



**GM246401**

**240 x 64 dots**

STN

Reflective / LED Backlight / EL Backlight

**DIMENSIONAL DATA**

Item	Measurement (W) x (H) x (T)	Unit
Module Dimension	180 x 65 x 10.0 Max. (Reflective)	mm
Viewing Area	135 x 40	mm
Dot Pitch	0.53 x 0.53	mm
Dot Size	0.49 x 0.49	mm
Weight	200	g
Controller/Driver	T6963C	

**ABSOLUTE MAXIMUM RATINGS**

Item	Symbol	Condition	Min.	Max.	Unit
Supply Voltage (Logic)	$V_{DD} - V_{SS}$	0		7.0	V
Supply Voltage(LCD)	$V_{DD} - V_O$	0		20	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	70	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 Voltage (LCD)	$V_{DD} - V_O$	--	--	11.5	--	V
Supply Current	$I_{DD}$	$V_{DD} - V_{SS} = 5V$	--	1.5	--	mA
	$I_O$	$V_{DD} - V_O = 12V$	--	5	--	mA
Input Voltage "H" Level	$V_{IH}$	High Level	$V_{DD} \cdot 2.2$	--	$V_{DD}$	V
Input Voltage "L" Level	$V_{IL}$	Low Level	0	--	0.8	V
Frame Frequency	$F_f$	$T_a = 25\text{ C}$	--	64	--	Hz
Viewing Angle	1 - 2	$T_a = 25\text{ C}$	--	30	--	Deg.
	1. 2	CR 1.5	--	3.0	--	
LED Forward Voltage		$I = 450\text{mA}$	--	4.2	4.6	V

**PIN ASSIGNMENT**

Pin	Symbol	Level	Function
1	FGND		Frame Ground (Connect to Bezel)
2	$V_{SS}$	--	Ground (0V)
3	$V_{DD}$	--	Power Supply (+5V)
4	$V_O$	--	Power Supply Input for LCD
5	/WR		Data Write
6	/RD		Data Read
7	/CE		Chip Enable
8	C/D		Code/Data
9	NC	--	No Connection
10	/RST	L	Reset, Active LOW
11	DB0	H/L	Data Bus Line
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	--	Font Select, L=8 x 8, H=6 x 8
20	NC	--	No Connection

**OUTLINE DIMENSION**

