



### 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 voltage for LCD
5	V <sub>OUT</sub>	-	Negative voltage output
6	/WR	L	Write signal
7	/RD	L	Read signal
8	/CE	L	Chip enable signal
9	C/D	H/L	“L” Data, “H” Instruction code
10	/HALT	H/L	“H”: Normal, “L”: Stop osc clock
11	/REST	L	Reset signal ,active “L”
12   19	DB0   DB7	H/L	Data bus line
20	NC	-	No connection
21	LEDA	+5V	Power supply for LED
22	LEDK	0V	backlight

### NOTES:

- Built-in T6963C controller
- Temperature compensation optional
- Compatible with. VARITRONIX

MGLS160128

### MECHANICAL DATA

Item	Nominal Dimensions	Unit
Module Size(W x H x T)	129.0X102.0X16.5	mm
Viewing Area (W x H)	101.0X82.0	mm
Dot Pitch (W x H)	0.58X0.58	mm
Dot Size (W x H)	0.54X0.54	mm

### ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Min.	Max.	Unit
Supply Voltage (Logic)	V <sub>DD</sub> -V <sub>SS</sub>	-0.3	7.0	V
Supply Voltage (LCD)	V <sub>DD</sub> -V <sub>O</sub>	-0.3	17.5	V
Input Voltage	V <sub>I</sub>	-0.3	V <sub>DD</sub> +0.3	V
Operating Temp.	T <sub>OPR</sub>	-20	70	
Storage Temp.	T <sub>STG</sub>	-30	80	

### ELECTRICAL CHARACTERISTICS ( V<sub>DD</sub>=5.0V, Ta=25 )

Item	Symbol	Min.	Typ.	Max.	Unit
Input High Voltage	V <sub>IH</sub>	V <sub>DD</sub> -2.2	-	V <sub>DD</sub>	V
Input Low Voltage	V <sub>IL</sub>	0	-	0.8	V
Output High Voltage	V <sub>OH</sub>	V <sub>DD</sub> -0.3	-	V <sub>DD</sub>	V
Output Low Voltage	V <sub>OL</sub>	0	-	0.3	V
Supply Current	I <sub>DD</sub>	-	15	18	mA
LCD Driving Voltage	V <sub>DD</sub> -V <sub>O</sub>	-	15.5	-	V

### LED BACKLIGHT SPECIFICATIONS ( Ta=25 )

Item	Forward Voltage	Forward Current
YELLOW-GREEN	4.1V	770mA
White	3.1V	150mA