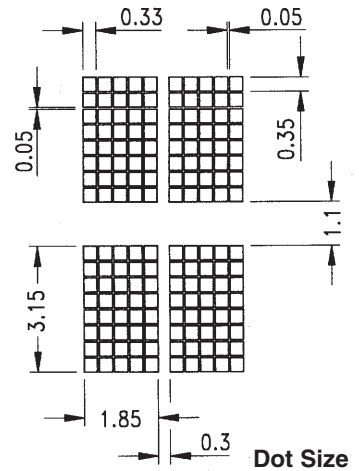
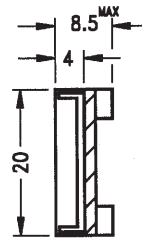
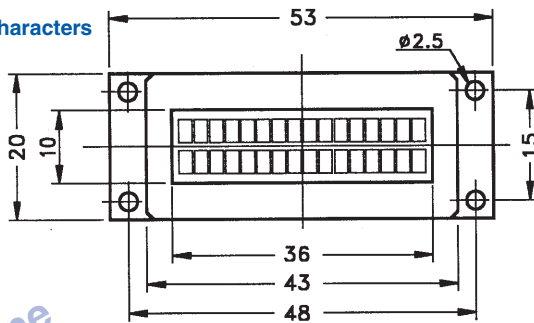


## BT 21603

2 Lines x 16 Characters

Tolerances:  $\pm 0.5$ 

Micro-Line

Dimensions [mm]

## MECHANICAL DATA

Parameter	Width x Height x Depth	Unit
Outline Dimensions	53 x 20 x 8 (with LED: 8)*	mm
Effective viewing area	36 x 10	mm
Dot Size	0.33 x 0.35	mm
Dot Pitch	0.38 x 0.40	mm
Character Matrix	5 x 7	dots
Character Size	1.85 x 2.75	mm
Character Pitch	2.15 x 4.25	mm
Weight	Approximate 9.5 (with LED: 10)	g

\* Types with integrated Connector: 9 mm Depth

## ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage (Logic)	$V_{DD}$ ( $V_{DD}-V_{SS}$ )	0	6.5	V
Supply Voltage (LCD Driver)	$V_{EE}$ ( $V_{DD}-V_0$ )	0	13.5	V
Input Voltage	$V_I$	$V_{SS}$	$V_{DD}$	V
Operating Temperature	$T_{OP}$	See Page 11		°C
Storage Temperature	$T_{ST}$	See Page 11		°C

## ELECTRICAL CHARACTERISTICS

Condition:  $T_a = 25^\circ\text{C}$ ,  $V_{DD} = 5.0 \pm 0.25$  V

Parameter	Symbol	Min.	Typ.	Max.	Unit
Input Voltage HIGH	$V_{INH}$	2.2	---	---	V
Input Voltage LOW	$V_{INL}$	---	---	0.6	V
Output Voltage HIGH	$V_{OH}$	2.4	---	---	V
Output Voltage LOW	$V_{OL}$	---	---	0.4	V
Supply Current (Logic)	$I_{DD}$	---	1.0	---	mA
Supply Current (LCD Driver)	$I_O$	---	0.5	---	mA
Duty Ratio	---	---	1 / 16	---	---

## LED BACKLIGHT (STANDARD COLOR GREEN)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	$V_F$	3.8	4.1	4.4	V
Supply Current	$I_F$ [at 25°C]	---	20	35	mA
Lamp Style	---	---	01	---	---
LED Segments	---	---	2	---	pcs

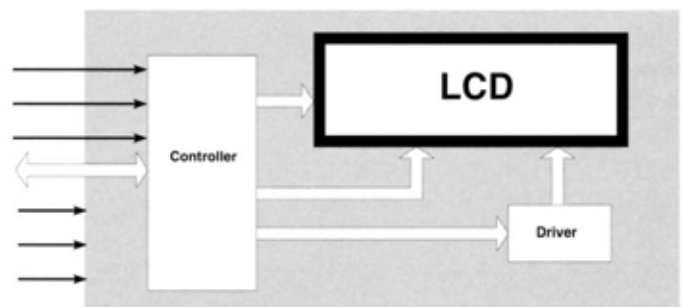
## PIN TABLE

Pin	Symbol	Signal Description
1	$V_{SS}$	GND (0 V)
2	$V_{DD}$	Power Supply (5 V)
3	$V_0$	Supply Voltage (LCD Driver)
4	RS	Register Select - LOW = Instruction, High = Data
5	R / $\bar{W}$	Read / Write LOW = MPU to LCM, High = LCM to MPU
6	E	Enable R / $\bar{W}$ = LOW: Data are taking over at falling edge of E R / $\bar{W}$ = HIGH: Data can be read at E = 1
7 to 14	DB <sub>0</sub> to DB <sub>7</sub>	Data Bus - Software selectable 4 or 8 Bit Mode
15	+ $V_{LED}$	Anode of LED Unit
16	- $V_{LED}$	Cathode of LED Unit

## ADDITIONAL INFORMATION

- ◆ Display Connector Type (Option):  
DIL 1 x 16 pin Connector - BT 21201 / SMD 1 x 16 pin Connector - BT 21000  
1 x 16 pin Film Cable 70 mm - BT 21300
- ◆ Controller Type - SPLC 780 (1) or compatible

## BLOCK DIAGRAM



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