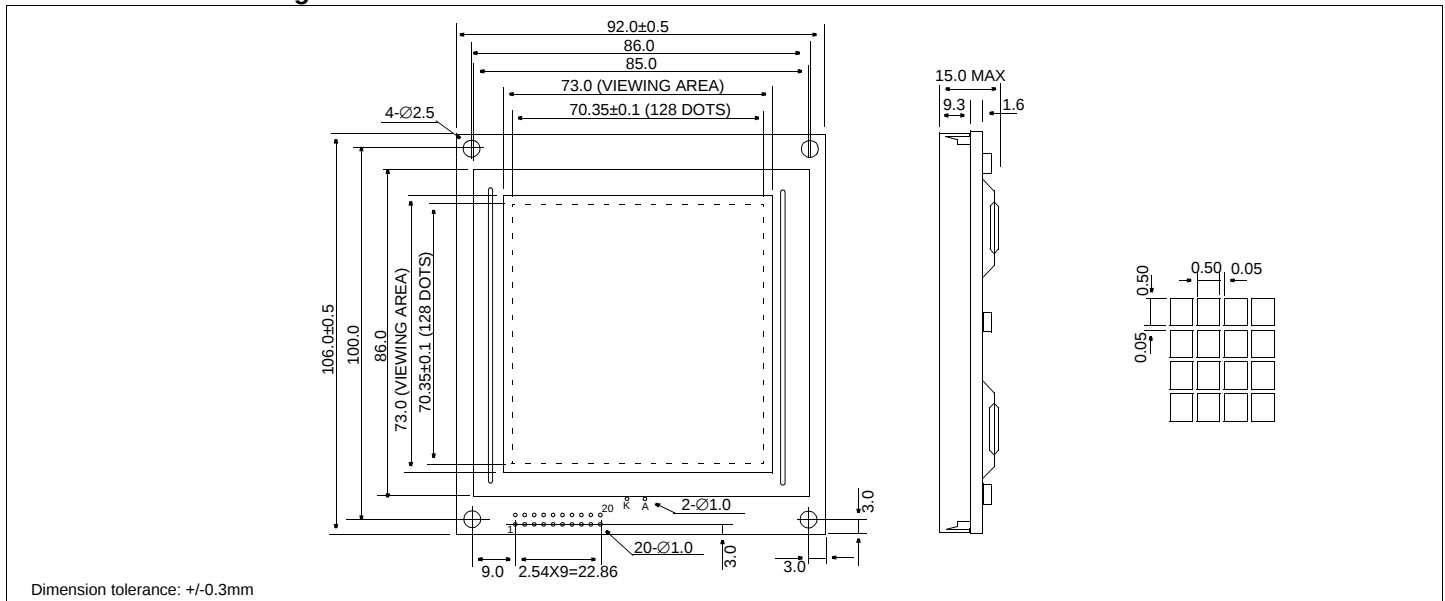


HDM128GS12_-3

Dimensional Drawing

128 X 128 Dots Graphic



Features

Backlight.....EL or LED Optional
Options.....Gray STN / Yellow STN
Normal/Extended Temperature
Bottom / Top Viewing
Built-in Controller.....Toshiba T6963C

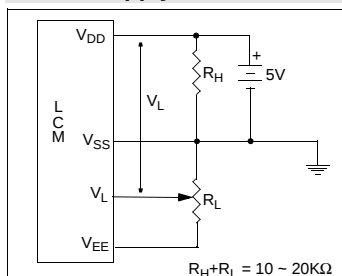
Physical Data

Module Size.....92.0W x 106.0H x 15.0T mm
Viewing Area Size.....73.0W x 73.0H mm
Dot Pitch.....0.55W x 0.55H mm
Dot Size.....0.50W x 0.50H mm
Weight.....100g

Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	$V_{DD}-V_{SS}$	0	7.0	V
POWER SUPPLY FOR LCD	V_L	-	-30.0	V
INPUT VOLTAGE	V_{IH}	0	7.0	V
OPERATING TEMPERATURE	T_{OP}	0	50	°C
STORAGE TEMPERATURE	T_{STG}	-20	70	°C

Power Supply



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

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
OPERATING VOLTAGE	V_{DD}	-	4.5	5.0	5.5	V
POWER SUPPLY FOR LCD	$V_{DD}-V_L$	-	17.2	18.2	19.2	V
INPUT HIGH VOLTAGE	V_{IH}	-	V_{DD} -2.2	-	V_{DD}	V
INPUT LOW VOLTAGE	V_{IL}	-	0	-	0.8	V
OUTPUT HIGH VOLTAGE	V_{OH}	$I_{OH} = 0.2\text{mA}$	V_{DD} -0.4	-	V_{DD}	V
OUTPUT LOW VOLTAGE	V_{OL}	$I_{OL} = 1.2\text{mA}$	0	-	0.4	V
POWER SUPPLY CURRENT	I_{DD}	$V_{DD} = 5.0\text{V}$	-	22.0	30.0	mA
LED FORWARD VOLTAGE	V_F	$I_F = 100\text{mA}$	3.8	4.2	4.6	V
BRIGHTNESS	L	$I_F = 100\text{mA}$	50	60	-	NIT
DRIVE METHOD	1/128 Duty					

Pin Connections

PIN NO.	SYMBOL	FUNCTION	
1	V_L	-	Operating voltage for LC
2	V_{SS}	0V	Ground
3	V_{DD}	5V	Power supply for logic
4	V_{EE}	#	Output
5	WR	L	Data write
6	RD	L	Data read
7	CE	L	Chip enable
8	C/D	H/L	H= Command, L= Data
9	RESET	L	Reset
10	DB0	H/L	Data bus
11	DB1	H/L	
12	DB2	H/L	
13	DB3	H/L	
14	DB4	H/L	
15	DB5	H/L	
16	DB6	H/L	
17	DB7	H/L	
18	FS	H/L	Font select
19	A	Anode	LED Back light power
20	K	Cathode	

Has built-in inverter for negative power supply and built-in temperature compensation