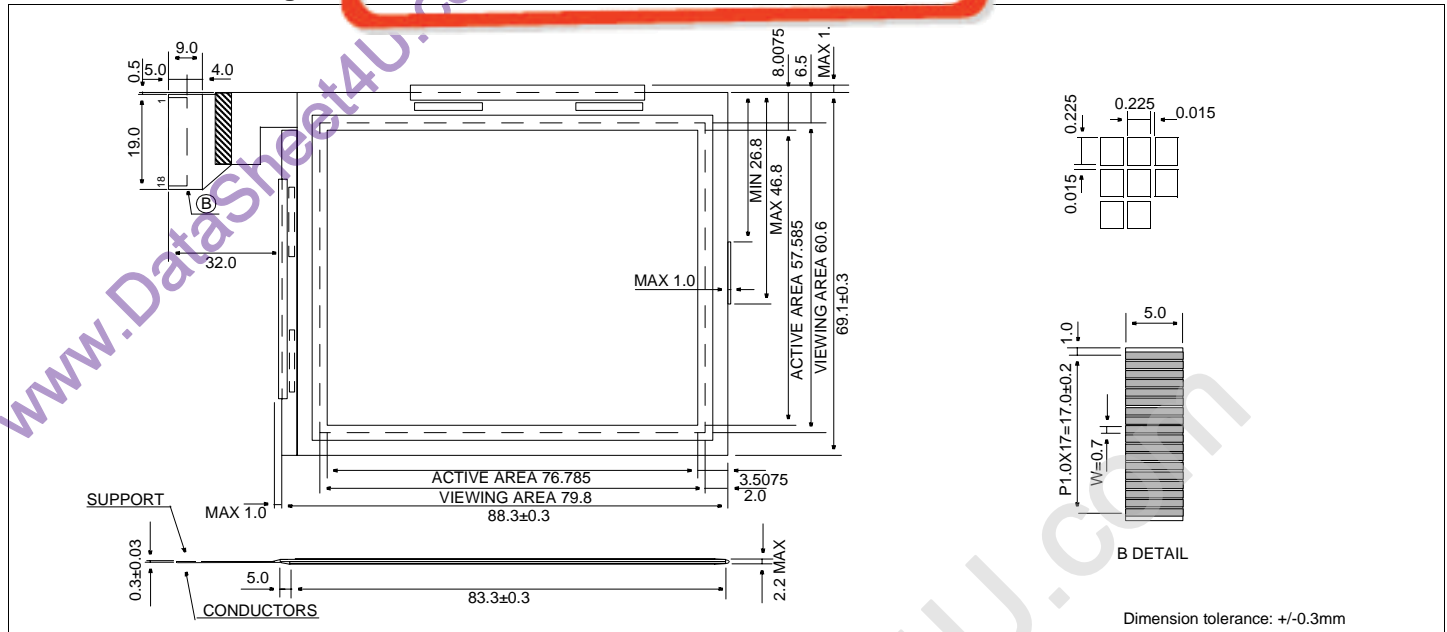


HDG320240

Dimensional Drawing



320 X 240 Dots Graphics



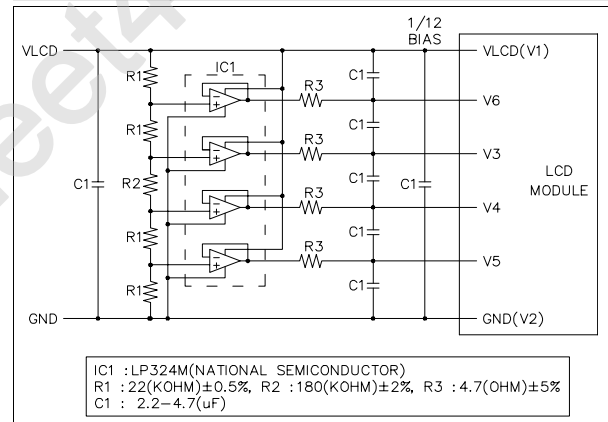
Features

Backlight.....NONE
 Options.....Gray STN / Yellow STN / FSTN
 Normal/Extended Temperature
 Bottom / Top Viewing
 Built-in Controller.....None

Physical Data

Module Size.....88.3W x 69.1H x 2.2T mm
 Viewing Area Size.....79.8W x 60.6H mm
 Dot Pitch.....0.24W x 0.24H mm
 Dot Size.....0.225W x 0.225H mm
 Weight.....24.5g

Power Supply



Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	V _{DD} -V _{SS}	-0.3	7.0	V
SUPPLY VOLTAGE FOR LCD	V _L -V _{SS}	-0.3	36.0	V
INPUT VOLTAGE	V _{IN}	-	7.0	V
OPERATING TEMPERATURE	T _{OP}	-20	70	°C
STORAGE TEMPERATURE	T _{STG}	-30	80	°C

Electrical Characteristics (V_{DD}=3.0±0.25V 25°C)

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
INPUT HIGH VOLTAGE	V _{IH}	-	0.8 V _{DD}	-	V _{DD}	V
INPUT LOW VOLTAGE	V _{IL}	-	0	-	0.2 V _{DD}	V
OUTPUT HIGH VOLTAGE	V _{OH}	I _{OH} =0.4mA	V _{DD} -0.4	-	-	V
OUTPUT LOW VOLTAGE	V _{OL}	I _{OL} =0.4mA	-	-	0.4	V
SUPPLY VOLTAGE	V _{DD}	-	2.75	3.0	3.25	V
	V _L	-	15.2	15.4	15.6	V
POWER SUPPLY CURRENT	I _{DD}	V _{DD} =3.0V	-	0.1	0.3	mA
	I _L	V _{EE} =21.5V	-	0.55	1.0	mA
FRAME FREQUENCY	f _{FP}	-	65	72	80	Hz
DRIVE METHOD	1/240 DUTY					

Pin Connections

PIN NO.	SYMBOL	FUNCTION
1	V _L	Operating voltage for LC
2	V ₆	Bias voltage
3	V ₃	
4	V ₄	
5	V ₅	
6	V _{SS}	Ground
7	V _{SS}	Ground
8	V _{DD}	Logic Power Supply
9	FLM	Frame Pulse
10	CL2	Data Shift
11	M	Liquid Crystal AC drive signal
12	CL1	Data latch signal
13	INHx	1=Display ON, 0=Display OFF
14	V _{SS}	Ground
15	DB3	Data bus
16	DB2	
17	DB1	
18	DB0	H/L