



### Feature

1. 192x64 dots includes cursor
2. Built-in controller (KS0107,KS0108 or equivalent)
3. +5V power supply(Also available for +3V)
- 4. 1/64duty cycle
- 5. LED can be driven by pin1, pin2, or A and K

### Terminal Function

Pin No.	Symbol	Function
1	V <sub>SS</sub>	GND
2	V <sub>DD</sub>	Supply voltage for logic
3	V <sub>0</sub>	Contrast Adjustment
4	D/I	Data/instruction
5	R/W	Data read/write
6	E	Enable signal
7-14	DB0-DB7	H/L Data bus line
15	CS1	Chip select for IC1
16	/RST	Reset signal
17	CS2	Chip select for IC2
18	CS3	Chip select for IC3
19	V <sub>ee</sub>	Negative Voltage output
20	A	Backlight LED+

### Mechanical Data

Item	Value	Unit
Outline	130.0 x 65.0	mm
Viewing Area	102.0 x 39.0	mm
Active Area	96.0x 32.0	mm
Dot Size	0.46 x 0.46	mm
Dot Pitch	0.5 x 0.5	mm

### Electrical Characteristics

Item	Symbol	Min	Typ	Max
Operating Voltage(V)	V <sub>DD</sub>	4.7	5.0	5.3
Supply Voltage For LCD	V <sub>DD</sub> -V <sub>0</sub>	—	12	—
Input High Voltage(V)	V <sub>IH</sub>	0.7	—	V <sub>DD</sub>
Input Low Voltage(V)	V <sub>IL</sub>	V <sub>SS</sub>	—	0.6
Operating Current(mA)	I <sub>DD</sub>	—	3.6	4.5

### Backlight Characteristics

Item	Symbol	Min	Typ	Max	Unit
Forward Voltage	V <sub>f</sub> (edge)	3.4	3.5	3.6	V
Forward Current	I <sub>f</sub> (edge)	48	64	80	mA

### Absolute Maximum

Item	Symbo	Min	Max
Operating Voltage(V)	V <sub>dd</sub>	-0.3	5.5
Operating Temperature(°C)	T <sub>op</sub>	-20	+70
Storage Temperature (°C)	T <sub>st</sub>	-30	+80