

### ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Min.	Max.	Unit
Supply Voltage(Logic)	V <sub>DD</sub> - V <sub>SS</sub>	-0.3	5.5	V
Supply Voltage(LCD)	V <sub>SS</sub> - V <sub>O</sub>	-0.3	7.0	V
Input Voltage	V <sub>I</sub>	-0.3	V <sub>DD</sub> + 0.3	V
Operating Temp.	T <sub>opr</sub>	-20	70	°C
Storage Temp.	T <sub>stg</sub>	-30	80	°C

### MECHANICAL DATA

Item	Nominal Dimensions	Unit
Module Size ( W x H x T )	180.0 x 65.0 x 12.5	mm
Viewing Area ( W x H )	132.0 x 39.0	mm
Dot Pitch ( W x H )	0.50 x 0.54	mm
Dot Size ( W x H )	0.46 x 0.50	mm
Weight	Approx. 140	g

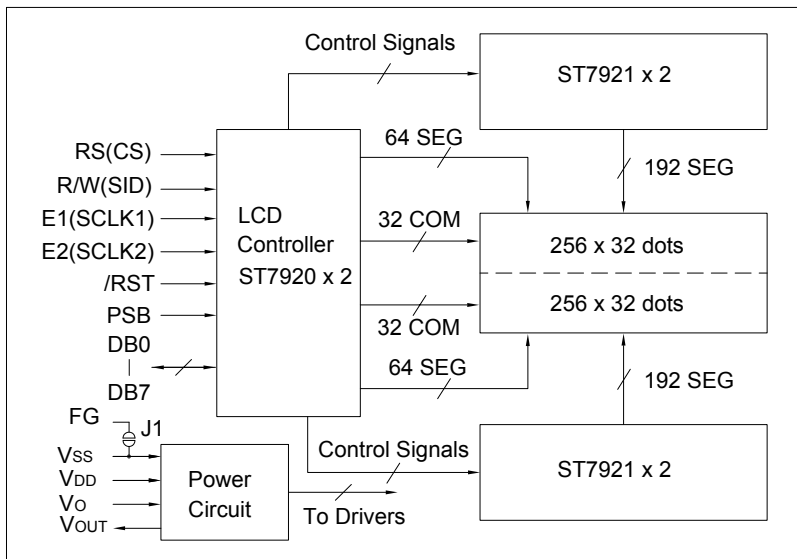
### ELECTRICAL CHARACTERISTICS ( V<sub>DD</sub>=5V±0.25V )

Item	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input High Voltage	V <sub>IH</sub>	--	0.7V <sub>DD</sub>	--	V <sub>DD</sub>	V
Input Low Voltage	V <sub>IL</sub>	--	-0.3	--	0.6	V
Output High Voltage	V <sub>OH</sub>	--	0.8V <sub>DD</sub>	--	V <sub>DD</sub>	V
Output Low Voltage	V <sub>OL</sub>	--	0	--	0.4	V
Supply Current	I <sub>DD</sub>	V <sub>DD</sub> = 5.0V	--	10.0	15.0	mA
LCD Driving Voltage	V <sub>SS</sub> - V <sub>O</sub>	T <sub>a</sub> =25°C	--	6.5	--	V

### PIN CONNECTIONS

Pin	Symbol	Level	Function
1	FG	--	Frame ground
2	V <sub>SS</sub>	0V	GND
3	V <sub>DD</sub>	+5V	Power supply for logic
4	V <sub>O</sub>	--	Operating volatage for LCD
5	R/W	H/L	H : Read L : Write
6	E1	H,H>L	Enable signal 1
7	E2	H,H>L	Enable signal 2
8	RS	H/L	H : Data L : Instruction code
9	PSB	H/L	H: Parallel mode L: Serial mode
10	/RST	L	Reset signal. Active "L".
11	DB0	H/L	Data bus
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	NC	--	No connection
20	V <sub>OUT</sub>	+8.5V	Ouput voltage for LCD driving

### BLOCK DIAGRAM



### LED BACKLIGHT SPECIFICATIONS (T<sub>a</sub>=25°C)

Item	Symbol	Typ.	Max.	Unit
Forward Voltage	V <sub>f</sub>	3.1	3.3	V
Forward Current	I <sub>f</sub>	90	--	mA
LED Color		White		