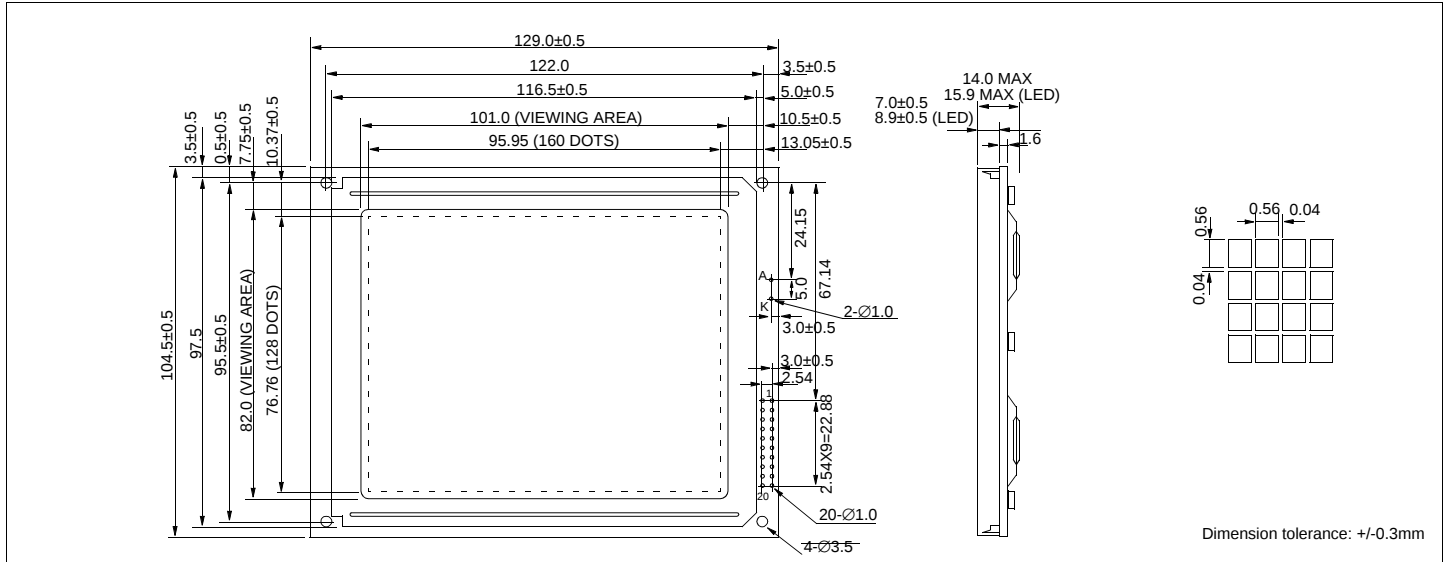


HDM 128GD16

160 X 128 Dots Graphic

Dimensional Drawing



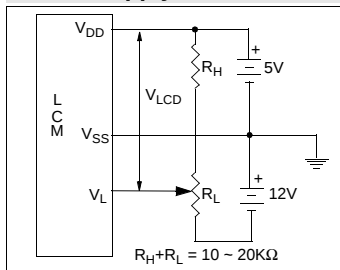
Features

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.....129.0W x 104.5H x 15.9T mm
Viewing Area Size.....101.0W x 82.0H mm
Dot Pitch.....0.60W x 0.60H mm
Dot Size.....0.56W x 0.56H mm
Weight.....150g

Power Supply



Electrical Characteristics (V_{DD}=5.0±0.25V 25°C)

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
OPERATING VOLTAGE	V _{DD}	-	4.5	5.0	5.5	V
LCD VOLTAGE	V _{EE}	-	-	-15	-	V
POWER SUPPLY FOR LCD	V _{DD} -V _L	-	-	13.0	-	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} =0.2mA	V _{DD} -0.4	-	V _{DD}	V
OUTPUT LOW VOLTAGE	V _{OL}	I _{OL} =1.2mA	0	-	0.4	V
POWER SUPPLY CURRENT	I _{DD}	V _{DD} =5.0V	-	13.0	20.0	mA
LED FORWARD VOLTAGE	V _F	I _F =250mA	3.9	4.2	4.5	V
BRIGHTNESS	L	I _F =250mA	-	3.0	-	NIT
DRIVE METHOD	1/64 Duty					

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 _{IN}	0	7.0	V
OPERATING TEMPERATURE	T _{OP}	0	50	°C
STORAGE TEMPERATURE	T _{STG}	-20	70	°C

Pin Connections

PIN NO.	SYMBOL	FUNCTION	
1	FG	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	CD	H/L	H= Command, L=Data
9	N/C	No connection	
10	RESET	I	Reset
11	DB0	H/L	Data bus
12	DB1	H/L	
13	DB2	H/L	
14	DB3	H/L	
15	DB4	H/L	
16	DB5	H/L	
17	DB6	H/L	
18	DB7	H/L	
19	FS	H/L	Font select
20	N/C	No connection	