



## Feature

1. No controller
2. +5V power supply.
3. 1/160 duty cycle.
4. 4-Bit parallel or 1-Bit serial interface mode

## Pin Assignment

Pin	Symbol	Function
1	Vss	Power supply (GND)
2	M	Control signal for A.C. driving
3	FLM	Indicates beginning of each display cycle
4	CL1	Latches the serial data in shift register
5	CL2	Clock signal for shifting the serial data
6	DB3	Data bus line
7	DB2	Data bus line
8	DB1	Data bus line
9	DB0	Data bus line
10	Vee	Power supply for LCD driving
11	Vdd	Power supply (+5V)
12	Vo	Contrast Adjustment
13	DISPOFF	Controls display off, 0: off, 1: on
14	A	Power supply for LED +4.2V RA=0
15	K	Power supply for LED 0V

## Mechanical Data

Item	Standard Value	Unit
Module Dimension	89.2 x 85.0	mm
Viewing Area	62.0 x 62.0	mm
Dot Size	0.34 x 0.34	mm
Dot Pitch	0.38 x 0.38	mm

## Absolute Maximum Rating

Item	Symbol	Standard Value			Unit
		min.	typ.	max.	
Power Supply	VDD-VSS	4.75	5.0	5.52	V
Input Voltage	VI	-0.3	--	VDD	V

Note: VSS=0 Volt, VDD=5.0 Volt

## Electronical Characteristics

Item	Symbol	Condition	Standard Value			Unit
			min.	typ.	max.	
Input Voltage	VDD	L level	0.7V <sub>DD</sub>	--	VDD	V
	VIO	H level	--	--	0.3V <sub>DD</sub>	V
Supply Current	IDD	VDD=+5V	--	1.5	3	mA
Recommended LC Driving Voltage for Normal Temp. Version module	VDD-VO	-20°C	16.5	18.0	19.5	V
		25°C	15.5	17.0	18.5	
		60°C	14.5	16.0	17.5	
LED Forward Voltage	VF	25°C	--	4.2	4.6	V
LED Forward Current	IF	25°C	--	500	1000	mA
EL Power Supply Current	IEL	Vel=110VAC;400Hz	--	--	5.0	mA