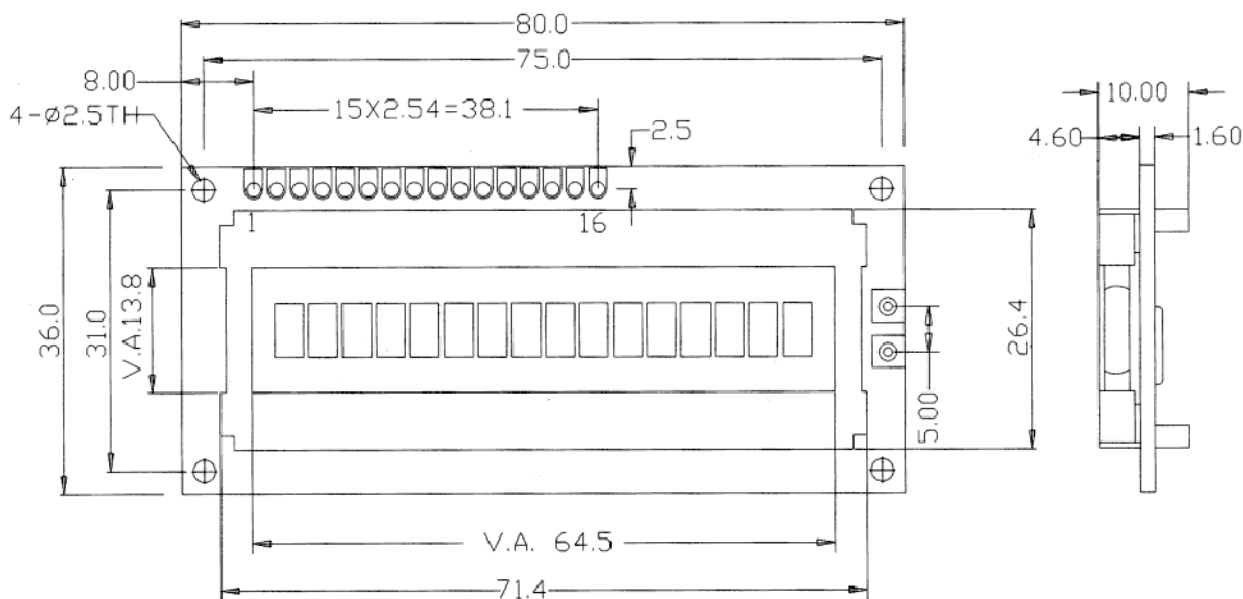


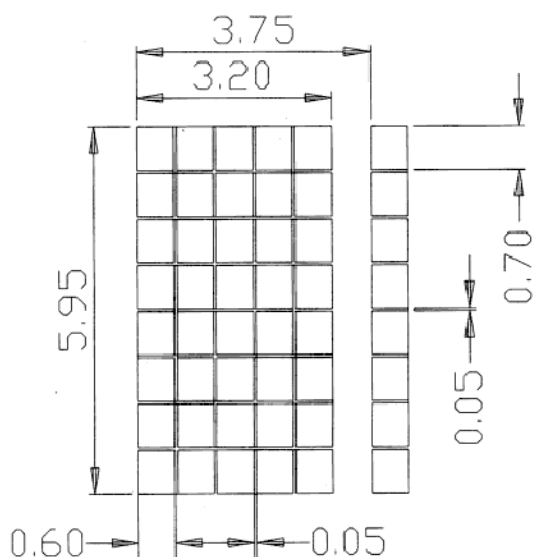
# ITM-1601A

1/16 DUTY, 1/5 BIAS  
16 CHAR. X 1 LINE

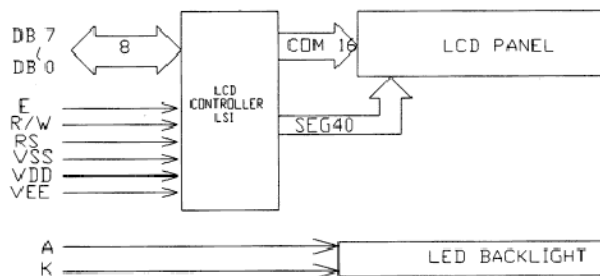
## 1 EXTERNAL DIMENSION



## 2 DISPLAY DOTS



## 3 BLOCK DIAGRAM



## 4 PIN CONNECTIONS

PIN NO	1	2	3	4	5	6	7	8
SIGNAL	VSS	VDD	VEE	RS	RW	E	DB0	DB1
PIN NO	9	10	11	12	13	14	15	16
SIGNAL	DB2	DB3	DB4	DB5	DB6	DB7	A	K

# ITM-1601 A

1/16 DUTY, 1/5 BIAS  
16 CHAR. X 1 LINE

## 5 ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C, V<sub>DD</sub>=5.0V±0.5V)

ITEM	SYMBOL	TEST CONDITION	MIN	TYPE	MAX	UNIT
Input High Voltage	V <sub>IH</sub>	-	2.2	-	V <sub>DD</sub>	V
Input Low Voltage	V <sub>IL</sub>	-	-0.3	-	0.6	V
Output High Voltage	V <sub>OH</sub>	I <sub>OH</sub> = -0.205mA	2.4	-	-	V
Output Low Voltage	V <sub>OL</sub>	I <sub>OL</sub> = 1.6mA	0	-	0.4	V
Supply Current	I <sub>DD</sub>	V <sub>DD</sub> = 5.0V	-	1.5	3.0	mA

## 6 ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sub>DD</sub>	4.5V ~ +5.5V	V
Lcd Supply Voltage	V <sub>EE</sub>	V <sub>DD</sub> -13.5 ~ V <sub>DD</sub> +0.3	V
Input Voltage	V <sub>r</sub>	V <sub>SS</sub> ~ V <sub>DD</sub>	V
Operating Temperature	T <sub>opr</sub>	0 ~ +50	°C
Storage Temperature	T <sub>stg</sub>	-20 ~ +70	°C

## 7 MECHANICAL SPECIFICATION

PARAMETER	DIMENSIONS ( mm )
Overall Size	80.0 X 36.0 X 10.0
Viewing Area	64.5 X 13.8
Character Size	5.95 X 3.2
Character Pitch	3.75
Dot Size	0.7 X 0.6
Weight	30 ( g )
Overall Size with Led B/L	80.0 X 36.0 X 13.0

## 8 FEATURE

PART NUMBER	LCD MODE	B/L
ITM-1601ATR	TN REFLECTIVE	--
ITM-1601ASR	STN REFLECTIVE	--
ITM-1601ATTL	TN TRANSFLECTIVE	LED
ITM-1601ASTL	STN TRANSFLECTIVE	LED