



PIN CONNECTIONS

Pin	Symbol	Level	Function
1	V _{SS}	0V	GND
2	V _{DD}	+5V	Power supply for Logic
3	V ₀	-	Operating voltage for LCD
4	RS	H/L	H: Data L: Instruction code
5	R/W	H/L	H: Read L: Write
6	E	H/L	Enable signal
7	DB0	H/L	Data bus line
8	DB1		
9	DB2		
10	DB3		
11	DB4		
12	DB5		
13	DB6		
14	DB7		
15	LEDA	+5V	Power supply for LED backlight
16	LEDK	0V	

NOTES:

- Built-in controller (KS0066 or equivalent)
- 5.0V / 3.3V power supply optional.
- 4-/8-bit 68XX MPU/4 lines SPI/IIC serial peripheral interface optional

MECHANICAL DATA

Item	Nominal Dimensions	Unit
Module Size (W x H x T)	116.0X37.0X13.7	mm
Viewing Area (W x H)	85.0X18.6	mm
Character Size (W x H)	3.20X5.55	mm
Dot Size (W x H)	0.60X0.65	mm

ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Min.	Max.	Unit
Supply Voltage (Logic)	V _{DD} -V _{SS}	-0.3	7.0	V
Supply Voltage (LCD)	V _{DD} -V ₀	-0.3	13.0	V
Input Voltage	V _I	-0.3	V _{DD} +0.3	V
Operating Temp.	T _{OPR}	-20	+70	°C
Storage Temp.	T _{STG}	-30	+80	°C

ELECTRICAL CHARACTERISTICS (V_{DD}=3.3V, T_a=25°C)

Item	Symbol	Min.	Typ.	Max.	Unit
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}	2.4		V _{DD}	V
Output Low Voltage	V _{OL}	-	-	0.4	V
Supply Current	I _{DD}	-	1.5	-	mA
LCD Driving Voltage	V _{DD} -V ₀	-	4.3	-	V

LED BACKLIGHT SPECIFICATIONS (T_a=25°C)

Item	Forward Voltage	Forward Current
Yellow-green	4.1V	140mA
White	3.1V	30 mA