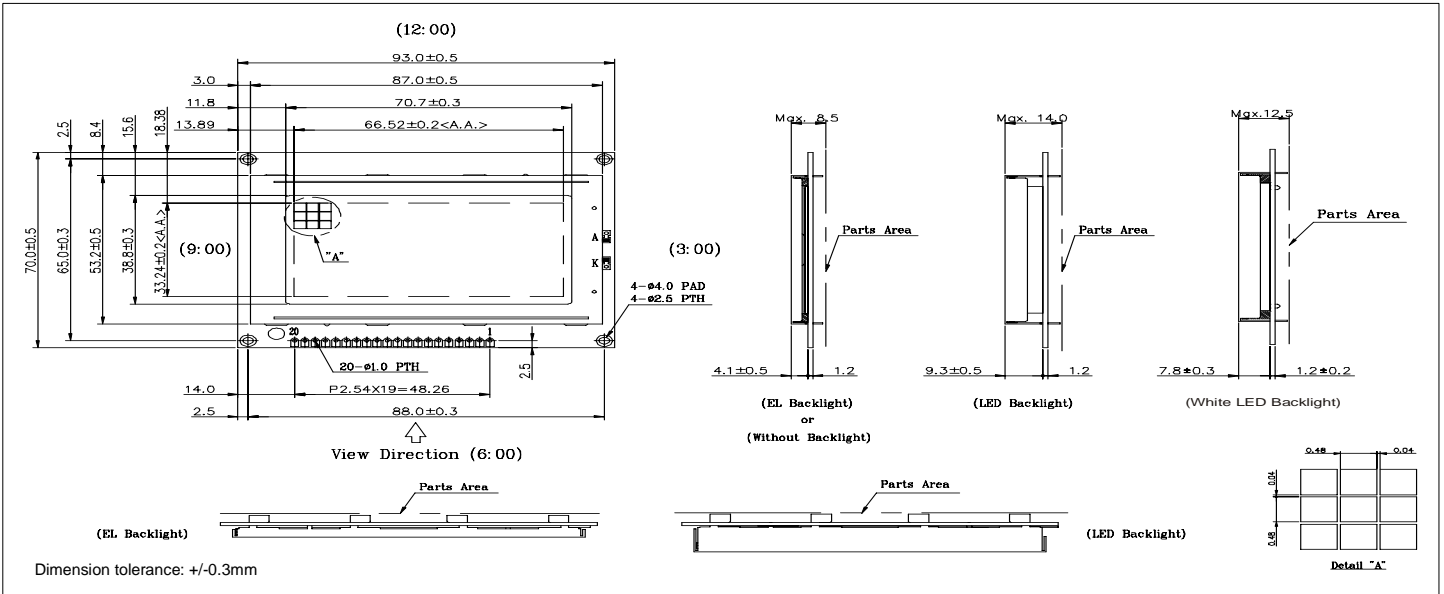


HDM64GS12

Dimensional Drawing

128 X 64 Dots Graphic



Features

Backlight.....(White) LED, EL or NONE optional
Options.....Gray or Yellow STN, Black & White FSTN
Normal/Extended Temperature
Bottom / Top Viewing
Built-in Controller.....Samsung KS108B

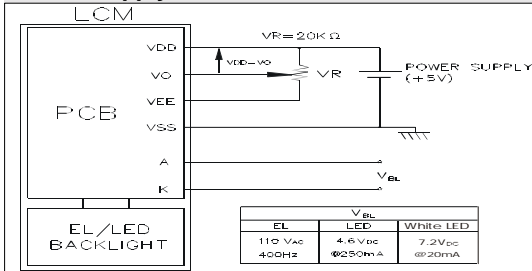
Physical Data

Module Size (LED Backlight).....93.0W x 70.0H x 14.0T mm
(White LED Backlight).....93.0W x 70.0H x 12.5T mm
(None or EL Backlight).....93.0W x 70.0H x 8.5T mm
Viewing Area Size.....70.7W x 38.8H mm
Dot Pitch.....0.52W x 0.52H mm
Dot Size.....0.48W x 0.48H mm
Weight.....54.4g (None), 56.5g (EL), 76.5g (LED)

Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
Supply Voltage	$V_{DD}-V_{SS}$	0	7.0	V
Input Voltage	V_{IN}	-	7.0	V
Operating Temperature	T_{OP}	0	50	°C
Storage Temperature	T_{STG}	-20	70	°C
LED Peak Forward Current (White LED)	I_p		540	mA
			60	mA
EL Applied Voltage	V_L		150	V_{rms}
EL Applied Frequency	F_L		1000	Hz

Power Supply



Pin Connections

PIN NO.	SYMBOL	FUNCTION	
1	V_{SS}	0V	Ground
2	V_{DD}	5V	Power supply for logic
3	V_L	-	Operating voltage for LC
4	D/I	H/L	1=Data, 0=Instruction
5	R/W	H/L	1=Data read, 0=Data write
6	E	H/H->L	Enable
7	DB0	H/L	Data bus
8	DB1	H/L	
9	DB2	H/L	
10	DB3	H/L	
11	DB4	H/L	
12	DB5	H/L	
13	DB6	H/L	
14	DB7	H/L	
15	CS1	H	Left Half Chip Select
16	CS2	H	Right Half Chip Select
17	RS	L	Reset
18	V_{EE}	Output	#
19	K	(-F TYPE)	LED Cathode
	A	(-S TYPE)	LED Anode (White LED, -F TYPE)
20	A	(-F TYPE)	LED Anode
	K	(-S TYPE)	LED Cathode (White LED, -F TYPE)

Has built-in inverter for negative power supply

Electrical Characteristics (VDD=5.0±0.25V 25°C)

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
Input High Voltage	V_{IH}	-	.7 V_{DD}	-	V_{DD}	V
Input Low Voltage	V_{IL}	-	-	-	.3 V_{DD}	V
Power Supply Voltage	$V_{DD}-V_L$	$V_{DD}=5.0V$	13.0 8.9	13.5 9.2	14.0 9.5	V
Power Supply Current	I_{DD}	$V_{DD}=5.0V$	-	1.9	2.9	mA
LED Forward Current (White LED)	I_F	$V_F=4.6V$	-	250	540	mA
		$V_F=7.2V$	-	20	30	mA
EL Current	I_L	-	-	5.0	8.0	mA_{rms}
EL Power Consumption	P_L	-	-	0.55	-	W
DRIVE METHOD			1/64 Duty			