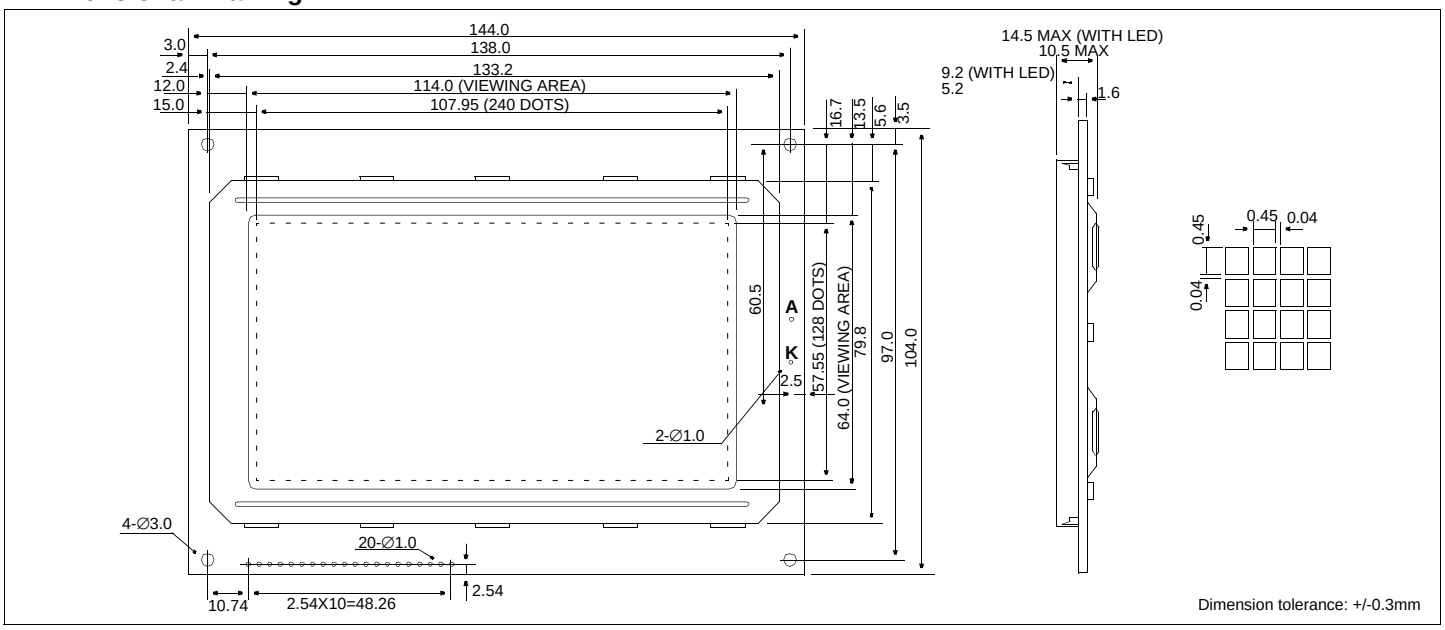
HDM 128GS24

240 X 128 Dots Graphic

Dimensional Drawing



Features

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

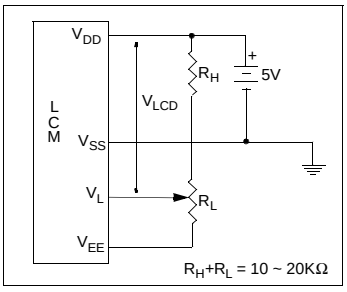
Physical Data

Module Size.....144.0W x 104.0H x 12.5T mm
Viewing Area Size.....114.0W x 64.0H mm
Dot Pitch.....0.49W x 0.49H mm
Dot Size.....0.45W x 0.45H mm
Weight.....160g

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
LED FORWARD CURRENT	I_F		2250	mA
OPERATING TEMPERATURE	T_{OP}	0	50	°C
STORAGE TEMPERATURE	T_{STG}	-20	60	°C

Power Supply



Pin Connections

PIN NO.	SYMBOL	FUNCTION	
1	V_{SS}	0V	Ground
2	V_{DD}	5V	Power supply for logic
3	V_L	-12.5V	Operating voltage for LC
4	C/D	H/L	1=Command, 0=Data
5	RD	L	Data read
6	WR	L	Data write
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	CE	L	Chip enable
16	RESET	L	Reset
17	V_{EE}	OUTPUT	#
18	MD2	H/L	Column select 0=40, 1=32
19	FS1	H/L	Text cell size 0=8x8, 1=6x8
20	N/C	-	No connection

Has built-in inverter for negative 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	-	-	17.5	-	V
INPUT HIGH VOLTAGE	V_{IH}	-	VDD -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
DRIVE METHOD	1/128 Duty					