



Feature

1. Built-in controller TOSHIBA- (T6963C)
2. +5V power supply
3. 1/64 duty cycle
4. N.V. Built-in

Pin Assignment

Pin	Symbol	Function
1	Vss	Power Supply (0V)
2	Vdd	Power supply (+5V)
3	Vo	Power supply for LCD driver
4	C/D	Command/data read/write
5	\overline{RD}	Data read
6	\overline{WR}	Data write
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	\overline{CE}	Chip enable
16	\overline{RST}	Contrast Reset
17	Vee	Negative Voltage
18	Md2	Pins for selection of number of columns
19	FSI	Font select
20	HLT	Check operating stop signal

Mechanical Data

Item	Standard Value	Unit
Module Dimension	87.0 x 70.0	mm
Viewing Area	72.0 x 40.0	mm
Mounting hole	82.0 x 65.0	mm
Dot Pitch	0.52 x 0.52	mm

Absolute Maximum Rating

Item	Symbol	Standard Value			Unit
		min.	typ.	max.	
Power Supply	VDD-VSS	4.5	5.0	5.5	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 _{DD}	--	V _{DD}	V
	VIO	H level	0	--	0.3V _{DD}	V
Supply Current	IDD	VDD=+5V	--	9.7	--	mA
Recommended LC Driving Voltage for Normal Temp. Version module	VDD-VO	-20°C	9.6	10.1	10.6	V
		0°C	9.4	9.9	1.04	
		25°C	9.4	9.6	10.4	
		50°C	8.7	9.2	9.7	
		70°C	8.5	9.0	9.5	
LED Forward Voltage	V _F	25°C	--	4.2	--	V
LED Forward Current	IF	25°C	--	480	--	mA
EL Power Supply Current	IEL	Vel=110VAC;400Hz	--	--	5.0	mA