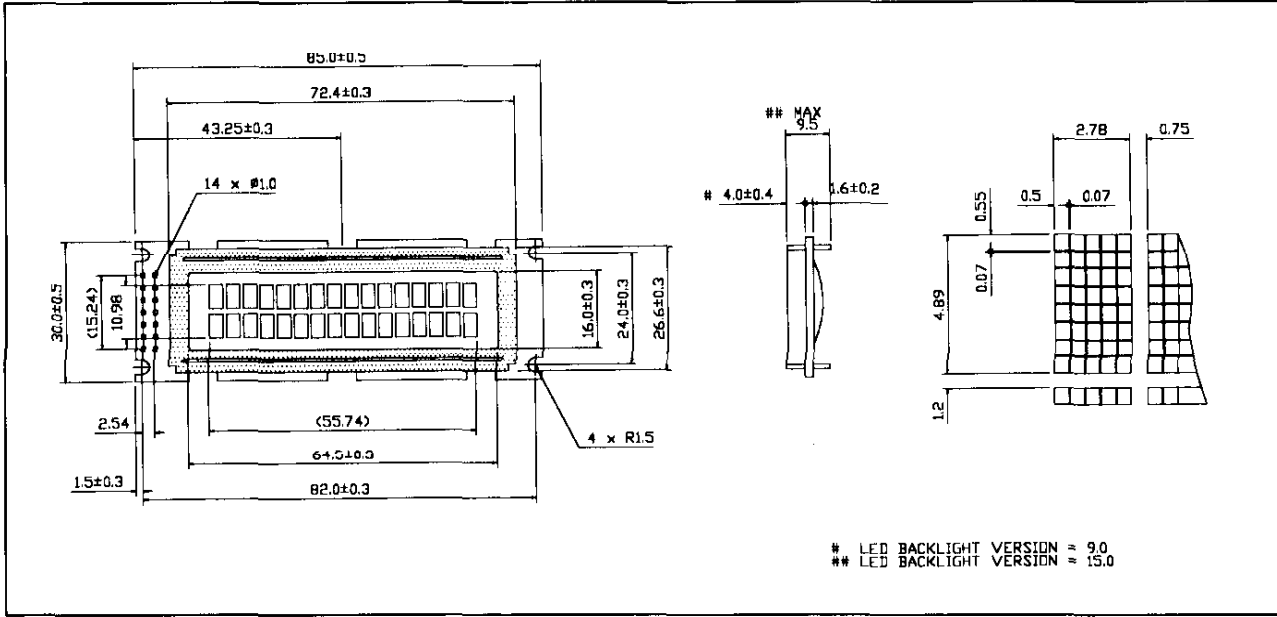


AA16208

* 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.)

ABSOLUTE MAXIMUM RATINGS MIN. MAX.

Power supply for logic (V _{DD} - V _{SS})	-0.3	7.0 V
Power supply for LCD drive (V _{DD} - V _O)	0	13.5 V
Input voltage (V _i)	0	V _{DD} V
Operating temperature (T _a)	0	+50°C
Storage temperature (T _{stg})	-20	+70°C

ELECTRICAL CHARACTERISTICS

T_a = 25°C, V_{DD} = 5.0V ± 0.25V

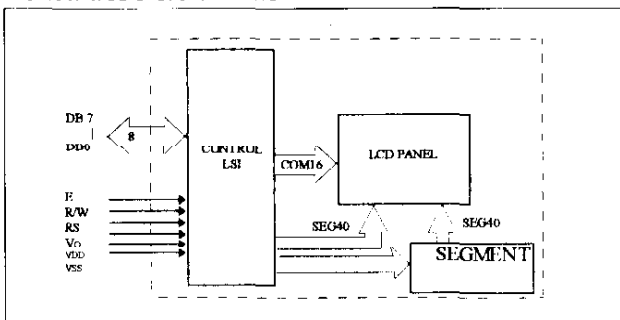
Input "high" voltage (V _{ih})	2.2V min.
Input "low" voltage (V _{il})	0.6V max.
Output "high" voltage (V _{oh}) (I _{oH} = 0.2mA)	2.4V min.
Output "low" voltage (V _{ol}) (I _{oL} = 1.6mA)	0.4V max.
Power supply current (I _{DD}) (V _{DD} = 5.0v)	1.0mA typ. 2.0mA max.

Drive method

Power supply LCD drive (V_{DD} - V_O)

T _a = 0°C	4.6V typ.
T _a = 25°C	4.4V typ.
T _a = 50°C	4.2V typ.

* BLOCK DIAGRAM



* PIN CONNECTIONS

1	V _{SS}	0V
2	V _{DD}	+5V
3	V _O	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(-)	
16	A(+)	

- (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.

* BACKLIGHT CHARACTERISTICS (T_a = 25°C)

LED	Characteristic	Symbol	Condition	Typ	Max	Unit
	Forward Voltage	V _f	I _f = 120mA	4.2	4.6	V
	Reverse Current	I _r	V _r = 10V	0.12		mA
	Luminous Intensity	K	I _f = 120mA	100		MCD
	Peak Emission Wave Length		I _f = 120mA	565		nm
	Spectral Line Half Width		I _f = 120mA	40		nm

EL	Item	Symbol	Standard	Unit
	Voltage	V _{el}	Typ 100	Vrms
	Frequency	f _{el}	400	Hz
	Current	I _{el}	12.3	mA