

LM16X21A

Series LM16X21A LM16X21B

Features

- Built-in LED backlight version of LM16A21
- Number of characters: 16 characters × 2 lines
- Character format: 5 × 7 dots with cursor
- Type: STN LCD (Transmissive)
- Backlight: LED backlight is built in.
- Supply voltage: +5V
- Dot color/Background color:
 - LM16X21A: Dark blue/Yellow-green (Posi.)
 - LM16X21B: Yellow-green/Dark blue (Nega.)
- Net weight: Approx. 40g

Absolute maximum ratings

(Ta=25°C)

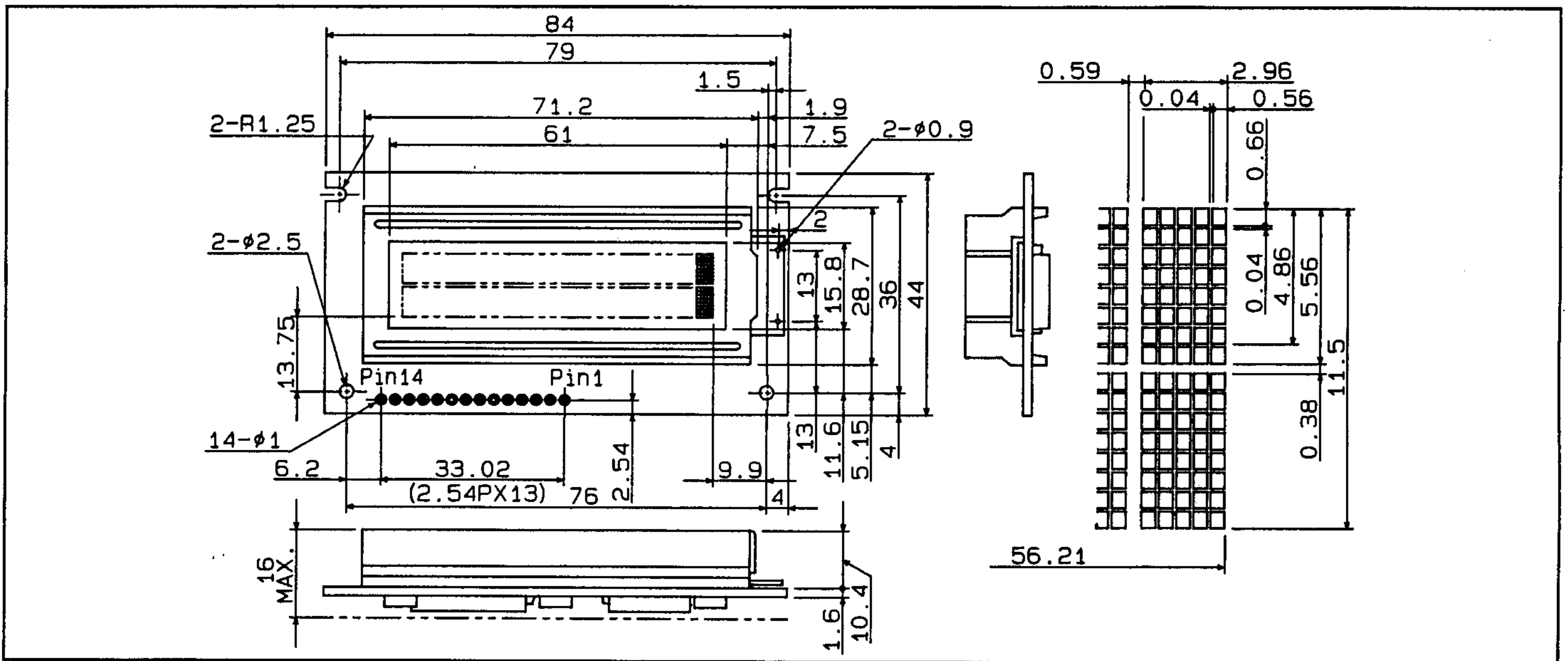
Parameter	Symbol	Min.	Max.	Unit
Supply voltage (Logic)	$V_{DD}-V_{SS}$	-0.3	+6.5	V
Supply voltage (LCD drive)	V_O-V_{SS}	0	+6.5	V
Input voltage	V_{IN}	-0.3	$V_{DD}+0.3$	V
Operating temperature	T_{opr}	0	+50	°C
Storage temperature	T_{stg}	-25	+70	°C

Note) Due to the characteristics of the LC material, the colors vary with environmental temperature.

LED backlight color: Yellow-green

Outline Dimensions

(Unit:mm)



Electro-optical Characteristics

(Ta=25°C)

Parameter	Symbol	Min.	Max.	Unit	
Supply voltage (Logic)	$V_{DD}-V_{SS}$	4.75	5.25	V	
Supply voltage (LCD drive)	V_O-V_{SS}	0.65*	—	V	
Input voltage (High level)	V_{IH}	2.2	V_{DD}	V	
Input voltage (Low level)	V_{IL}	-0.3	0.6	V	
Output voltage (High level)	V_{OH}	2.4	—	V	
Output voltage (Low level)	V_{OL}	—	0.4	V	
Input leakage current	I_{IL}	—	1	μA	
Power consumption (LED is ON)	P_d	608(408)*	911(611)	mW	
Viewing angle range**	$\phi=0^\circ$ $C_O=2.0$ (4.0)	θ_1	—	-25	deg.
		θ_2	25	—	
Contrast ratio**	$\phi=0^\circ$ $\theta=0^\circ$	C_O	5.0(7.0)	8.0(10.0)*	—
		Response time**	Rise	T_r	150*
Decay	T_d	150*	250		

*Typical value **Refer to page 73 for definition and measurement method.

Note 1) (): LM16X21B

Note 2) Supply voltage for LED backlight: +5V ± 5%

Interface Signals

Pin. No.	Symbol	Description
1	V_{SS}	Ground potential
2	V_{DD}	Power supply for logic and LCD (+)
3	V_O	Contrast adjustment
4	RS	Register select pin
5	R/W	Read/Write pin
6	E	Enable pin
7	DB0	Code I/O data LSB
8	DB1	Code I/O data 2nd bit
9	DB2	Code I/O data 3rd bit
10	DB3	Code I/O data 4th bit
11	DB4	Code I/O data 5th bit
12	DB5	Code I/O data 6th bit
13	DB6	Code I/O data 7th bit
14	DB7	Code I/O data MSB
15	V_{LED}	Power supply for LED backlight $V_{LED}: 5V, V_{LSS}: 0V$
16	V_{LSS}	