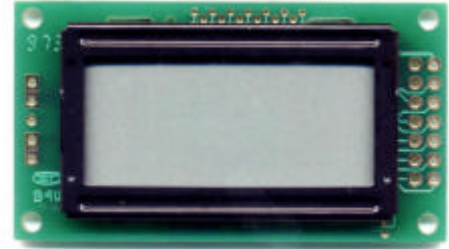


**Features:**

- Number of Characters: 8 Characters x 2 Lines
- Display Font: 5 x 7 Dots with Cursor
- Built-in Controller: HD44780 or Comp
- Input Data: 4 Bits or 8 Bits Interface
- Power Supply: +5V Single Power
- Duty Cycle: 1/16 Duty
- Options: EL/LED Backlight, TN/STN


**Mechanical Parameters**

Module Size	58.0W x 32.0H x 8.6T mm
Module Size with LED Backlight	58.0W x 32.0H x 12.7T mm
Viewing Area Size	38.0W x 16.8H mm
Dot Size	0.56 x 0.66 mm
Dot Pitch	0.66 x 0.70 mm

**Absolute Maximum**

Item	Symbol	Minimum	Maximum	Unit
Power Supply for Logic	Vdd	-0.3	+7.0	V
Power Supply for LCD Drive	Vlcd	Vdd – 11.5	Vdd + 0.3	V
Input Voltage	Vi	-0.3	Vdd + 0.3	V
Operating Temperature	Ta	0	+50	C
Storage Temperature	Tstg	-10	+70	C

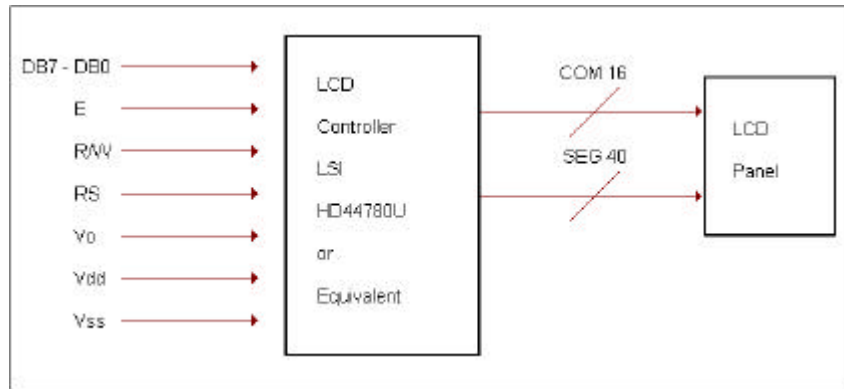
**Electrical Characteristics** (Vdd = 5.0V ± 5%, Ta = 25°C)

Item	Symbol	Conditions	Minimum	Typical	Maximum	Unit
Power Supply for Logic	Vdd	-	4.5	-	5.5	V
Operating Voltage for LCD	Vdd – Vo	-	-	5.0	-	V
Input “High” Voltage	Vih	-	2.2	-	Vdd	V
Input “Low” Voltage	Vil	-	-0.3	-	0.6	V
Output “High” Voltage	Voh	-loh = 0.2mA	2.4	-	-	V
Output “Low” Voltage	Vol	lol = 1.2mA	-	-	0.4	V
Power Supply Current	Idd	Vdd = 5.0V	-	-	3.0	mA

**Pin Assignment**

Number	Symbol	Level	Pin Description	Function
1	Vss	--	Ground	0V
2	Vdd	--	Supply Voltage for Logic	5V
3	Vo	--	LCD Contrast Adjust	By User
4	RS	H/L	Register Select	H: Data, L: Instruction Code
5	R/W	H/L	Read/Write	H: Data Read, L: Data Write
6	E	H, H → L	Enable	Enable Signal
7	DB0	H/L	Data Bit 0	8-Bit Interface
8	DB1	H/L	Data Bit 1	8-Bit Interface
9	DB2	H/L	Data Bit 2	8-Bit Interface
10	DB3	H/L	Data Bit 3	8-Bit Interface
11	DB4	H/L	Data Bit 4	4 or 8-Bit Interface
12	DB5	H/L	Data Bit 5	4 or 8-Bit Interface
13	DB6	H/L	Data Bit 6	4 or 8-Bit Interface
14	DB7	H/L	Data Bit 7	4 or 8-Bit Interface

**System Block Diagram**



**Assembly Diagram**

