



GM322420

320 x 240 dots

FSTN / STN Reflective / LED Backlight

DIMENSIONAL DATA

Item	Measurement (W) x (H) x (T)	Unit
Module Dimension	139 x 110.2 x 13.2 Max.(LED B/L)	mm
Viewing Area	103 x 79	mm
Dot Pitch	0.30 x 0.30	mm
Dot Size	0.29 x 0.29	mm
Weight	170	g
Controller/Driver	KS0086	

ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Condition	Min.	Max.	Unit
Supply Voltage (Logic)	$V_{DD} - V_{SS}$	0		7.0	V
Supply Voltage(LCD)	$V_{DD} - V_{EE}$	0		30	V
Input Voltage	V_i	$T_a = 25\text{ C}$	V_{SS}	V_{DD}	V
Operating Temp.	opr		0	50	C
Storage Temp.	Tstg		-20	60	C

ELECTRICAL CHARACTERISTIC

Item	Symbol	Condition	Value			Unit
			Min.	Typ.	Max.	
Supply Voltage (Logic)	$V_{DD} - V_{SS}$	--	4.5	5.0	5.5	V
Supply Current	I_{DD}	$V_{DD} - V_{SS} = 5V$	--	35	65	mA
	I_{EE}		--	--	--	mA
Input Voltage "H" Level	V_{IH}		$0.8 * V_{DD}$	--	V_{DD}	V
Input Voltage "L" Level	V_{IL}		0	--	$0.2 * V_{DD}$	V
Frame Frequency	F_f	$T_a = 25\text{ C}$	--	70	--	Hz
Supply Voltage for LCD Drive(1/240 duty)	$V_{DD} - V_o$	$T_a = 0\text{ C}$	20.5	21.2	21.9	V
		$T_a = 25\text{ C}$	20	20.7	21.4	
		$T_a = 50\text{ C}$	19.5	20.2	20.9	
Viewing Angle	1 - 2	$T_a = 25\text{ C}$	60	-	80	Deg.
	1. 2	CR 3	30	45	--	
LED Forward Voltage		$I = 160\text{mA}$		3.5	3.7	V

PIN ASSIGNMENT

Pin	Symbol	Level	Function
1	FLM	--	First Line Mark
2	LP	--	Data Latch Pulse
3	CP	--	Data Shift Pulse
4	NC	--	No Connection
5	VO	--	Input Voltage for LCD Contrast Adjustment
6	VDD	--	Power Supply for Logic
7	VSS	--	Ground (0V)
8	VEE	--	Negative Voltage Output
9	DB0	H/L	Data Bus Line
10	DB1	H/L	
11	DB2	H/L	
12	DB3	H/L	
13	/DSP OFF	--	Display ON/OFF Control ,H=ON,L=OFF
14	NC	--	NO Connection
15	LEDA	+	LED Anode. Power Supply +
16	LEDK	-	LED Anode. Power Supply -

OUTLINE DIMENSION

