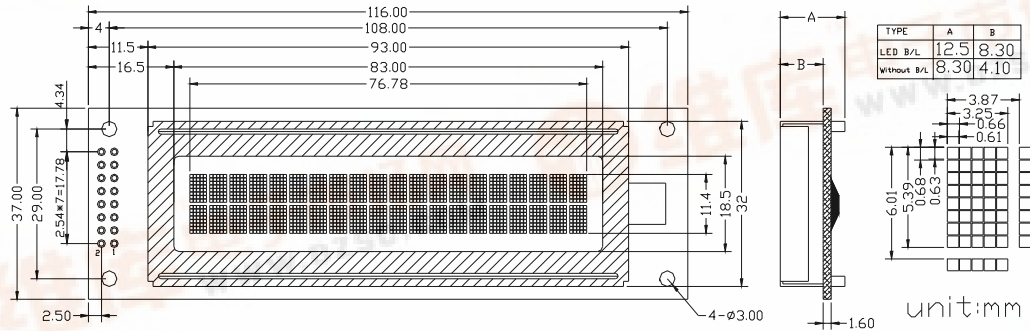



TC2002A(L)
TINSHARP ELECTRONICS CO.LTD
EXTERNAL DIMENSIONS AND DISPLAY PATTERN

MECHANICAL DATA (Nominal dimensions)

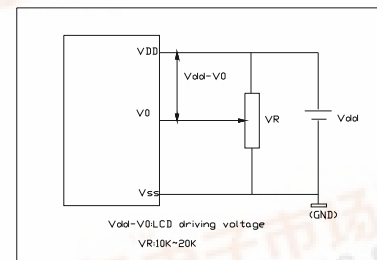
ITEM	SPECIFICATION	UNIT
Module Size(WxH)	116.0x37.0	mm
Viewing Area(WxH)	83.0x18.5	mm
Internel Area(WxH)	76.78x11.40	mm
Dot pitch(WxH)	0.66x0.68	mm
Dot Size(WxH)	0.61x0.63	mm
Character Pitch(WxH)	3.87x6.01	mm
Character Size(WxH)	3.25x5.39	mm
Number of character	20characterx2line	char

PIN CONFIGURATION

ITEM	SYMBOL	DESCRIPTION
1	VSS	Ground
2	VDD	Power supply for logic and LCD
3	V0	Operating voltage for LCD
4	RS	Register select
5	R/W	Read/Write Select
6	E	Read/Write Enable
7-14	DB0-DB7	Data Bus
15	K	Cathode of LED
16	A	Anode of LED

ELECTRICAL CHARACTERISTICS

Item	Symbol	Test Condition	Standard value			Unit
			min.	typ.	max.	
Supply Voltage for Logic	$V_{DD}-V_{SS}$	—	4.5	5.0	5.5	V
Supply Voltage for LCD	$V_{DD}-V_0$	—	0	—	5.0	V
Input high Voltage	V_{IH}	—	2.2	—	V_{DD}	V
Input low Voltage	V_{IL}	—	-0.3	—	0.6	V
Output high Voltage	V_{OH}	$-I_{OH}=0.2mA$	2.4	—	—	V
Output low Voltage	V_{OL}	$I_{OL}=1.2mA$	—	—	0.4	V
Power Supply Current	I_{DD}	$V_{DD}=5.0V$	—	1.8	3.0	mA
With B/L	I_{led}	$V_{DD}=5.0V$	—	140	—	mA
Drive method	1/16Duty		1/5Bias			

Power supply

Block diagram
