

## PRODUCT SPECIFICATION

<b>PART NAME</b>	<b>COB LCD MODULE</b>
<b>MODEL NO.</b>	<b>CG-240128SX-DIW</b>
<b>REVISION</b>	<b>Version 1.0</b>
<b>CUSTOMER APPROVAL</b>	
<b>DATE</b>	

<b>DESIGNED BY</b>	<b>CHECKED BY</b>	<b>APPROVED BY</b>
<b>HUANGZECHAO</b>	<b>LIXIANGXIN</b>	<b>ZHANGXIAN</b>

## 1. FUNCTIONS & FEATURES

### Features

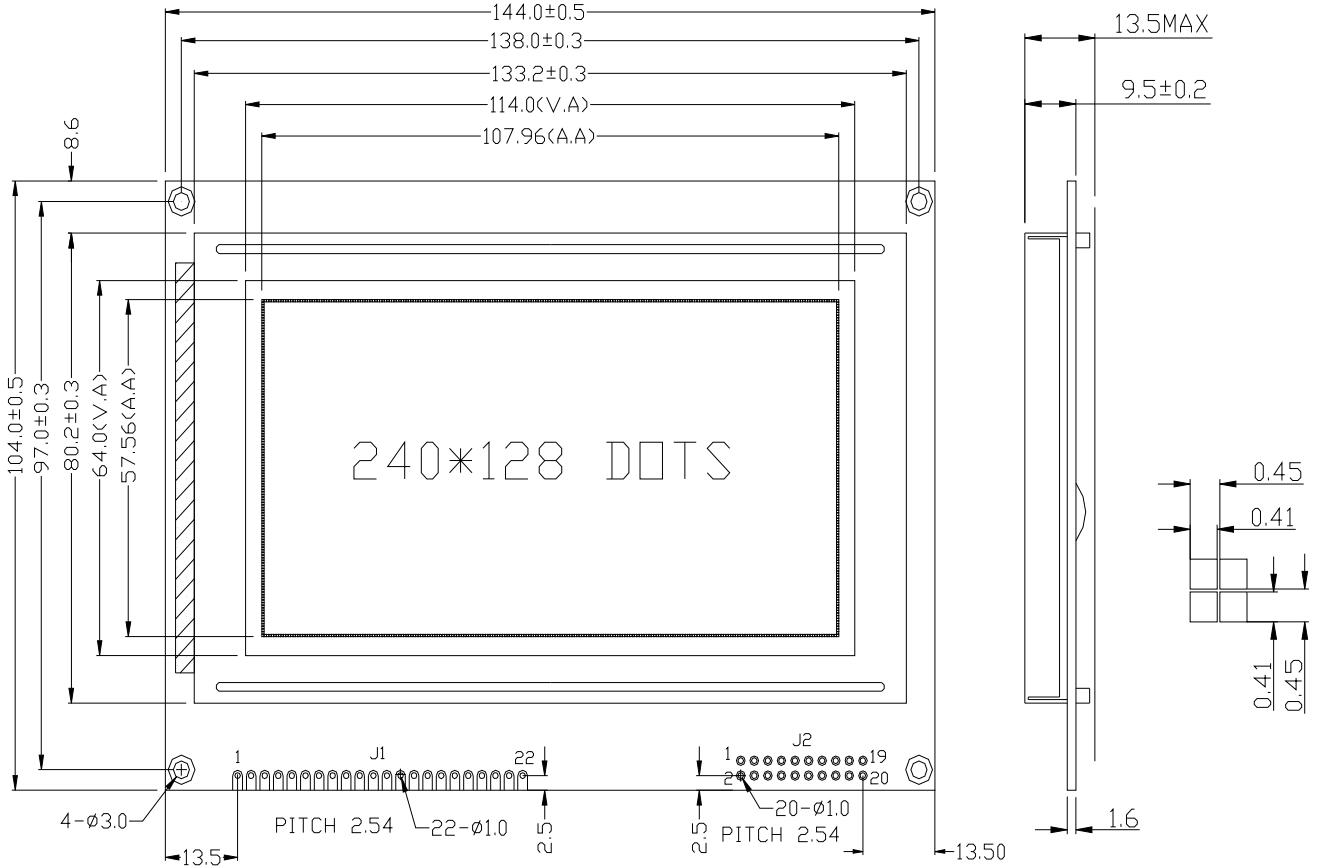
- Dot Matrix: 240×128 Dots
- LCD Mode: FFSTN
- Controller IC: SAP1024 or Equivalent
- Driving Method: 1/128 Duty; 1/12 Bias
- Viewing Angle: 6 O'clock direction
- 8080 serial 8-Bit MPU Interface
- Backlight: LED
- Operating Temperature Range: -20 to 70°C;
- Storage Temperature Range : -30 to 80°C;

Note: Color tone is slightly changed by temperature and driving voltage.

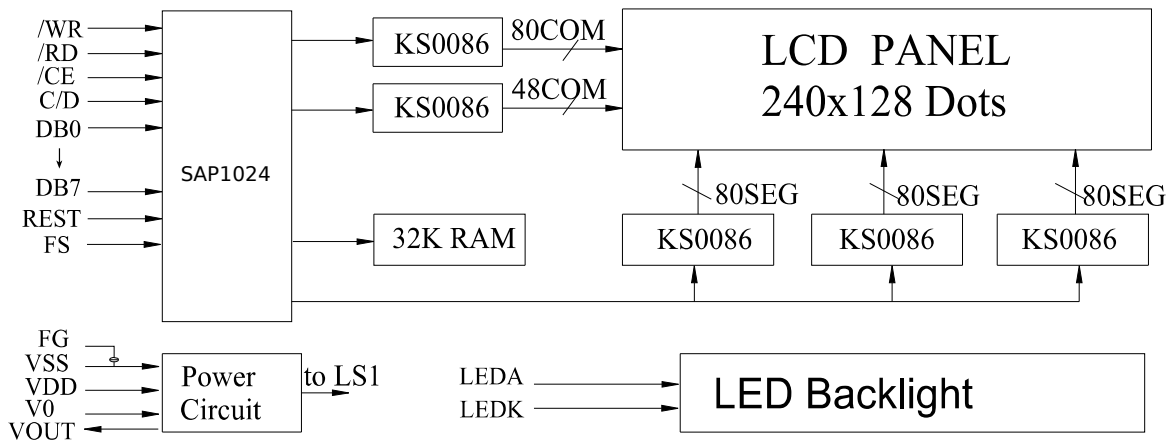
## 2. MECHANICAL SPECIFICATIONS

ITEM	SPECIFICATIONS	UNIT
Module Size	144.0L×104.0W×13.5 (max) H	mm
View Area	114.0×64.0	mm
Effective Area	240×128	dots
Dot Size	0.41×0.41	mm
Dot Pitch	0.45×0.45	mm

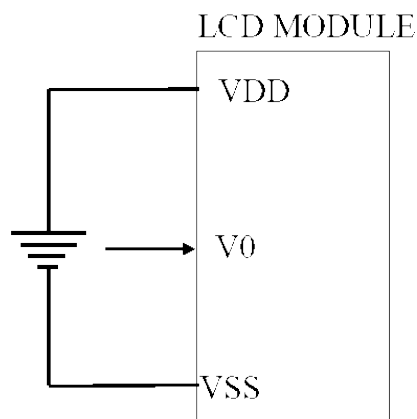
### 3. EXTERNAL DIMENSIONS



### 4. BLOCK DIAGRAM



## 5. POWER SUPPLY



## 6. PIN DESCRIPTION

J1:

管脚号	管脚名称	电平	管脚功能描述
1	A	—	LED 背光电源正极 (+5V)
2	K	—	LED 背光电源负极 (GND)
3	VEE	—	LCD 驱动负电压输出
4	V0	—	LCD 驱动负电压输入 (调节液晶对比度)
5	NC	—	
6	VSS		电源地 (GND)
7	VDD		电源供电 (+5V)
8	VEE	—	LCD 驱动负电压输出
9	/WR	L	指令和数据写信号, /WR=0 有效
10	/RD	L	指令和数据读信号, /RD=0 有效
11	/CE	L	片选使能信号, /CE=0 有效
12	C/D	H/L	指令和数据信号, C/D=1, 指令信号; C/D=0, 数据信号
13	/RST	L	复位控制信号, /RST=0 有效
14	DB0	H/L	数据线
15	DB1	H/L	数据线
16	DB2	H/L	数据线
17	DB3	H/L	数据线
18	DB4	H/L	数据线
19	DB5	H/L	数据线
20	DB6	H/L	数据线
21	DB7	H/L	数据线
22	FS	H/L	字体选择, FS=1, 6*8; FS=0, 8*8

J2:

管脚号	管脚名称	电平	管脚功能描述
1	FG	--	地线(铁框接地)
2	VSS	--	电源地(GND)
3	VDD	--	电源供电(+5V)
4	V0	--	LCD 驱动负电压输入(调节液晶对比度)
5	/WR	L	指令和数据写信号, /WR=0 有效
6	/RD	L	指令和数据读信号, /RD=0 有效
7	/CE	L	片选使能信号, /CE=0 有效
8	C/D	H/L	指令和数据信号, C/D=1, 指令信号; C/D=0, 数据信号
9	/RST	L	复位控制信号, /RST=0 有效
10	DB0	H/L	数据线
11	DB1	H/L	数据线
12	DB2	H/L	数据线
13	DB3	H/L	数据线
14	DB4	H/L	数据线
15	DB5	H/L	数据线
16	DB6	H/L	数据线
17	DB7	H/L	数据线
18	FS	H/L	字体选择, FS=1, 6*8; FS=0, 8*8
19	VEE	--	LCD 驱动负电压输出(输出电压到 V0)
20	LED+	--	LED 背光电源正极(+5V)

## 7. MAXIMUM ABSOLUTE LIMIT (T=25°C)

Items	Symbol	Standard Value	Unit
Supply Voltage	Vdd	-0.3~6.0	V
Input Voltage	Vin	Vss~Vdd	V
Operating Temperature	Top	-20~70	°C
Storage Temperature	Tst	-30~80	°C

Note: Voltage greater than above may damage the module.  
All voltages are specified relative to VSS=0V.

## 8. ELECTRICAL CHARACTERISTICS

### 8.1 DC Characteristics (VDD=+5V, VSS=0V, Ta=-0~+50° C)

Items	Symbol	Min	TYP	Max	Unit	Condition
Operating Voltage	Vdd	4.8	5.0	5.2	V	Vdd
Supply Current	Idd	—	8	15	mA	except LED backlight
Input High Voltage	Vin	Vdd -2.2	—	Vdd	V	RS,RW,E,DB0-DB7
Input Low Voltage	Vil	0	—	0.8	V	
Output High Voltage	Voh	Vdd -0.3	—	Vdd	V	Ioh=-0.1mA,DB0-DB7
Output Low Voltage	Vol	—	—	0.3	V	Iol=0.1mA,DB0-DB7
LCD Driving Voltage	Vlcd	16.7	17.0	17.3	V	Vdd-V0

### 8.2 AC Characteristics (VDD=+5V, VSS=0V, TTa=-20~75° )

Items	Symbol	Min	Max	Unit
C/D set-up time	t <sub>CDS</sub>	100	—	nS
C/D hold time	t <sub>CDH</sub>	10	—	nS
/CE, /RD, /WR pulse width	t <sub>CE</sub> , t <sub>RD</sub> , t <sub>WR</sub>	80	—	nS
Data set-up time	t <sub>DS</sub>	80	—	nS
Data hold time	t <sub>DH</sub>	40	—	nS
Access time	t <sub>ACC</sub>	—	150	nS
Output hold time	t <sub>OH</sub>	10	50	nS