

**Features:**

- Module: 320 x 64 Dots with Backlight (LED Matrix, Green)
- Display Mode: Text, Graphic, Both Text and Graphic
- Glass Type: STN
- Viewing Direction: 6 O'clock (Bottom View)
- Polarizer Mode: Positive Transflective
- Driving Method: 1/64 Duty, 1/9 Bias
- Operating Voltage: 13.6V
- Power Supply: +5V Single Power Supply
- Internal ROM: 128 Words Character Generator ROM
- External Display Memory: 32 KB max
- LSI Controller: Toshiba LCD Driver LSI


**Absolute Maximum Ratings**

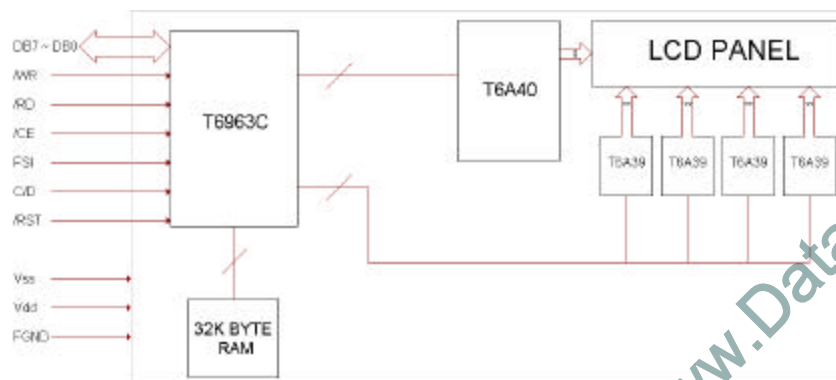
Item	Symbol	Test Condition	Rating	Unit
Power Supply for Logic	Vdd	Ta = 25°C	-0.3 ~ 7.0	V
Power Supply for LCD Drive	Vdd - V0	Ta = 25°C	0 ~ 15	V
Input Voltage	Vin	Ta = 25°C	-0.3 ~ Vdd + 0.3	V
Operating Temperature	Topr	--	0 ~ +50	°C
Storage Temperature	Tstg	--	-20 ~ +70	°C

**Electrical Characteristics**

Item	Symbol	Test Condition	Minimum	Typical	Maximum	Unit
Supply Voltage for Logic	Vdd - Vss	--	4.5	5	5.5	V
Supply Voltage for LCD	Vdd - Vss	--	--	--	15	V
Supply Current for Logic	Idd	--	--	13.8	23	mA
Supply Current for LCD	Iee	--	--	1.9	3.5	mA
Operating Voltage for LCD (Recommended)	Vdd - Vee	0°C	--	14.2	14.4	V
		25°C	--	13.8	--	V
		40°C	12.8	13	--	V
Input Voltage "High" Level	Vih	High Level	0.8 Vdd	--	Vdd	V
Input Voltage "Low" Level	Vil	Low Level	0	--	0.2 Vdd	V

**Mechanical Parameters**

Item	Description	Unit
PCB Dimension	200 x 45.2 x 1.6	mm3
LCD Dimension	174.8 x 43.4 x 2.8	mm3
View Dimension	167.3 x 34.0	mm2

**System Block Diagram**


**Pin Assignment**

Number	Symbol	Level	Function Description
1	FGND	0V	Frame Ground
2	VSS	0V	Ground
3	VDD	5.0V	Supply Voltage for Logic and LCD+
4	NC	--	No Connection
5	WR	L	Write Signal
6	RD	L	Read Signal
7	CE	L	Chip Enable Signal
8	C/D	H/L	H: Instruction Data; L: Display Data
9	NC	--	No Connection
10	RST	L	Reset Signal
11	D0	H/L	Data Bit 0
12	D1	H/L	Data Bit 1
13	D2	H/L	Data Bit 2
14	D3	H/L	Data Bit 3
15	D4	H/L	Data Bit 4
16	D5	H/L	Data Bit 5
17	D6	H/L	Data Bit 6
18	D7	H/L	Data Bit 7
19	FS1	H/L	Font Selection Signal (H: 6 x 8 Dots; L: 8 x 8 Dots)
20	NC	--	No Connection
21	LED+	5.0V	Supply Voltage for LED+
22	LED-	0	Supply Voltage for LED-

**Assembly Diagram**
