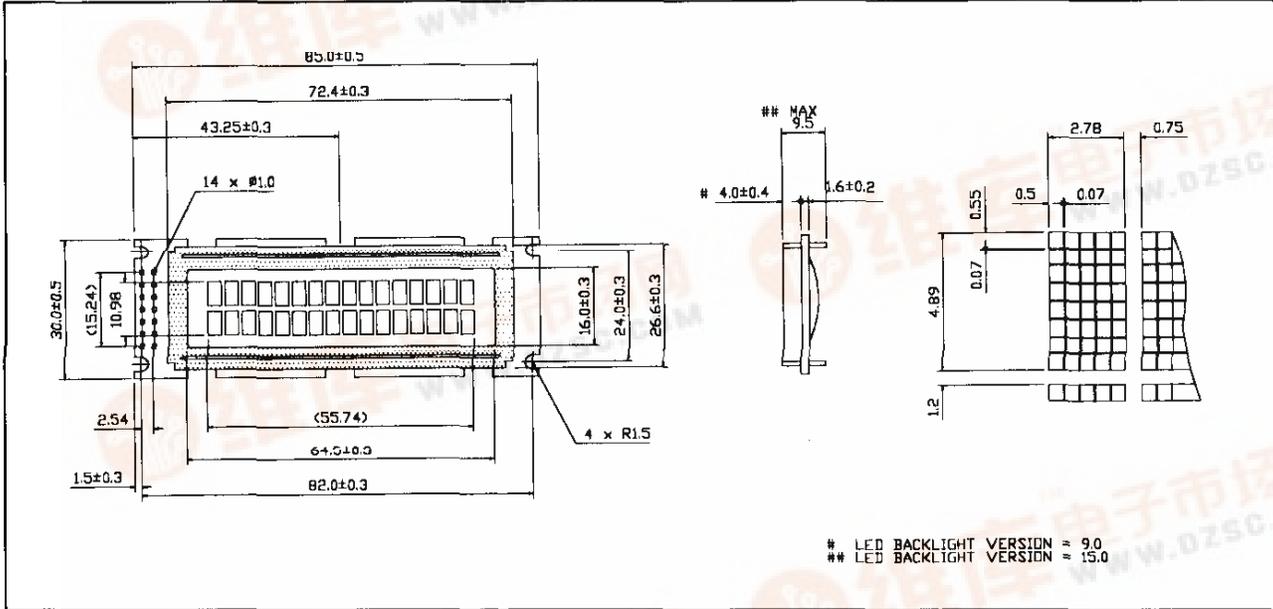


# AA16208

## \* EXTERNAL DIMENSIONS AND DISPLAY PATTERNS



### MECHANICAL DATA (Nominal dimensions)

Module size	85W x 30H x 9.5T (max.)mm
Effective display area	64.5W x 16H mm
Character size (5 x 8 dots)	2.78W x 4.89H mm
Character pitch	3.53 mm
Dot size	0.5W x 0.55H mm
Weight	about 30g (Approx.)

### \* PIN CONNECTIONS

1	V <sub>SS</sub>	0V
2	V <sub>DD</sub>	+5V
3	V <sub>O</sub>	LCD DRIVING VOLTAGE
4	RS	H: DATA INPUT L: INSTRUCTION INPUT
5	R/W	H: DATA READ L: DATA WRITE
6	E	ENABLE SIGNAL
7	DB0	DATA BUS LINE
8	DB1	NOTES: In the controller the data can be sent in either 4-bit 2-operation or 8-bit 1-operation so that it can interface to both 4 and 8 bit MPUS
9	DB2	
10	DB3	
11	DB4	
12	DB5	
13	DB6	
14	DB7	
15	K(-)	BACKLIGHT VERSION
16	A(+)	

### ABSOLUTE MAXIMUM RATINGS

	MIN.	MAX.
Power supply for logic (V <sub>DD</sub> - V <sub>SS</sub> )	-0.3	7.0 V
Power supply for LCD drive (V <sub>DD</sub> - V <sub>O</sub> )	0	13.5 V
Input voltage (V <sub>I</sub> )	0	V <sub>DD</sub> V
Operating temperature (T <sub>a</sub> )	0	+50°C
Storage temperature (T <sub>stg</sub> )	-20	+70°C

### ELECTRICAL CHARACTERISTICS

T<sub>a</sub> = 25°C, V<sub>DD</sub> = 5.0V ± 0.25V

Input "high" voltage (V <sub>Ih</sub> )	2.2V min.
Input "low" voltage (V <sub>Il</sub> )	0.6V max.
Output "high" voltage (V <sub>Oh</sub> ) (I <sub>OL</sub> = 0.2mA)	2.4V min.
Output "low" voltage (V <sub>OL</sub> ) (I <sub>OL</sub> = 1.6mA)	0.4V max.
Power supply current (I <sub>DD</sub> ) (V <sub>DD</sub> = 5.0v)	1.0mA typ 2.0mA max.

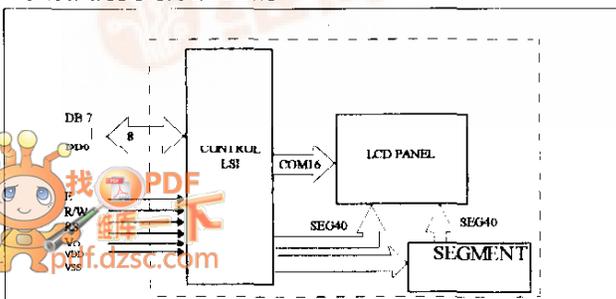
### Drive method

Power supply LCD drive (V<sub>DD</sub> - V<sub>O</sub>)

T <sub>a</sub> = 0°C	4.6V typ.
T <sub>a</sub> = 25°C	4.4V typ.
T <sub>a</sub> = 50°C	4.2V typ.

- (1) When interface data is 4 bits is long, data is transferred using only 4 buses of DB4~DB7 and DB0~DB3 are not used. Data transfer between the control LSI and the MPU completes when 4 bit data is transferred twice. Data of the higher order 4 bits (contents of DB4~DB7 when interface data is 8 bits long) is transferred first and then lower order 4 bits (contents of DB0~DB3 when interface data is 8 bits long).
- (2) When interface data is 8 bits long, data is transferred using 8 data buses of DB0~DB7.

### \* BLOCK DIAGRAM



### \* BACKLIGHT CHARACTERISTICS (T<sub>a</sub> = 25°C)

LED Characteristic	Symbol	Condition	Typ	Max	Unit
Forward Voltage	V <sub>f</sub>	I <sub>f</sub> = 120mA	4.2	4.6	V
Reverse Current	I <sub>r</sub>	V <sub>r</sub> = 10V		0.12	mA
Luminous Intensity	I <sub>v</sub>	I <sub>f</sub> = 120mA	100		MCD
Peak Emission Wave Length		I <sub>f</sub> = 120mA	565		nm
Spectral Line Half Width		I <sub>f</sub> = 120mA	40		nm

Item	Symbol	Standard	Typ	Max	Unit
Voltage	V <sub>el</sub>		100		Vrms
Frequency	F <sub>el</sub>		300		Hz