



### Feature

1. Built-in controller Toshiba (T6963C)
2. +5V power supply
3. 1/64 duty cycle
4. Negative Voltage built-in

### Pin Assignment

Pin#	Symbol	Function
1	FG/Vee	Frame Ground/ N/V
2	Vss	Power supply (0V)
3	Vdd	Power supply (+5V)
4	Vo	Power supply for LCD driver
5	$\overline{WR}$	Data write
6	$\overline{RD}$	Data read
7	$\overline{CE}$	Chip enable
8	$\overline{CD}$	Command/data read/write
9	$\overline{RST}$	Controoler reset
10-17	DB0-DB7	Enable signal
18	FS	Font select
19	K	Power supply for LED (0V)
20	A	Power supply for LED (+4.2V)RA=0Ω

### Mechanical Data

Item	Standard Value	Unit
Module Dimension	78.0 x 70.0	mm
Viewing Area	62.0 x 44.0	mm
Dot Size	0.42 x 0.58	mm
Dot Pitch	0.44 x 0.6	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 <sub>DD</sub>	--	VDD	V		
	VIO	H level	0	--	0.3V <sub>DD</sub>	V		
Supply Current	IDD	VDD=+5V	--	11.2	11.8	mA		
Recommended LC Driving Voltage for Normal Temp. Version module	VDD-VO	0°C	9.4	9.9	10.4	V		
		25°C	9.4	9.6	10.4			
		50°C	8.7	9.2	9.7			
LED Forward Voltage	VF	25°C	--	4.2	4.6	V		
LED Forward Current	IF	25°C	Array	High	--	480	960	mA
				Low	--	180	280	
EL Power Supply Current	IEL	Vel=110VAC;400Hz	--	--	5.0	mA		