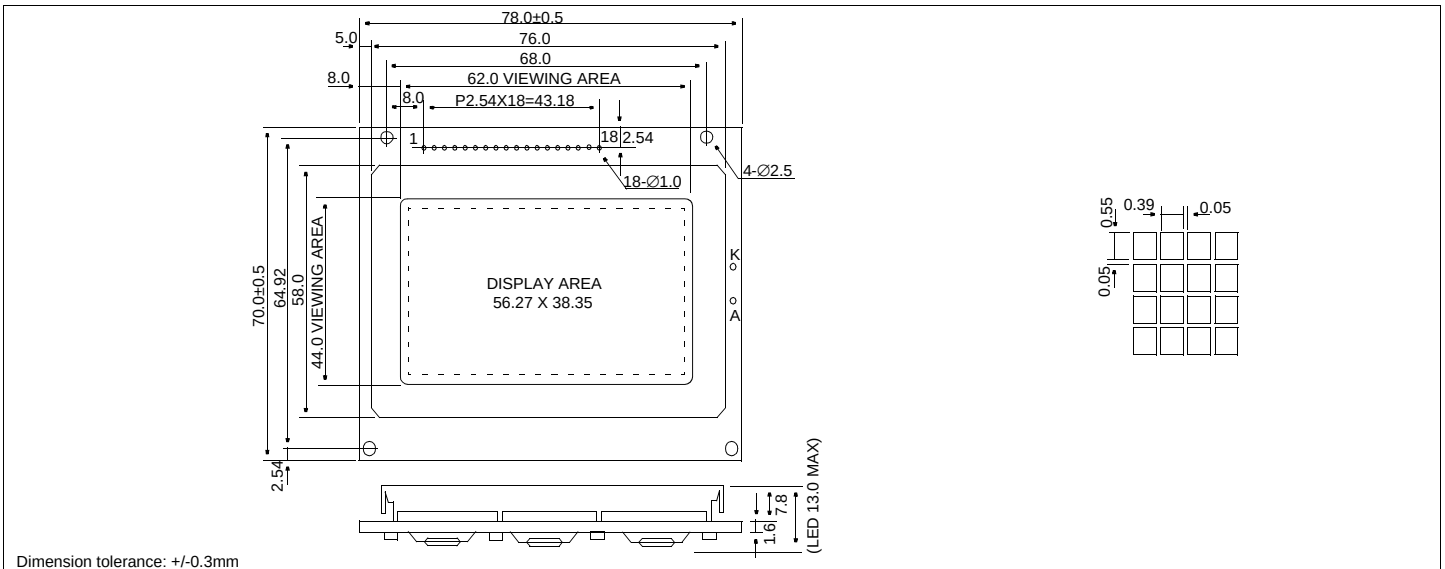


HDM64GS12_-1

Dimensional Drawing

128 X 64 Dots Graphic, Small Size



Features

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

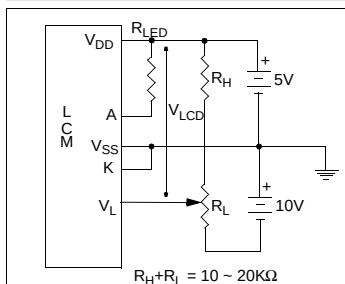
Physical Data

Module Size (LED Backlight).....78.0W x 70.0H x 13.0T mm
(None or EL Backlight).....78.0W x 70.0H x 10.0T mm
Viewing Area Size.....62.0W x 44.0H mm
Dot Pitch.....0.44W x 0.60H mm
Dot Size.....0.39W x 0.55H mm
Weight.....71g (LED)

Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	$V_{DD}-V_{SS}$	0	7.0	V
SUPPLY VOLTAGE FOR LCD	$V_{DD}-V_L$	0	18.0	V
INPUT VOLTAGE	V_{IN}	-	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
INPUT HIGH VOLTAGE	V_{IH}	-	0.7 V_{DD}	-	-	V
INPUT LOW VOLTAGE	V_{IL}	-	0	-	0.3 V_{DD}	V
OUTPUT HIGH VOLTAGE	V_{OH}	$I_{OH}=0.2\text{mA}$	2.4	-	-	V
OUTPUT LOW VOLTAGE	V_{OL}	$I_{OL}=1.6\text{mA}$	-	-	0.4	V
POWER SUPPLY CURRENT	I_{DD}	$V_{DD}=5.0\text{V}$	-	-	15.0	mA
POWER SUPPLY FOR LCD	$V_{DD}-V_L$	$T_A=25^\circ\text{C}$	9.8	10.3	10.8	V
LED FORWARD VOLTAGE	V_F	$I_F=210\text{mA}$	-	4.2	-	V
BRIGHTNESS	L	$I_F=210\text{mA}$	-	TBA	-	NIT
DRIVE METHOD	1/64 Duty					

Pin Connections

PIN NO.	SYMBOL	LEVEL	FUNCTION
1	FG	0V	FRAME GROUND
2	V_{SS}	0V	Ground
3	V_{DD}	5V	Power supply for logic
4	V_L	-	Operating voltage for LC
5	WR	L	DATA WRITE
6	RD	L	DATA READ
7	CE	L	CHIP ENABLE
8	C/D	H/L	WR=0, C/D=1: COMMAND WRITE WR=0, C/D=0: DATA WRITE RD=0, C/D=1: STATUS READ RD=0, C/D=0: DATA READ
9	RST	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	FS=1: 6X8 PIXELS/CHARACTER FS=0: 8X8 PIXELS/CHARACTER