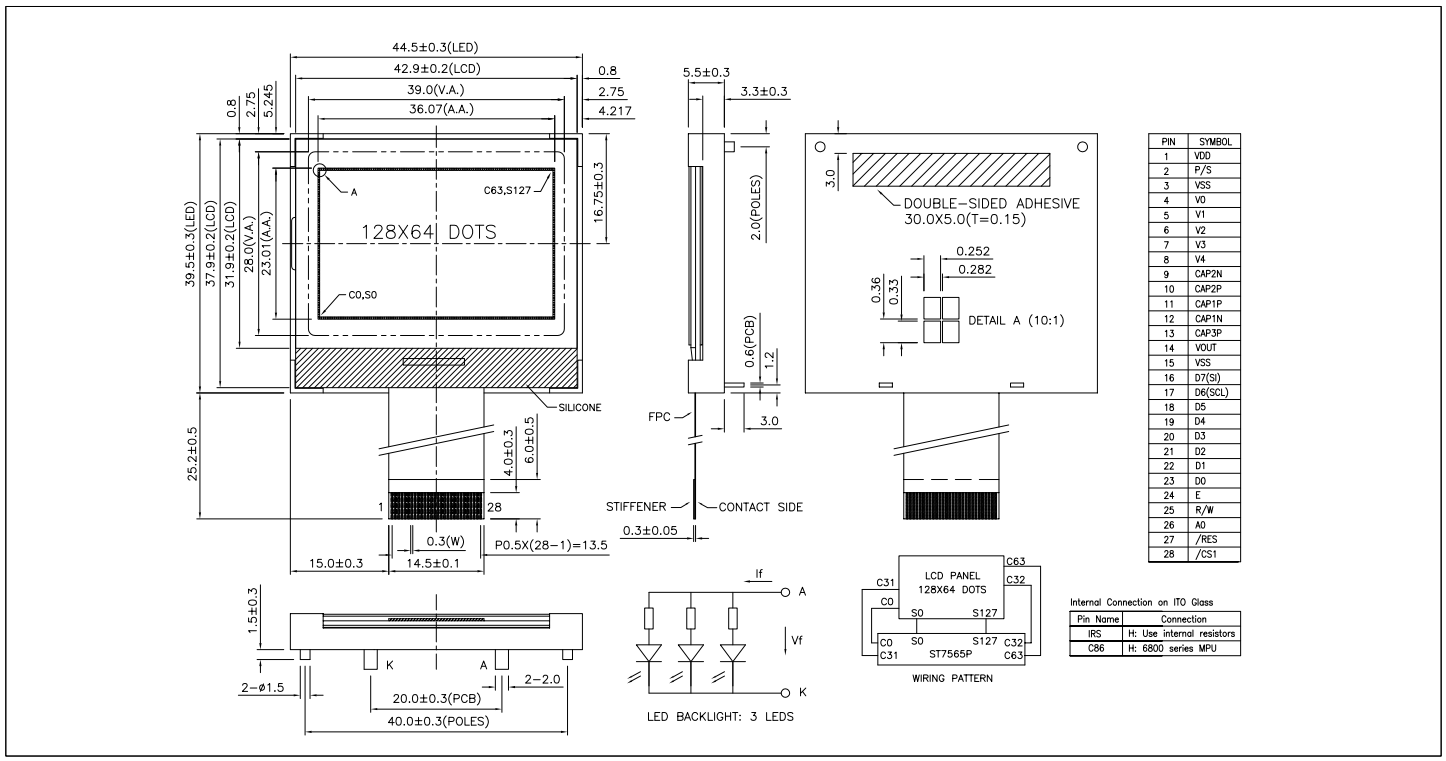
# LG12864H-DW 128 x 64 dots + white led backlight




## ABSOLUTE MAXIMUM RATINGS

| Item | Symbol | Min. | Max. | Unit |
|---|---|---|---|---|
| Supply Voltage(Logic) | $V_{DD}$ - $V_{SS}$ | -0.3 | 3.6 | V |
| Supply Voltage(LCD) | $V_{OUT}$ - $V_{SS}$ | -0.3 | 14.5 | V |
| Input Voltage | $V_I$ | -0.3 | $V_{DD}$ + 0.3 | V |
| Operating Temp. | $T_{opr}$ | -20 | 70 | °C |
| Storage Temp. | $T_{stg}$ | -30 | 80 | °C |

## MECHANICAL DATA

| Item | Nominal Dimensions | Unit |
|---|---|---|
| Module Size ( W x H x T ) | 44.5 x 39.5 x 8.5 | mm |
| Viewing Area ( W x H ) | 39.0 x 28.0 | mm |
| Dot Pitch ( W x H ) | 0.282 x 0.36 | mm |
| Dot Size ( W x H ) | 0.252 x 0.33 | mm |
| Weight | Approx. 14 | g |

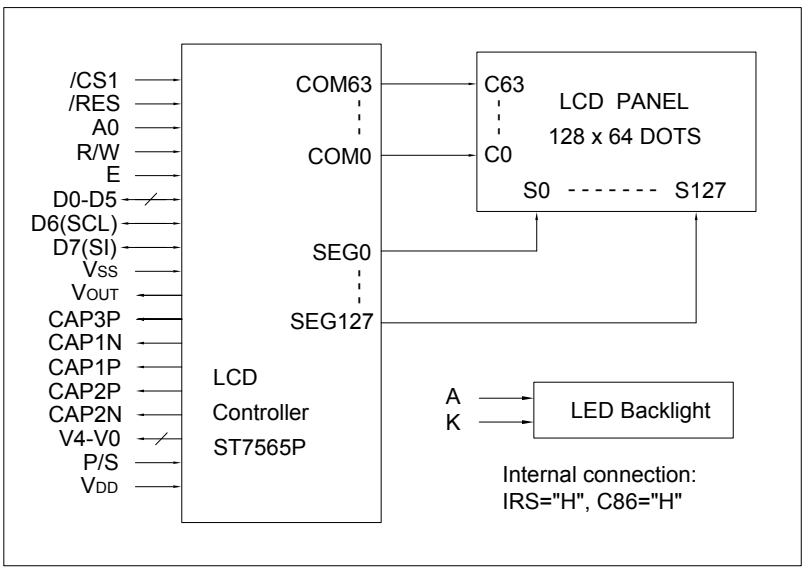
## ELECTRICAL CHARACTERISTICS ( $V_{DD}$=3.0V to 3.3V )

| Item | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Input High Voltage | $V_{IH}$ | -- | 0.8$V_{DD}$ | -- | $V_{DD}$ | V |
| Input Low Voltage | $V_{IL}$ | -- | 0 | -- | 0.2$V_{DD}$ | V |
| Output High Voltage | $V_{OH}$ | $I_{OH}$ = - 0.1mA | 0.8$V_{DD}$ | -- | $V_{DD}$ | V |
| Output Low Voltage | $V_{OL}$ | $I_{OL}$ = 0.1mA | 0 | -- | 0.2$V_{DD}$ | V |
| Supply Current | $I_{DD}$ | $V_{DD}$ =3.3V | -- | 0.4 | 0.8 | mA |
| LCD Driving Voltage | $V_0$ - $V_{SS}$ | Ta=25°C | -- | 9.9 | -- | V |

## PIN CONNECTIONS

| Pin | Symbol | Level | Function |
|---|---|---|---|
| 1 | $V_{DD}$ | 3V-3.3V | Power supply for logic and booster |
| 2 | P/S | H/L | H: Parallel mode L: Serial mode |
| 3 | $V_{SS}$ | 0V | GND |
| 4-8 | V0-V4 | -- | Power supply for LCD drive |
| 9 | CAP2N | -- | Capacitor 2 negative connection |
| 10 | CAP2P | -- | Capacitor 2 positive connection |
| 11 | CAP1P | -- | Capacitor 1 positive connection |
| 12 | CAP1N | -- | Capacitor 1 negative connection |
| 13 | CAP3P | -- | Capacitor 3 positive connection |
| 14 | $V_{OUT}$ | -- | DC/DC voltage converter output |
| 15 | $V_{SS}$ | 0V | GND |
| 16 | D7(SI) | H/L | P/S=H: D0 to D7 are 8-bit data bus. |
| 17 | D6(SCL) | H/L | P/S=L: D6 is serial clock input; |
| 18-23 | D5-D0 | H/L | D7 is serial data input. |
| 24 | E | H,H→L | Enable signal |
| 25 | R/W | H/L | H: Read L: Write |
| 26 | A0 | H/L | H: Display data L: Instruction code |
| 27 | /RES | L | Reset signal. Active "L". |
| 28 | /CS1 | L | Chip selection signal. Active "L". |

## BLOCK DIAGRAM




## LED BACKLIGHT SPECIFICATIONS (Ta=25°C)

| Item | Symbol | Typ. | Max. | Unit |
|---|---|---|---|---|
| Forward Voltage | $V_f$ | 2.9 | 3.1 | V |
| Forward Current | $I_f$ | 20 | -- | mA |
| LED Color | White | | | |