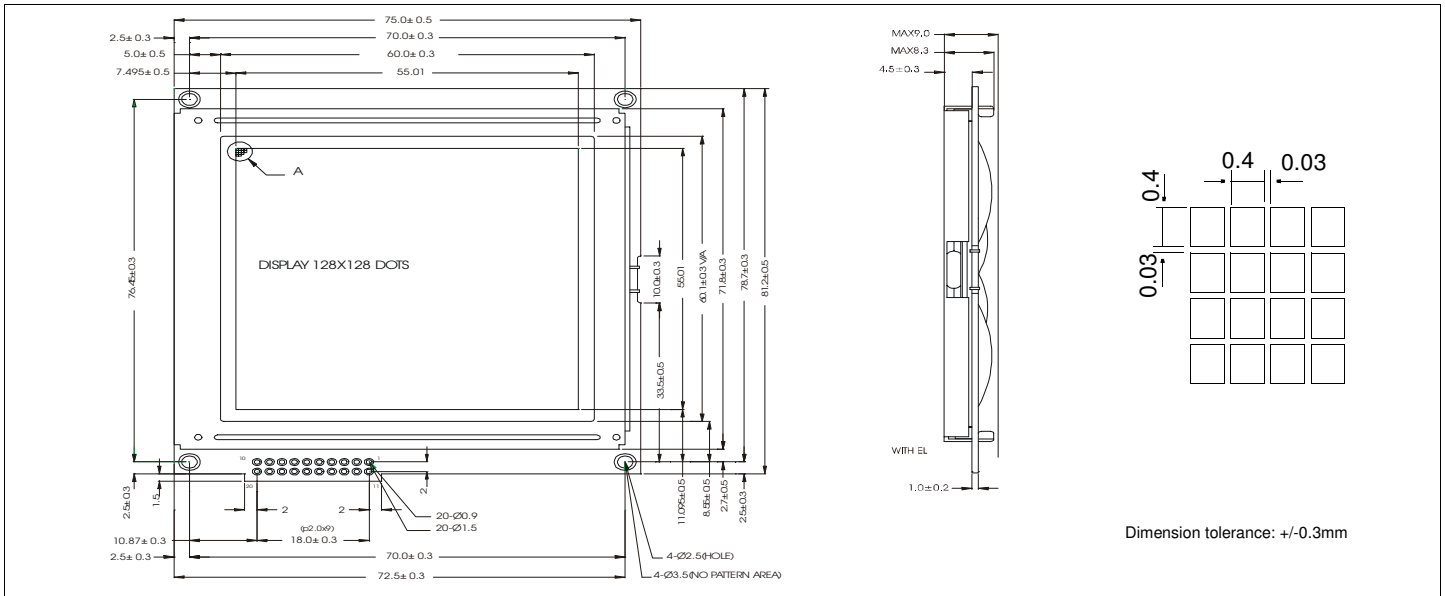


# HDM128GS12-4

## Dimensional Drawing

128 X 128 Dots Graphic



Dimension tolerance: +/-0.3mm

### Features

- Backlight.....EL
- Options.....Gray STN / Yellow STN  
Normal / Extended Temperature  
Bottom / Top Viewing
- Built-in Controller.....Samsung KS018

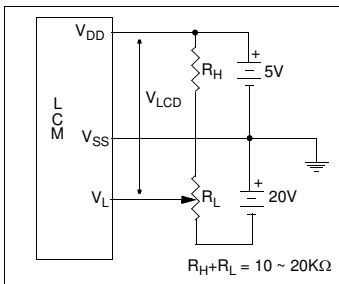
### Physical Data

- Module Size.....75.0W x 82.7H x 9.0T mm
- Viewing Area Size.....62.0W x 62.0H mm
- Dot Pitch.....0.43W x 0.43H mm
- Dot Size.....0.40W x 0.40H mm
- Weight.....60g

### Electrical Characteristics (V<sub>DD</sub>=5.0±0.25V 25°C)

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
OPERATING VOLTAGE	V <sub>DD</sub>	-	4.5	5.0	5.5	V
POWER SUPPLY FOR LCD	V <sub>DD</sub> -V <sub>L</sub>	-	-	17.8	-	V
LOGIC SUPPLY CURRENT	I <sub>DD</sub>	V <sub>DD</sub> = 5.0V	-	2.27	-	mA
LCD SUPPLY CURRENT	I <sub>L</sub>	V <sub>DD</sub> = 5.0V	-	9.8	-	mA
EL INPUT VOLTAGE	V <sub>EL</sub>	-	-	100	150	V <sub>rms</sub>
EL INPUT FREQUENCY	F <sub>EL</sub>	-	-	400	-	Hz
BRIGHTNESS	L	I <sub>F</sub> = 500mA	152	180	-	cd/m <sup>2</sup>
DRIVE METHOD	1/28 Duty					

### Power Supply



### Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	V <sub>DD</sub> -V <sub>SS</sub>	-0.3	7.0	V
POWER SUPPLY FOR LCD	V <sub>L</sub>	-0.3	30.0	V
INPUT VOLTAGE	V <sub>IN</sub>	-0.3	V <sub>DD</sub> + 0.3	V
OPERATING TEMPERATURE	T <sub>OP</sub>	0	50	°C
STORAGE TEMPERATURE	T <sub>STG</sub>	-20	70	°C

### Pin Connections

PIN NO.	SYMBOL	FUNCTION	
1	V <sub>DD</sub>	5V	Power supply for logic
2	V <sub>SS</sub>	0V	Ground
3	V <sub>L</sub>	-	Operating voltage for LC
4	DB0	H/L	Data bus
5	DB1	H/L	
6	DB2	H/L	
7	DB3	H/L	
8	DB4	H/L	
9	DB5	H/L	
10	DB6	H/L	
11	DB7	H/L	
12	CS1	H	Left Half Chip Select
13	CS2	H	Right Half Chip Select
14	RESET	L	Reset
15	R/W	H/L	1= Data read, 0= Data write
16	D/I	H/L	1= Data, 0= Instruction
17	E	H/H->L	Enable Signal
18	V <sub>SS</sub>	0V	Ground
19	EL	-	EL Backlight
20	EL	-	EL Backlight