# TSG12864D Series

## Display Feature

| Item | Value |
|------|-------|
| Structure | COG |
| LCD Display Mode | STN-YG, Positive, Transflective |
| Viewing Angle | 6H |
| Driving Method | 1/64 duty, 1/9 bias |
| Backlight | Nil |
| Control/Driver IC | ST7565R |

## Mechanical Data

| Item | Value |
|------|-------|
| Outline | 31.0 x 27.0 x 1.7Max. |
| Viewing Area | 28.0 x 18.0 |
| Active Area | 25.964 x 15.02 |
| Dot Pitch | 0.203 x 0.235 |
| Dot Size | 0.183 x 0.215 |

## Absolute Maximum

| Item | MIN. | MAX. |
|------|------|------|
| Operating Voltage(V) | 0 | 3.6 |
| Operating Temperature(℃) | -10 | +60 |
| Storage Temperature(℃) | -20 | +70 |

## Electrical Characteristics

| Item | Symbol | MIN. | TYP. | MAX |
|------|--------|------|------|-----|
| Operating Voltage(V) | $V_{DD}$ | 2.7 | 3.0 | 3.3 |
| Input High Voltage(V) | $V_{IH}$ | $0.8V_{DD}$ | - | $V_{DD}$ |
| Input Low Voltage(V) | $V_{IL}$ | Vss | - | $0.2V_{DD}$ |
| Operating Current(mA) | $I_{DD}$ | - | - | 3.0 |
| Forward Voltage(V) | $V_f$ BL | | - | - |
| Forward Current(mA) | $I_f$ BL | - | - | - |

## Terminal Function

| No. | Pin Name | Descriptions | No. | Pin Name | Descriptions |
|-----|----------|--------------|-----|----------|--------------|
| 1 | VDD | Positive Power Supply | 14 | Vout | Voltage converter input/output |
| 2 | C86 | 80/68 Interface selection | 15 | VSS | Power supply ( GND ) |
| 3 | VSS | Power Supply ( GND ) | 16~23 | DB7~DB0 | Data Bus lines |
| 4~8 | V0~V4 | LCD driver supply voltage | 24 | E | Enable clock |
| 9 | C2+ | Capacitor positive connection | 25 | R/W | Read/write signal |
| 10 | C2- | Capacitor negative connection | 26 | A0 | Register selection |
| 11 | C1+ | Capacitor positive connection | 27 | /RES | Reset signal |
| 12 | C1- | Capacitor negative connection | 28 | /CS1 | Chip enable |
| 13 | C3+ | Capacitor positive connection | - | - | - |

## Outline Drawing