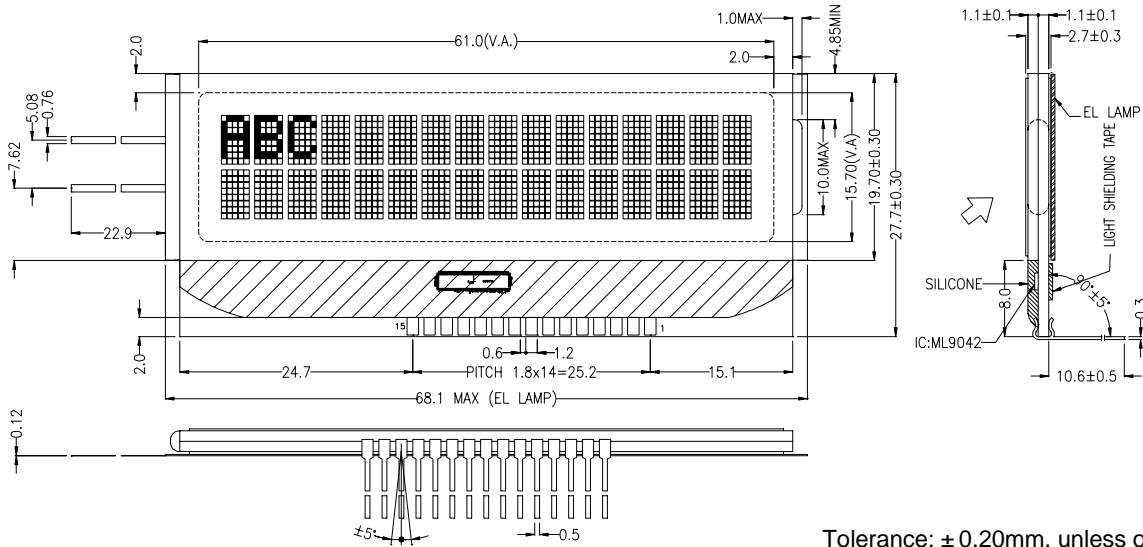


Standard LCD module

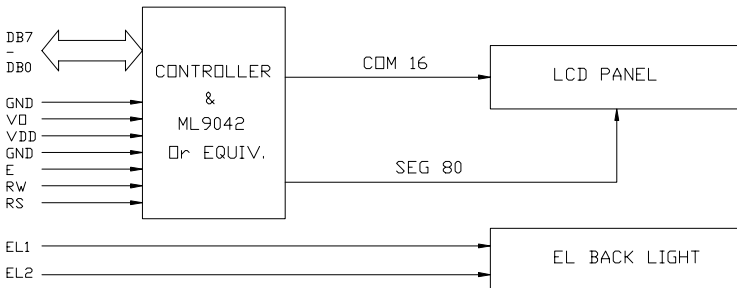
MC1602-20

OUTLINE DIMENSION

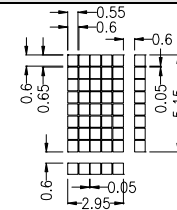


Tolerance: $\pm 0.20\text{mm}$, unless otherwise specified.

BLOCK DIAGRAM



DISPLAY PATTERN



MECHANICAL SPECIFICATION

Item	Dimensions(W)X(H)	Unit
Overall Size	65.0 x 27.7	MM
View Area	61.0 x 15.7	MM
Character	2.95 x 5.15	MM
Dot Size	0.55 x 0.60	MM
Dot Pitch	0.60 x 0.65	MM

PIN ASSIGNMENT

Pin no	Symbol	Function
1	RS	Data / instruction signal
2	R/W	Read / Write signal
3	E	Clock
4-7	DB0-DB3	The input / output pins to transfer data of lower order 4 bits between the CPU and the ML9042 in the Parallel I/F mode
8-11	DB4-DB7	The input / output pins to transfer data of upper 4 bits between the CPU and ML9042 in the parallel I/F mode
12	GND	GND
13	VDD	Power supply
14	VO	Power supply for LCD driver
15	GND	GND

ABSOLUTE MAXIMUM RATING

Item	Symbol	Condition	Min	Max	Unit
Supply for logic voltage	V _{DD}	25	-0.3	6.5	V
Input voltage	V _I	25	-0.3	V _{DD} +0.3	V

ELECTRICAL CHARACTERISTICS

Item	Symbol	Condition	Min	Typical	Max	Unit
Supply voltage for logic	V _{DD}	---	2.7	5.0	5.5	V
Supply current for logic	I _{DD}	---	---	---	1.2	mA
Operation voltage for LCD	V _O	---	2.7	---	5.5	V
Input voltage "H" level	V _{IH}	---	0.8	---	V _{DD}	V
Input voltage "L" level	V _{IL}	---	0	---	0.2 V _{DD}	V
Supply voltage for EL	V _F	---	---	85	100	V
Supply Frequency EL	Freq	---	---	600	1000	Hz

REMARKS:

- LCD type: STN.
- Back light type: EL back light feature.