



### Feature

1. Built-in controller (KS0107, KS0108 or Equiv.)
2. +5V power supply
3. 1/64 duty cycle
4. Negative voltage Built-in

### Pin Assignment

Pin#	Symbol	Function
1	Vdd	Power supply (+5V)
2	GND	Power supply (GND)
3	Vo	Contast Adjustment
4-11	DB0-DB7	Data Bus line
12	CS1	Chip select for IC2
13	CS2	Chip select for IC2
14	RST	Reset signal
15	R/W	Data Read/Write
16	D/I	Data/Instruction
17	E	Enable signal
18	Vee	Negative voltage output(+4.2V)
19	A	Power Supply for LED
20	K	Power Supply for LED (0V)

### Mechanical Data

Item	Standard Value	Unit
Module Dimension	75.0 x 52.7	mm
Viewing Area	60.0 x 32.6	mm
Dot Size	0.39 x 0.39	mm
Dot Pitch	0.43 x 0.43	mm

### Absolute Maximum Rating

Item	Symbol	Standard Value			Unit
		min.	typ.	max.	
Power Supply	VDD-VSS	4.5	5.0	5.5	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	---	0.3V <sub>DD</sub>	V
Supply Current	IDD	VDD=+5V	---	4.0	5.2	mA
Recommended LC Driving Voltage for Normal Temp. Version module	VDD-V0	0°C	9.7	10.2	10.7	V
		25°C	7.5	8.0	8.5	
		50°C	8.6	9.1	9.6	
LED forward voltage	VF	25°C	---	4.0	4.4	V
LED forward current	IF	25°C Edge	---	100	200	mA
EL Power Supply Current	IEL	Vel=110VAC;400Hz	---	---	5.0	mA