



SG12232B (122 DOTS X 32 DOTS)

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FEATURES

- ◆ BUILT-IN CONTROLLER (S6B1713 OR EQUIVALENT)
- ◆ +5 V POWER SUPPLY
- ◆ 1/32 DUTY CYCLE
- ◆ 8-BIT PARALLEL INTERFACE
- ◆ 4.2 V LED FORWARD VOLTAGE

Mechanical Data

| ITEM | DIMENSIONS | UNIT |
|-------------------------|-------------------|------|
| Module Size (W x H x T) | 74.0 x 28.0 x 6.5 | mm |
| Viewing Area (W x H) | 58.9 x 18.4 | mm |
| Active Area (W x H) | 54.87 x 14.37 | mm |
| Dot Size (W x H) | 0.41 x 0.41 | mm |
| Dot Pitch (W x H) | 0.45x 0.45 | mm |

INTERFACE PIN CONNECTIONS

| NO. | SYMBOL | LEVEL | FUNCTION |
|------|-----------------|-------|--------------------------------|
| 1 | V _{SS} | 0V | Power Supply Ground |
| 2 | V _{DD} | 5V | Power Supply Voltage |
| 3 | V _O | - | Contrast Adjustment Voltage |
| 4 | RS | H/L | H : Data, L : Instruction Code |
| 5 | R/W | H/L | H : Read / L : Write |
| 6 | E | H→L | Enable Signal |
| 7-14 | DB0-DB7 | H/L | Data Bus Line |
| 15 | /CS1 | L | Chip Select Signal For IC1 |
| 16 | CS2 | H | Chip Select Signal For IC2 |
| 17 | /RET | L | Reset Signal |
| 18 | V _{EE} | - | Power Supply Voltage For LCD |
| 19 | A | 4.2V | LED Power (+) |
| 20 | K | 0V | LED Power (-) |

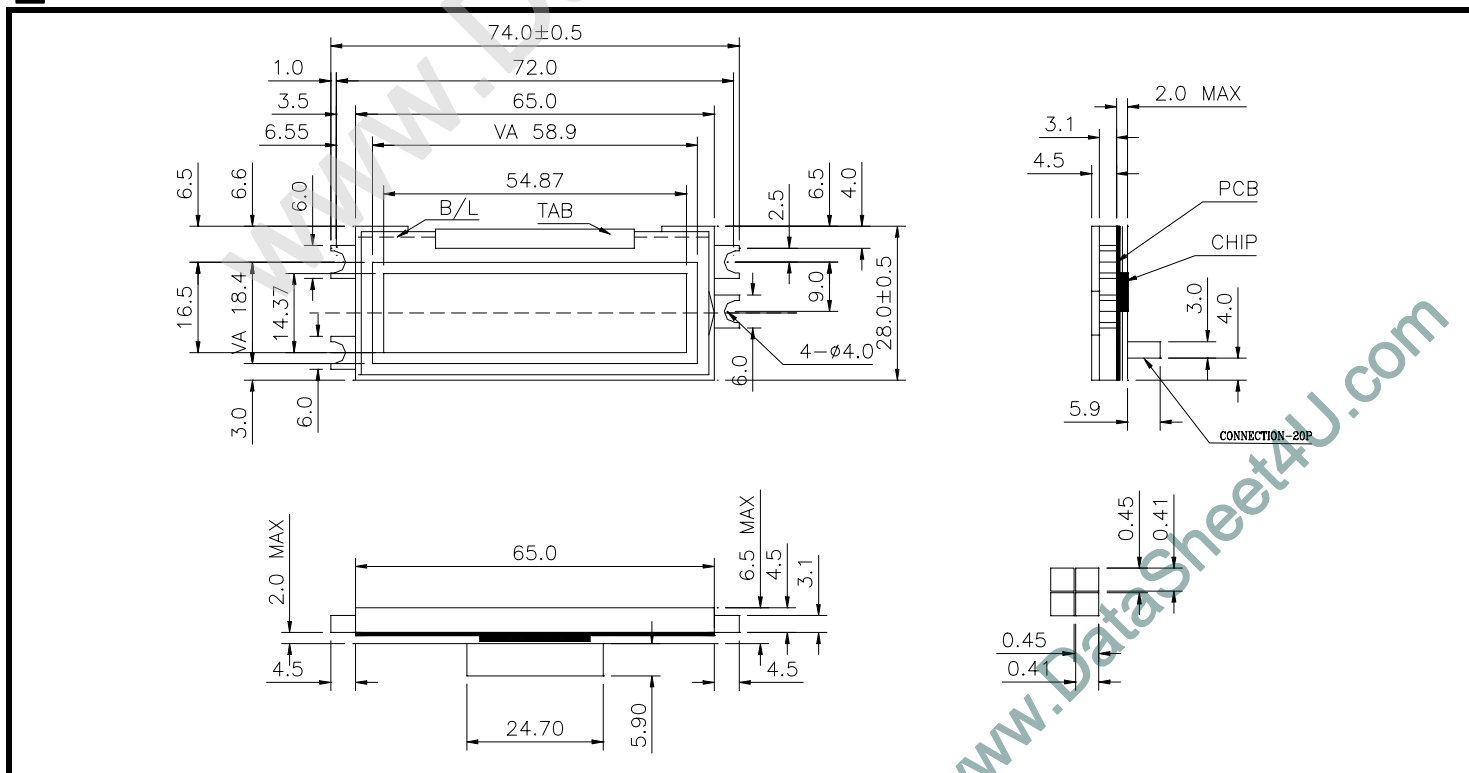
ABSOLUTE MAXIMUM RATINGS

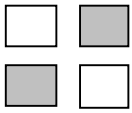
| ITEM | SYMBOL | MIN. | TYP. | MAX. | UNIT |
|------------------------------|----------------------------------|-----------------|------|-----------------|------|
| Supply Voltage For Logic | V _{DD} -V _{SS} | 0 | - | 7 | V |
| Supply Voltage For LCD Drive | V _{DD} -V _O | 0 | - | 17 | V |
| Input Voltage | V _I | V _{SS} | - | V _{DD} | V |

ELECTRICAL CHARACTERISTICS

| ITEM | SYMBOL | CONDITION | MIN. | TYP. | MAX. | UNIT | |
|--------------------------|----------------------------------|-----------------------------|------|------|------|-----------------|---|
| Supply Voltage For Logic | V _{DD} -V _{SS} | - | 2.4 | 3 | 3.6 | V | |
| Supply Voltage For LCD | V _{DD} -V _O | V _{DD} =5V Ta=25°C | 4.4 | 4.8 | 5.2 | V | |
| Supply Current | I _{DD} | V _{DD} =5V | - | 2.5 | 4.5 | mA | |
| Input Voltage | "HIGH" Level | V _{IH} | - | 2.2 | - | V _{DD} | V |
| | "LOW" Level | V _{IL} | - | - | - | 0.6 | V |
| Output Voltage | "HIGH" Level | V _{OH} | - | 2.4 | - | - | V |
| | "LOW" Level | V _{OL} | - | - | - | 0.4 | V |

EXTERNAL DIMENSIONS

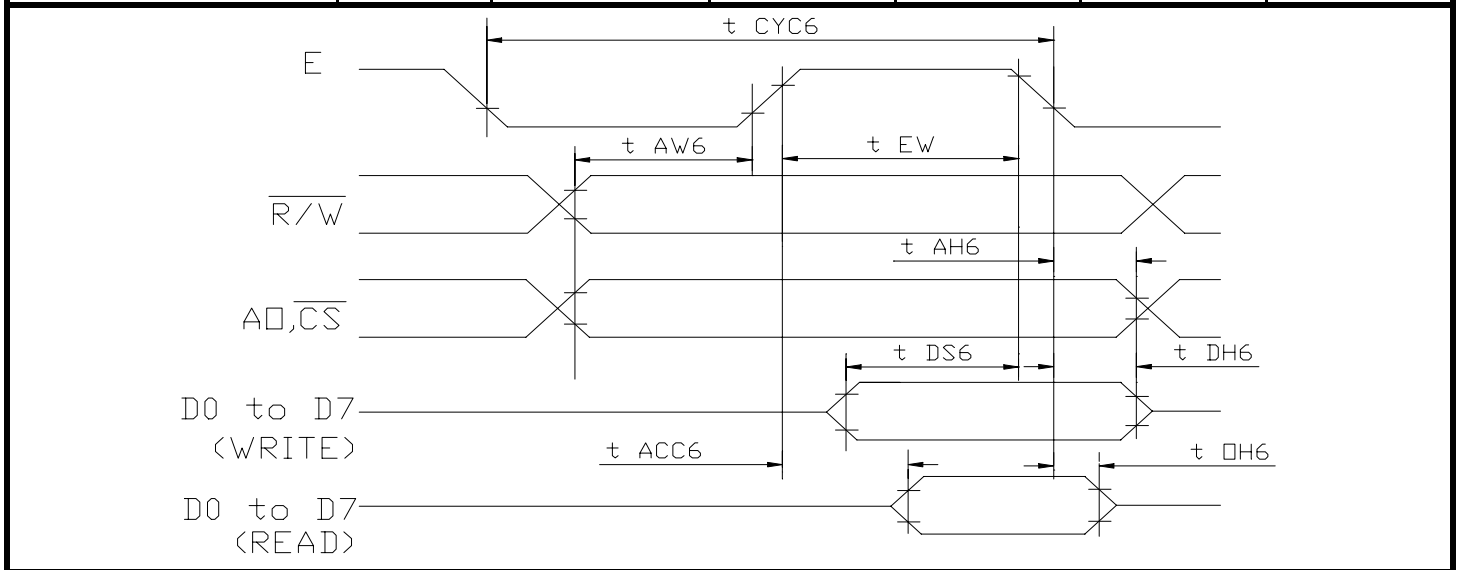




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■ TIMING CHARACTERISTICS

| ITEM | SYMBOL | MIN. | TYP. | MAX. | UNIT. |
|---------------------|------------|----------|------|------|-------|
| System Cycle Time | t_{CYC6} | 400 | - | - | ns |
| Address Set-up Time | t_{AW6} | 20 | - | - | ns |
| Address Hold Time | t_{AH6} | 10 | - | - | ns |
| Data Set-up Time | t_{DS6} | 80 | - | - | ns |
| Data Hold Time | t_{DH6} | 10 | - | - | ns |
| Output Disable Time | t_{OH6} | 10 | - | 60 | ns |
| Access Time | t_{ACC6} | - | - | 90 | ns |
| Enable Pulse Width | Read | t_{EW} | - | - | ns |
| | Write | | | | |



■ BLOCK DIAGRAM

