



SPECIFICATION FOR TFT LCD MODULE

CUSTOMER : _____

CUSTOMER MODULE : _____

HL MODEL : HG050WV032T01

Preliminary Specification

Final Specification

Customer Confirmation column:

Approved by : _____ Dept. : _____ Data : _____

Please return one of the copies of the specification with your signature to us within two weeks after you receive this document. If it is not returned, we will assume that you agree to the entire contents of this specification document.

| Designed by | Checked by | Approved by |
|-------------|------------|-------------|
| | | |



1 Document revision history :

| DOCUMENT REVISION | DATE | DESCRIPTION | PREPARED BY | APPROVED BY |
|-------------------|------------|----------------|-------------|-------------|
| A | 2019.08.14 | First Release. | GARY | |



2. General Feature:

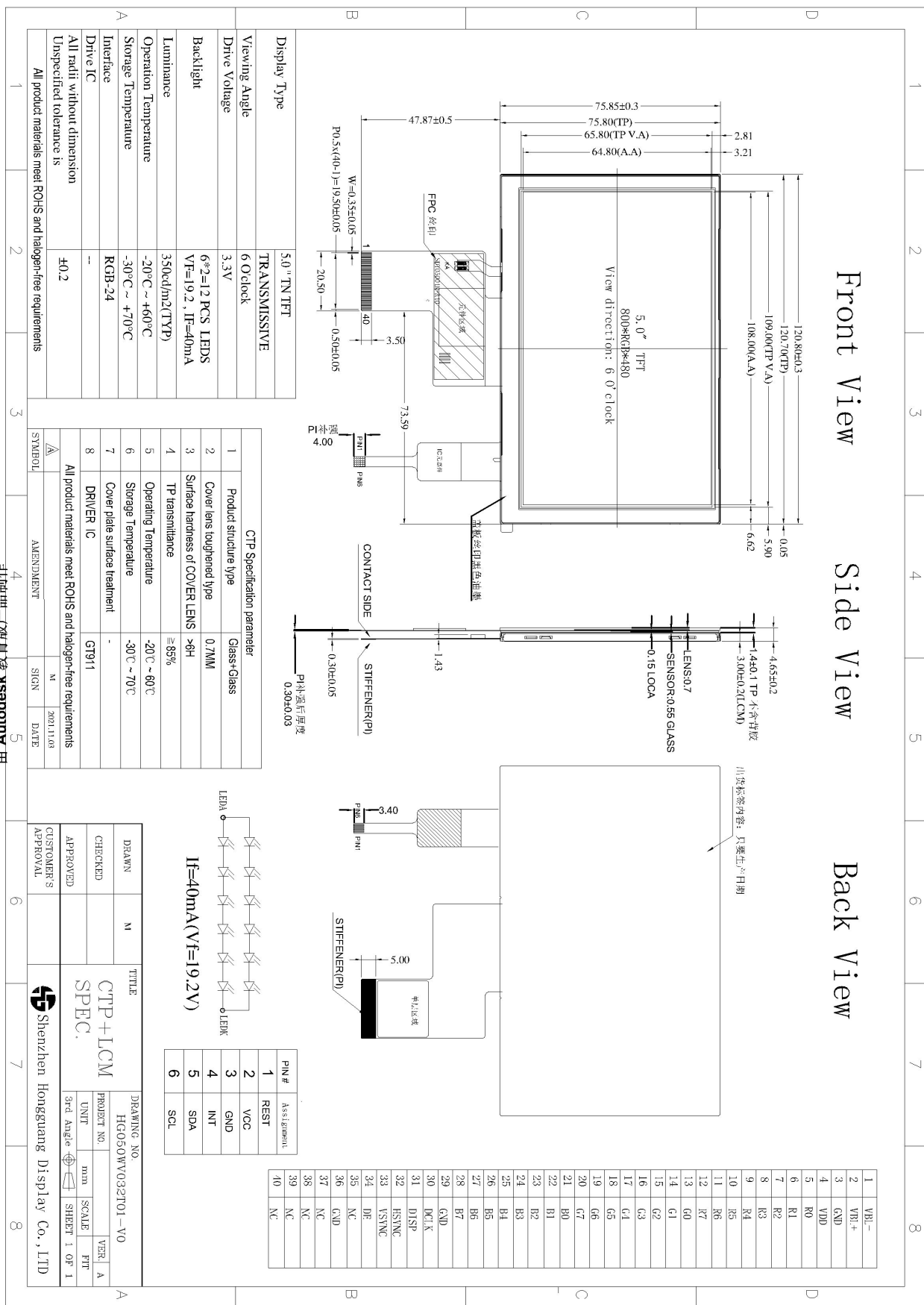
| Item | Standard Value | Unit |
|-----------------------|------------------------------|------|
| Display Size | 5.0" | -- |
| Number of Pixels | 800(V)x3(RGB)x480(H) | -- |
| Active Area | 108.00(L) *64.8(W) | mm |
| Pixel pitch | 0.135(L) × 0.135(W) | mm |
| Outline Dimension | 120.80(H) ×75.95(W) × 3.0(T) | mm |
| Pixel Arrangement | RGB vertical stripe | - |
| Display Mode | Normally white | - |
| Number of color | 16.7M | - |
| Viewing Direction | 6 O' CLOCK | - |
| Surface Treatment | Anti-Glare | - |
| Interface | TTL interface(24bit RGB) | - |
| Driver IC | HX8264/HX8664 | - |
| Driver Condition | 3.3 | V |
| Backlight | White LED | - |
| Touch Panel | No Touch Panel | - |
| Operation Temperature | -20~60 | °C |
| Storage Temperature | -30~70 | °C |



3. Mechanical Dimension

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4.Pin Description

| Pin NO. | Symbol | Description |
|---------|--------|----------------------------|
| 1 | LEDK | Back light cathode |
| 2 | LEDA | Back light anode |
| 3 | GND | Ground |
| 4 | VCC | Power supply |
| 5-12 | R0-R7 | Data bus |
| 13-20 | G0-G7 | Data bus(no connect) |
| 21-28 | B0-B7 | Data bus(no connect) |
| 29 | GND | Ground |
| 30 | CLK | Colock signal |
| 31 | NC | Not connect |
| 32 | HS | Line synchronizing signal |
| 33 | VSYNC | Frame synchronizing signal |
| 34 | DE | Data ENEABLE signal |
| 35 | NC | Not connect |
| 36 | GND | Ground |
| 37 | XR | touch panel X-right |
| 38 | YD | touch panel Y-bottom |
| 39 | XL | touch panel X-left |
| 40 | YU | touch panel Y-upl |



5. Electrical Characteristics

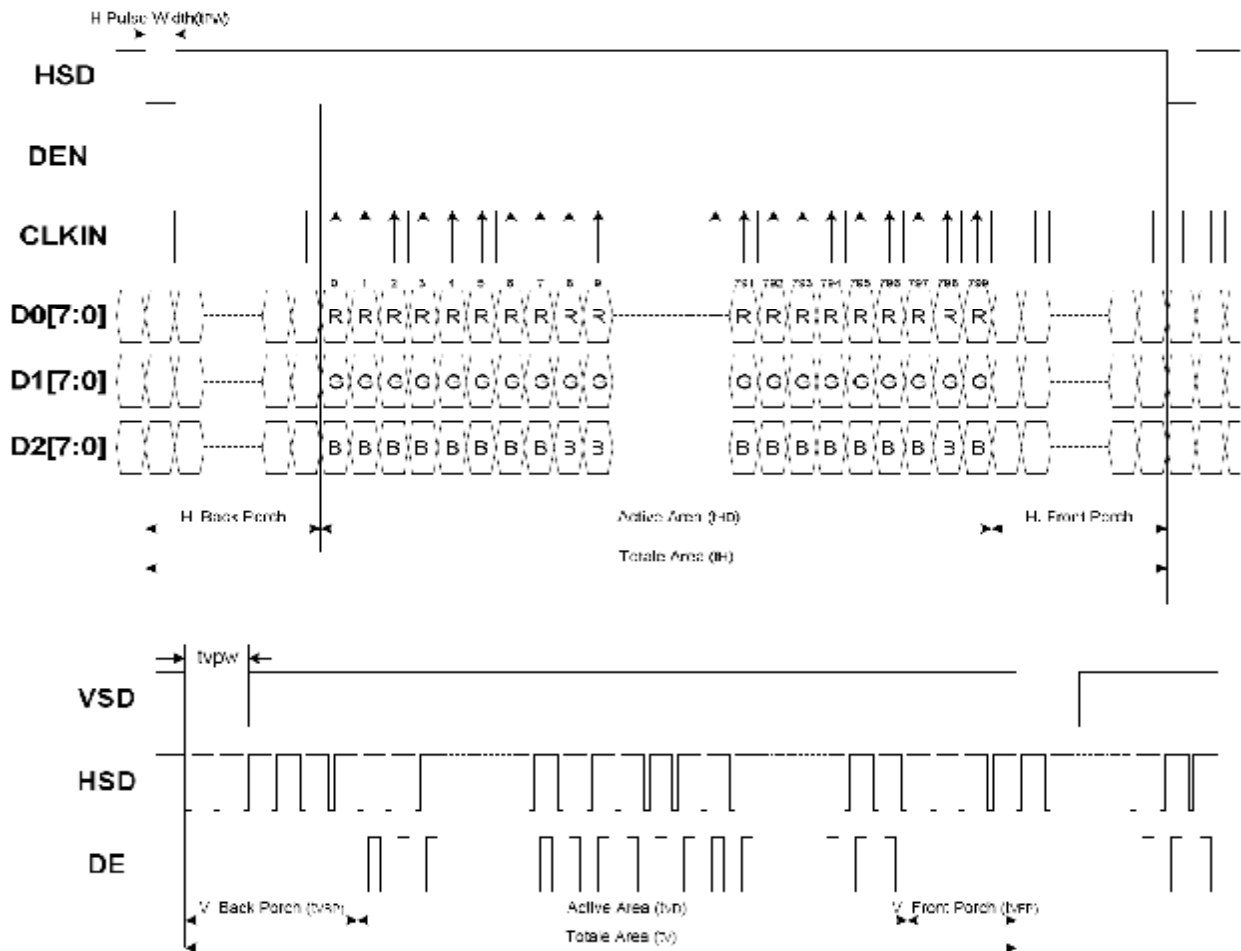
5-1 LED back light specification (per a chip)

| Item | Symbol | Condition | Min | Type | Max | Unit |
|----------------------|--------|-----------|-----|------|-----|-------|
| Forward voltage | Vt | If=20mA | 17 | 18 | 19 | V |
| Forward current | Ipn | /1-chip | - | 40 | - | mA |
| Reverse voltage | Vr | Per chip | - | - | 4.0 | V |
| Reverse Current | Ir | Vr=4V | - | - | 15 | uA |
| Uniformity(with L/G) | - | If=20mA | 80 | - | - | % |
| Luminance(With LCD) | Lv | If=20mA | - | 350 | - | cd/m2 |
| Luminous color | White | | | | | |



6. Timing Characteristics of Input Signals

6-1 Display timing characteristics

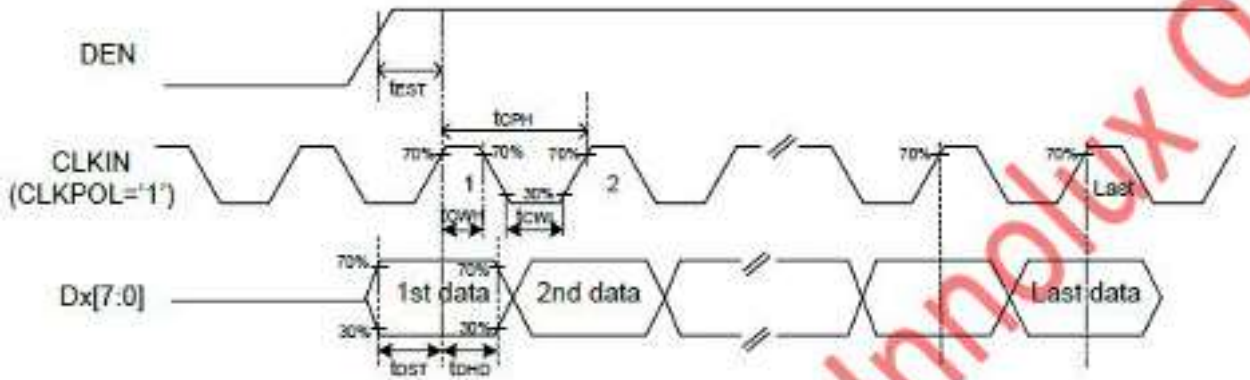


| Item | Symbol | Values | | | Unit | Remark |
|----------------|----------------|--------|------|------|------|--------|
| | | Min. | Typ. | Max. | | |
| DCLK Frequency | | Fclk | 26.4 | 33.3 | 46.8 | MHz |
| Hsync | Period time | Th | 862 | 1056 | 1200 | DCLK |
| | Display Period | Thdisp | - | 800 | - | DCLK |
| | Back Porch | Thbp | 1 | - | 40 | DCLK |
| | Front Porch | Thfp | 16 | 210 | 354 | DCLK |
| Vsync | Period time | Tv | 510 | 525 | 650 | H |
| | Display Period | Tvdisp | - | 480 | - | H |
| | Back Porch | Tvbp | 1 | - | 20 | H |
| | Front Porch | Tvfp | 7 | 22 | 147 | H |

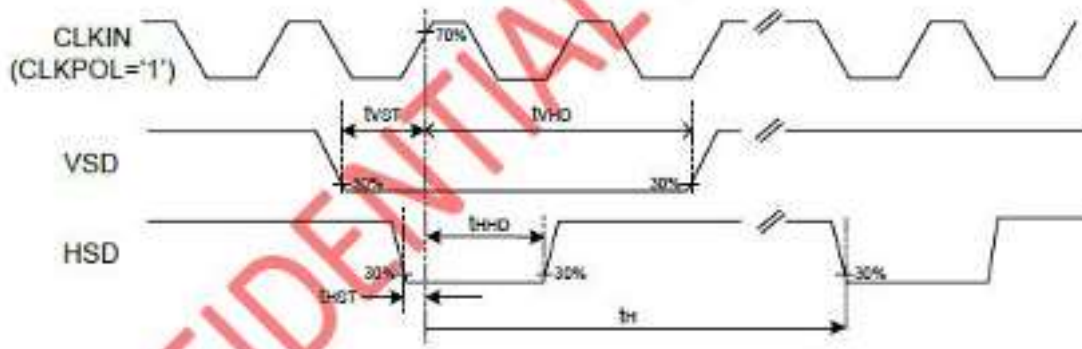


6-2 Parallel RGB Mode

DE Mode (MODE='1')



SYNC Mode (MODE='0')

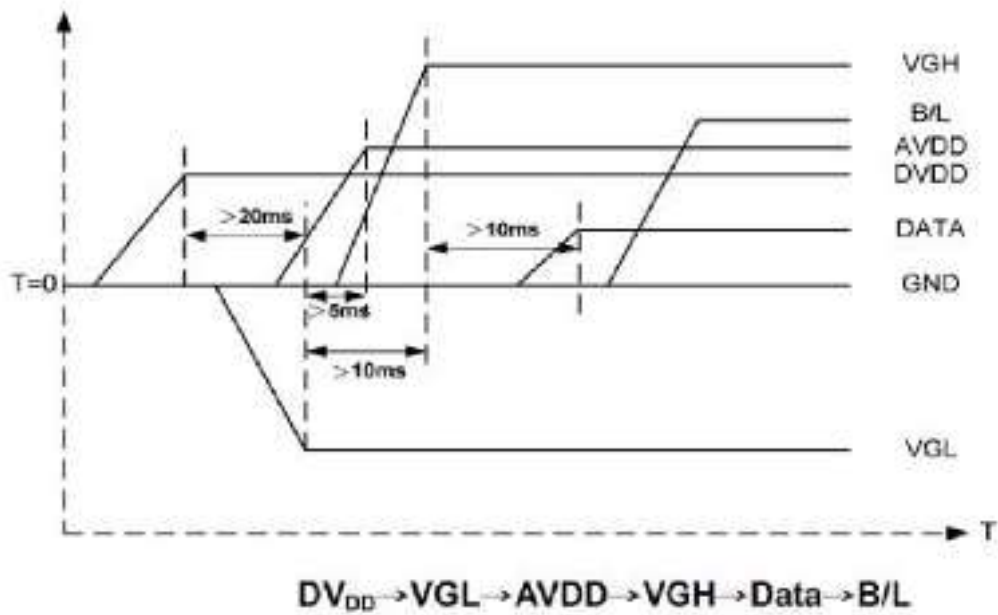


7. Power On/Off Sequence

7.1 Power On/Off sequence

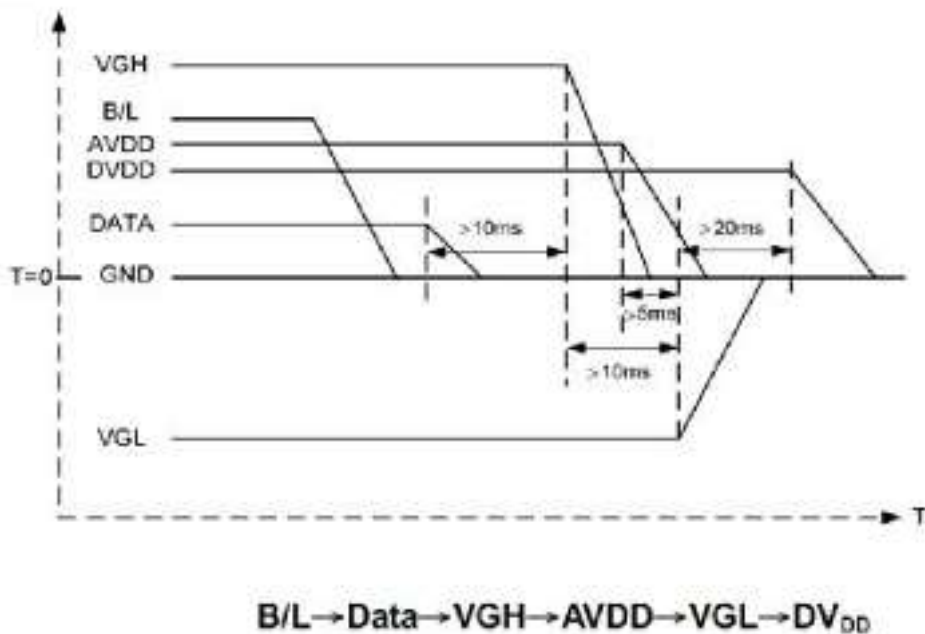


a. Power on:



7.2 Standby ON/OFF sequence

b. Power off:



Note: Data include R0-R7, B0-B7, GO-G7, U/D, L/R, DCLK, HS, VS, DE.



8. Optical Characteristics

| Item | Symbol | Condition | Min | Type | Max | Unit |
|-------------------------|--------|-----------|-------|-------|-------|------|
| Transmittance | Tr | - | 5.6 | 6.3 | - | % |
| Contrast Ratio | CR | | 350 | 500 | - | - |
| Response time | Tr+Tf | | - | 25 | - | ms |
| Viewing Angle | U | CR ≥ 10 | - | 55 | - | Deg. |
| | D | | - | 35 | - | |
| | L | | - | 65 | - | |
| | R | | - | 65 | - | |
| Color of CIE Coordinate | W | x | 0.285 | 0.305 | 0.325 | |
| | | y | 0.314 | 0.334 | 0.354 | |
| | R | x | 0.588 | 0.608 | 0.628 | |
| | | y | 0.296 | 0.316 | 0.336 | |
| | G | x | 0.285 | 0.305 | 0.325 | |
| | | y | 0.536 | 0.556 | 0.576 | |
| | B | x | 0.115 | 0.135 | 0.155 | |
| | | y | 0.117 | 0.137 | 0.157 | |

9. RELIABILITY TEST

9-1 Temperature and Humidity

| TEST ITEMS | CONDITIONS | NOTE |
|--|---|---------------|
| High Temperature Operation | 60°C ; 48hrs | |
| High Temperature Storage | 70°C ; 96hrs | |
| High Temperature High Humidity Operation | 40°C ; 90%RH ; 48hrs (No condensation) | |
| Low Temperature Operation | -20°C ; 48hrs | |
| Low Temperature Storage | -30°C ; 96hrs | |
| Thermal Shock | -20°C (0.5hr) ~ 70°C (0.5hr) ; 10 Cycles | Non-Operating |
| ESD Test (Non-operation) | 150pF, 330 Ω , Contact ±4KV, Air : ±8KV. Note 1 | |
| | 200pF, 0 Ω , ±200V Contact test. Note 2 | |

Note: Measure Point:

1. LCD glass and metal bezel
2. IF connector pins

- END -