSI Low Power Mode Characteristics



5. OPTICAL CHARACTERISTICS

| Item | Symbol | Conditions | Specifications | | | Unit | Note | |
|---------------------------------------|--------------------|---|----------------|-------|-------|------|---|--------------------------|
| | | | Min. | Typ. | Max. | | | |
| Transmittance (w/o DBEF) | T% | Viewing normal angle $\theta_x = \theta_y = 0^\circ$ | | 3.3 | -- | % | All left side data are based on INX's following condition – 1.LC : AAS . 2.CF : CG 70% CF. 3.Light Source : INX LED BLU. 4.Polarizer : CF SRW062APN1-HC5 / TFT SRW062APN1. 5.Machine : DMS 803, (ConoScope for View Angle). 6. VLC dark ≤ 0.2 V, VLC white ≥ 5 V | |
| Contrast Ratio | CR | | 600 | 1000 | -- | -- | | |
| Response Time | $T_{on} + T_{off}$ | | - | 25 | 35 | ms | | |
| Viewing Angle | Hor. | θ_{x+} | -- | 80 | -- | deg. | | |
| | | θ_{x-} | -- | 80 | -- | | | |
| | Ver. | θ_{y+} | -- | 80 | -- | | | |
| | | θ_{y-} | -- | 80 | -- | | | |
| CF only Color Chromaticity (CIE 1931) | Red | Rx | 0.641 | 0.661 | 0.681 | - | | Under C light (CIE 1931) |
| | | Ry | 0.306 | 0.326 | 0.346 | - | | |
| | Green | Gx | 0.257 | 0.277 | 0.297 | - | | |
| | | Gy | 0.550 | 0.570 | 0.590 | - | | |
| | Blue | Bx | 0.125 | 0.145 | 0.165 | - | | |
| | | By | 0.057 | 0.077 | 0.097 | - | | |
| | White | Wx | 0.290 | 0.310 | 0.330 | - | | |
| | | Wy | 0.314 | 0.334 | 0.354 | - | | |
| Color Gamut | CG | | -- | 70% | -- | % | | |

*Note(1) Definition of Contrast Ratio (CR):

The contrast ratio can be calculated by the following expression.

$$\text{Contrast Ratio (CR)} = L63 / L0$$

L63: Luminance of gray level 63

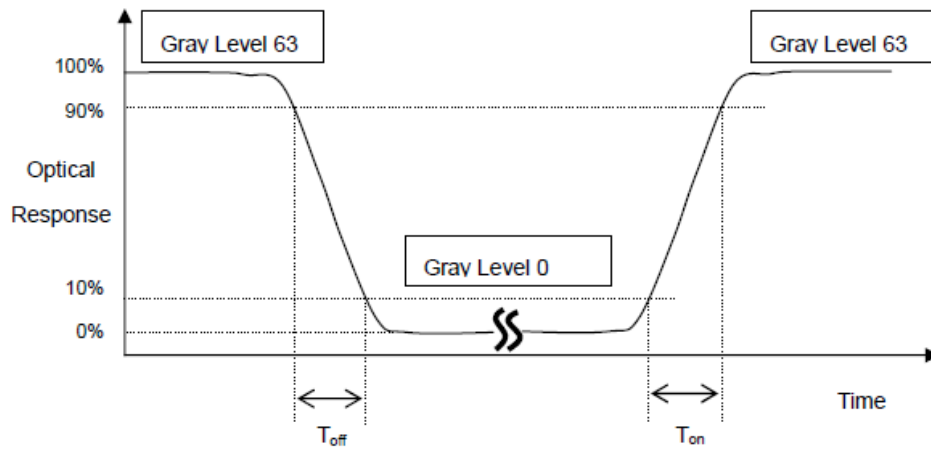
L 0: Luminance of gray level 0

$$CR = CR (5)$$

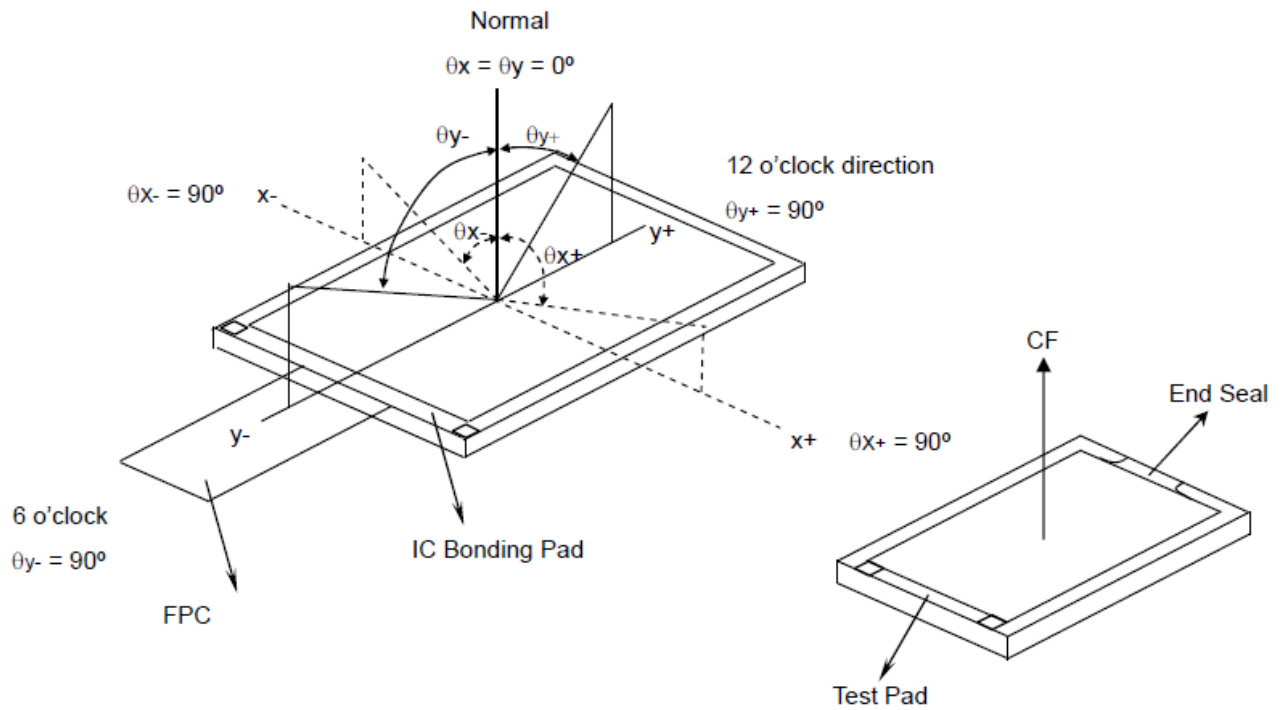
CR (X) is corresponding to the Contrast Ratio of the point X at Figure in Note (5).



*Note (2) Definition of Response Time (T_{on} , T_{off}):



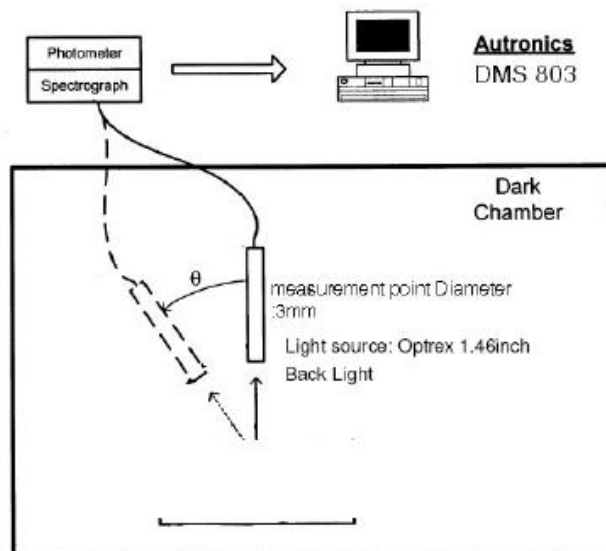
*Note(3) Definition of Viewing Angle



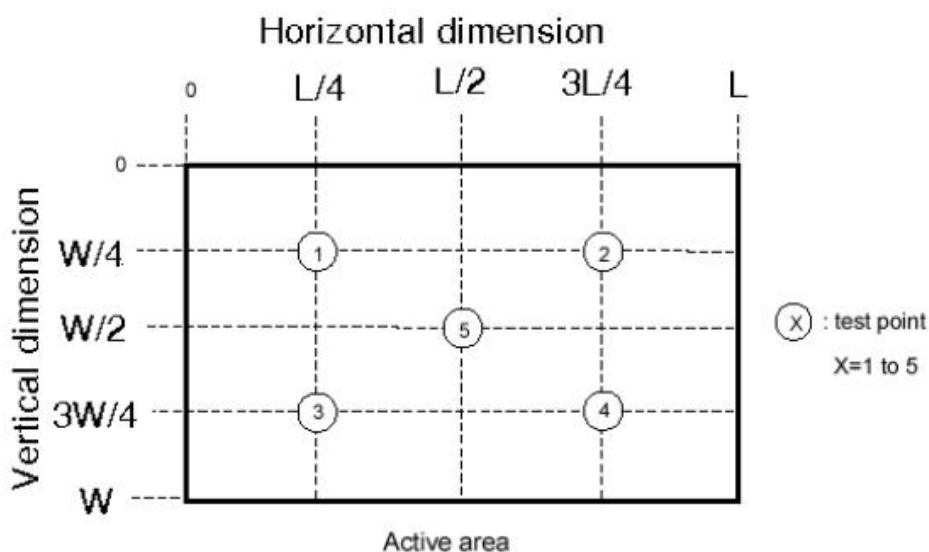


***Note (4) Measurement Set-Up:**

The LCD module should be stabilized at a given temperature for 20 minutes to avoid abrupt temperature change during measuring. In order to stabilize the luminance, the measurement should be executed after lighting Backlight for 20 minutes in a windless room.



***Note (5)**

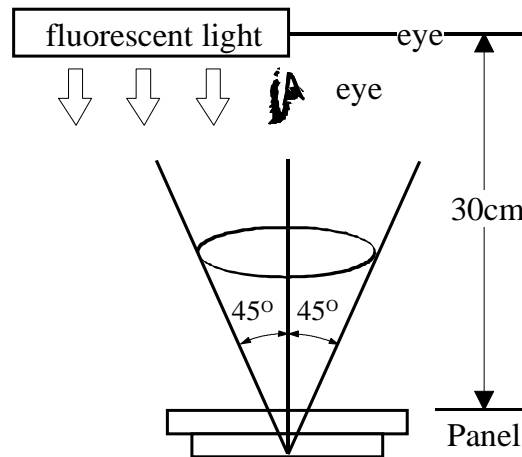




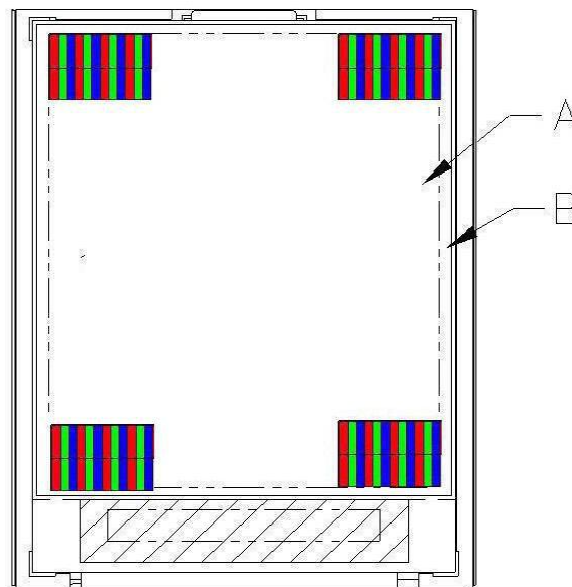
6. QUALITY SPECIFICATIONS

6.1 INSPECTION CONDITION

- (1) Inspect under 300-500Lux fluorescent light, leaving 30-35cm between panels and eyes, and between panels and lights.
- (2) Inspection condition is $23\pm 5^{\circ}\text{C}$, $50\pm 20\%RH$ maximum.



6.2 DEFINITION OF AREA

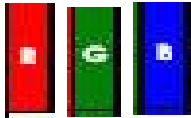
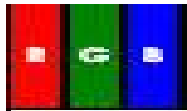


A Area : Viewing area.

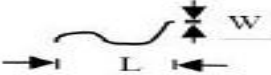
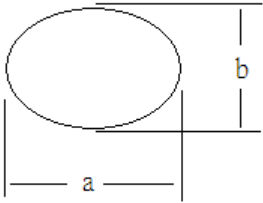
B Area : Out of viewing area.(outside viewing area)



6.3 INSPECTION SPECIFICATION

| NO | Item | Acceptable specification | Judgment Criterion |
|----|----------------------|---|---|
| 1 | Electrical Testing | <p>1-1 sub pixel classification</p> <ul style="list-style-type: none"> ● Sub Pixel: Number of sub pixel doesn't exceed one dot. <div style="text-align: center;">  <p>Sub Pixel (Dot)</p> </div> <p>a> Dark dot ----one Allowed b> Bright dot ---- one Allowed</p> <ul style="list-style-type: none"> ● Pixel : Three dots link together doesn't exceed ones <div style="text-align: center;">  <p>Pixel</p> </div> <p>1-2 Leakage to light</p> <ul style="list-style-type: none"> ● Leakage to light be not allowed. <p>1-3 Picture to shake</p> <ul style="list-style-type: none"> ● Picture had shake, twinkle and noise etc. instable of defect that be not allowed. <p>1-4 Function</p> <ul style="list-style-type: none"> ● No display or No function. ● Source Line, Gate Line. ● Contrast Ratio ● Current consumption exceeds product specifications. ● Display malfunction. | <p>$N \leq 1$</p> <p>$N \leq 0$</p> <p>$N=0$</p> <p>$N=0$</p> <p>$N=0$</p> |
| 2 | Mechanical Dimension | <p>2-1 Mechanical Dimension exceeds product specifications.</p> <p>2-2 Out of frame and boss of plastic changed shape that be not allowed.</p> | <p>$N=0$</p> |



| NO | Item | Acceptable specification | Judgment Criterion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|---------------------|--|----------------------|-------------------|-------------------|-------------|-----|---------------|--------|-------|--------------|----------------------|---|--------------|---------------------|---|----|-----------|-------------|-----|-----------|-------------------|-------------|------------------|--------|-----|-------------------------|---|-------|-------------------------|---|---------------|---|-----|-----------|-------------------|-------------|------------------|--------|-----|-------------------------|---|--------|---------------|---|-----|--|
| 3 | Cosmetic Inspection | <p>3-1 Blemish: Line shapes of defect</p> <table border="1" data-bbox="357 416 1311 775"> <thead> <tr> <th>Length</th> <th>Width</th> <th>Acceptable number</th> <th>Mini. space</th> </tr> </thead> <tbody> <tr> <td>---</td> <td>$W \leq 0.03$</td> <td>Ignore</td> <td rowspan="3">5 m m</td> </tr> <tr> <td>$L \leq 2.5$</td> <td>$0.03 < W \leq 0.05$</td> <td>3</td> </tr> <tr> <td>$L \leq 2.5$</td> <td>$0.05 < W \leq 0.1$</td> <td>2</td> </tr> <tr> <td>--</td> <td>$W > 0.1$</td> <td>Not allowed</td> <td>---</td> </tr> </tbody> </table> <p>L: length(mm) W: width(mm)</p>  <p>3-2 Blemish: dot shapes of defect.</p> <table border="1" data-bbox="434 1048 1281 1285"> <thead> <tr> <th>Dimension</th> <th>Acceptable number</th> <th>Mini. Space</th> </tr> </thead> <tbody> <tr> <td>$\Phi \leq 0.10$</td> <td>Ignore</td> <td>---</td> </tr> <tr> <td>$0.10 < \Phi \leq 0.15$</td> <td>2</td> <td rowspan="2">5 m m</td> </tr> <tr> <td>$0.15 < \Phi \leq 0.25$</td> <td>1</td> </tr> <tr> <td>$\Phi > 0.25$</td> <td>0</td> <td>---</td> </tr> </tbody> </table> <p>3-3 Polarizer Bubble</p> <table border="1" data-bbox="434 1364 1281 1534"> <thead> <tr> <th>Dimension</th> <th>Acceptable number</th> <th>Mini. Space</th> </tr> </thead> <tbody> <tr> <td>$\Phi \leq 0.20$</td> <td>Ignore</td> <td>---</td> </tr> <tr> <td>$0.20 < \Phi \leq 0.30$</td> <td>2</td> <td>15 m m</td> </tr> <tr> <td>$\Phi > 0.30$</td> <td>0</td> <td>---</td> </tr> </tbody> </table> <p>Foreign Substances</p>  <p>$\Phi = (a+b)/2$</p> | Length | Width | Acceptable number | Mini. space | --- | $W \leq 0.03$ | Ignore | 5 m m | $L \leq 2.5$ | $0.03 < W \leq 0.05$ | 3 | $L \leq 2.5$ | $0.05 < W \leq 0.1$ | 2 | -- | $W > 0.1$ | Not allowed | --- | Dimension | Acceptable number | Mini. Space | $\Phi \leq 0.10$ | Ignore | --- | $0.10 < \Phi \leq 0.15$ | 2 | 5 m m | $0.15 < \Phi \leq 0.25$ | 1 | $\Phi > 0.25$ | 0 | --- | Dimension | Acceptable number | Mini. Space | $\Phi \leq 0.20$ | Ignore | --- | $0.20 < \Phi \leq 0.30$ | 2 | 15 m m | $\Phi > 0.30$ | 0 | --- | |
| | | Length | Width | Acceptable number | Mini. space | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | --- | $W \leq 0.03$ | Ignore | 5 m m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | $L \leq 2.5$ | $0.03 < W \leq 0.05$ | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | $L \leq 2.5$ | $0.05 < W \leq 0.1$ | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | -- | $W > 0.1$ | Not allowed | --- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Dimension | Acceptable number | Mini. Space | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | $\Phi \leq 0.10$ | Ignore | --- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | $0.10 < \Phi \leq 0.15$ | 2 | 5 m m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | $0.15 < \Phi \leq 0.25$ | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $\Phi > 0.25$ | 0 | --- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dimension | Acceptable number | Mini. Space | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $\Phi \leq 0.20$ | Ignore | --- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $0.20 < \Phi \leq 0.30$ | 2 | 15 m m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $\Phi > 0.30$ | 0 | --- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| NO | Item | Acceptable specification | Judgment Criterion | | | | | | | | | | | | | | | | | | | | | |
|----|---------------------|--|--------------------|----------------------|-------------------|-------------------|-------------|-------|---------------|--------|-------|--------------|----------------------|---|--------------|---------------------|---|------|-----------|-------------|-----|-----------|------|-------------|
| 3 | Cosmetic Inspection | 3-4 Scratch <ul style="list-style-type: none"> ● Sensate scratch not allowed. ● Impassive scratch as below. <p style="text-align: right; color: red;">Unit:mm</p> | | | | | | | | | | | | | | | | | | | | | | |
| | | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Length</th> <th style="width: 25%;">Width</th> <th style="width: 25%;">Acceptable number</th> <th style="width: 25%;">Mini. space</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">-----</td> <td style="text-align: center;">$W \leq 0.03$</td> <td style="text-align: center;">Ignore</td> <td rowspan="3" style="text-align: center; vertical-align: middle;">5 m m</td> </tr> <tr> <td style="text-align: center;">$L \leq 2.5$</td> <td style="text-align: center;">$0.03 < W \leq 0.05$</td> <td style="text-align: center;">3</td> </tr> <tr> <td style="text-align: center;">$L \leq 2.5$</td> <td style="text-align: center;">$0.05 < W \leq 0.1$</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">----</td> <td style="text-align: center;">$0.1 < W$</td> <td style="text-align: center;">Not allowed</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">---</td> </tr> <tr> <td style="text-align: center;">$L > 2.5$</td> <td style="text-align: center;">----</td> <td style="text-align: center;">Not allowed</td> </tr> </tbody> </table> | | Length | Width | Acceptable number | Mini. space | ----- | $W \leq 0.03$ | Ignore | 5 m m | $L \leq 2.5$ | $0.03 < W \leq 0.05$ | 3 | $L \leq 2.5$ | $0.05 < W \leq 0.1$ | 2 | ---- | $0.1 < W$ | Not allowed | --- | $L > 2.5$ | ---- | Not allowed |
| | | Length | | Width | Acceptable number | Mini. space | | | | | | | | | | | | | | | | | | |
| | | ----- | | $W \leq 0.03$ | Ignore | 5 m m | | | | | | | | | | | | | | | | | | |
| | | $L \leq 2.5$ | | $0.03 < W \leq 0.05$ | 3 | | | | | | | | | | | | | | | | | | | |
| | | $L \leq 2.5$ | | $0.05 < W \leq 0.1$ | 2 | | | | | | | | | | | | | | | | | | | |
| | | ---- | | $0.1 < W$ | Not allowed | --- | | | | | | | | | | | | | | | | | | |
| | | $L > 2.5$ | | ---- | Not allowed | | | | | | | | | | | | | | | | | | | |
| 4 | Package | 4-1 Mixed product types 4-2 Shipping q'ty should be the same as "shipping notice form" q'ty. 4-3 Outer box can't broken. | N=0 | | | | | | | | | | | | | | | | | | | | | |



7. RELIABILITY

| Test Item | Test Condition |
|--|--|
| High Temperature Operation | 70°C for 72 hours |
| Low Temperature Operation | -20°C for 72hours |
| High Temperature Storage | 80°C for 72 hours |
| Low Temperature Storage | -30°C for 72 hours |
| High Temperature Operation Humidity Operation | 80°C, 90%RH for 60 hours |
| Thermal Shock | -30 °storage one hour,rise to 70 °within 15s,high temperature one hour, drop to 30 °within 15s, circulate ten repeatedly |
| Vibration Test (No Operation) | Frequency: 10-55Hz Amplitude:1.0mm Sweep Time: 11min Test Period: 6 Cycles for each direction of X, Y, Z |
| Static electricity test | Touch 4KV,air touch 8KV |



8.1 SAFETY

- (1) Do not swallow any liquid crystal, even if there is no proof that liquid crystal is poisonous.
- (2) If the LCD panel breaks, be careful not to get liquid crystal to touch your skin.
- (3) If skin is exposed to liquid crystal, wash the area thoroughly with alcohol or soap.

8.2 STORAGE CONDITIONS

- (1) Store the panel or module in a dark place where the temperature is $23\pm 5^{\circ}\text{C}$ and the humidity is below $50\pm 20\% \text{RH}$.
- (2) Store in anti-static electricity container.
- (3) Store in clean environment, free from dust, active gas, and solvent.
- (4) Do not place the module near organics solvents or corrosive gases.
- (5) Do not crush, shake, or jolt the module.

8.3 HANDLING PRECAUTIONS

- (1) Avoid static electricity which can damage the CMOS LSI.
- (2) The polarizing plate of the display is very fragile. So, please handle it very carefully.
- (3) Do not give external shock.
- (4) Do not apply excessive force on the surface.
- (5) Do not wipe the polarizing plate with a dry cloth, as it may easily scratch the surface of plate.
- (6) Do not use ketonic solvent & Aromatic solvent, use with a soft cloth soaked with a cleaning naphtha solvent.
- (7) Do not operate it above the absolute maximum rating.
- (8) Do not remove the panel or frame from the module.

8.4 WARRANTY

The period is within twelve months since the date of shipping out under normal using and storage conditions.