



### Feature

1. Built-in controller TOSHIBA (T6963C)
2. 1/128 duty cycle.
3. Built-in Negative voltage (option)

### Pin Assignment

Pin	Symbol	Function
1	FGND	Frame GND (connected to bezel)
2	Vss	GND
3	Vdd	Power supply for logic circuit
4	Vo	Contrast Adjustment
5	WR	Data write
6	RD	Data read
7	CE	Chip enable
8	C/D	Code data
9	NC/Vee	No connection/Negative Voltage output
10	RST	Controller reset
11-18	DB0-DB7	Data bus line
19	FS	Font selection
20	RV	Reserve

### Mechanical Data

Item	Standard Value	Unit
Module Dimension	170.0 x 93.0	mm
Viewing Area	132.0 x 76.0	mm
Dot Size	0.47 x 0.47	mm
Dot Pitch	0.5 x 0.5	mm

### Absolute Maximum Rating

Item	Symbol	Standard Value			Unit
		min.	typ.	max.	
Power Supply	VDD-VSS	4.75	5.0	5.25	V
Input Voltage	VI	-0.3	--	VDD	V

Note: VSS=0 Volt, VDD=5.0 Volt.

### Electronical Characteristics

Item	Symbol	Condition	Standard Value			Unit
			min.	typ.	max.	
Input Voltage	VDD	L level	0.7V <sub>DD</sub>	--	VDD	V
	VIO	H level	--	--	0.3V <sub>DD</sub>	V
Supply Current	IDD	VDD=+5V	--	23	--	mA
Recommended LC Driving Voltage for Normal Temp. Version module	VDD-V0	0°C	19.1	19.5	20.1	V
		25°C	18.1	18.5	19.1	
		50°C	17.1	17.5	18.1	
CCFL	VF	25°C	--	325	580	mA
	IF	25°C	--	--	5.0	
EL Power Supply Current	IEL	Vel=110VAC;400Hz	--	--	5.0	mA