

2. RECORD OF REVISION

Rev	Date	Item	Page	Comment
B	JUL/15/99	5	5	1. Change: Input Voltage V_{IH}, V_{IL} Data. 2. 2. Add Data for I_{EE} Current.
C	14/APR/03	4.3, 11.2.3, 11.3 13	5, 19-20 21	1. ADD Electronic Static Discharge maximum rating. 2. Change: 11.2.3 Inspection Parameters. 3. Add: 11.3 Sampling Condition. New model numbering system update from old P/N# GM24642SLYT-J2

3. GENERAL SPECIFICATION

Display Format : 240 (W) × 64 (H) dots
Dots Size : 0.49 (W) × 0.49 (H) mm
View Area : 135.0 (W) × 40.0 (H) mm
General Dimensions : 180 (W) × 65 (H) × 16 (T) mm Max.

Weight : 250 g max.

LCD Type : STN Gray STN Yellow FSTN

Polarizer mode : Reflective Transflective

Transmissive Negative

View Angle : 6 O'clock 12 O'clock Others _____

Backlight : LED EL CCFL

Backlight Color : Yellow green Amber Blue Green

White Others

Controller / Driver : T6963C

Temperature Range : Normal Wide Temperature
Operating 0 to 50°C Operating -20 to 70°C
Storage -20 to 70°C Storage -30 to 80°C

Remark:

4. ABSOLUTE MAXIMUM RATINGS

4.1 ELECTRICAL ABSOLUTE MAXIMUM RATINGS

$V_{SS}=0V$, $T_a = 25^{\circ}C$

Item	Symbol	Min.	Max.	Unit
Supply Voltage (Logic)	V_{DD-VSS}	0	7	V
Supply Voltage (LCD Driver)	V_{DD-Vo}	0	19	V
Input Voltage	V_I	V_{SS}	V_{DD}	V
Operating Temperature	T_{OP}	0	50	$^{\circ}C$
Storage Temperature	T_{STG}	-20	70	$^{\circ}C$

4.2 ENVIRONMENTAL ABSOLUTE MAXIMUM RATINGS

Item	Operating		Storage		Comment
	(Min.)	(Max.)	(Min.)	(Max.)	
Ambient Temp	0	50	-20	70	Note (1)
Humidity	Note (2)		Note(2)		Without Condensation
Vibration	--	4.9M/S ²	--	19.6M/S ²	XYZ Direction
Shock	--	29.4M/S ²	--	490M/S ²	XYZ Direction

Note(1) $T_a = 0^{\circ}C$: 50Hr Max.

Note(2) $T_a \leq 40^{\circ}C$: 90% RH Max.

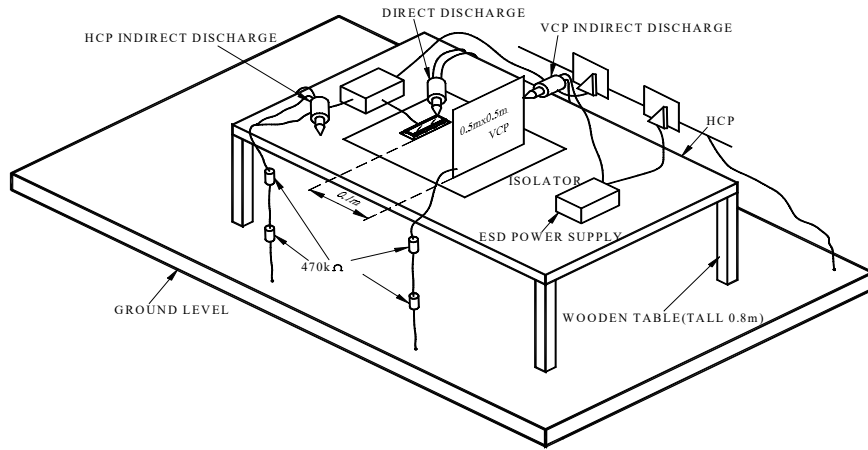
$T_a \geq 40^{\circ}C$: Absolute humidity must be lower than the humidity of 90% RH at $40^{\circ}C$.

4.3 Electronic Static Discharge maximum rating

ESD test method : IEC1000-4-2

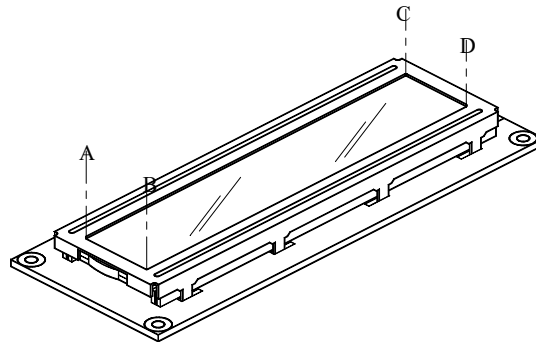
Item	Description
Testing environment	Ambient temperature :15°C to 35 °C Humidity: 30% to 60 % LCM (E.U.T) : Power up
Testing equipment	Manufacture: Noise Ken, Model No. ESD-100L
Testing condition	See drawing 1
Direct discharge	0 to ± 6 KV Discharge point, see drawing 2
Indirect discharge	0 to ± 12KV Discharge point, see drawing 1
Pass condition	No malfunction of unit. Temporary malfunction of unit which can be recovered by system reset
Fail condition	Non. Recoverable malfunction of LCM or system

FIG 1 ESD TESTING EQUIPMENT



(1)

DIRECT CONTACT DISCHARGE CONTACT POINT : A.B.C.D



(2)

5. ELECTRICAL CHARACTERISTICS

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Voltage (Logic)	VDD-VSS		4.5	5.0	5.5	V
Supply Voltage (LCD)	VDD-VO	0°C	11.7	12.4	13.1	V
		25°C	10.8	11.5	12.3	
		50°C	10.1	10.9	11.6	
Input Voltage	V _{IH}	--	VDD-2.2	--	VDD	V
	V _{IL}		0	--	0.8	
Logic Supply Current	I _{DD}	VDD-VSS=5V	--	15	--	mA
	I _{EE}	VDD-VO=11.5V	--	5	--	mA

6. ELECTRO-OPTICAL CHARACTERISTICS

ITEM	Symbol	Condition	Min.	Typ.	Max.	Unit	Ref.
Rise Time	Tr	0°C	--	330	530	ms	Note (1)
		25°C		110	180		
Fall Time	Tf	0°C	--	100	200	ms	
		25°C		360	580		
Contrast	CR	25°C	2	3	--		Note (3)
View Angle	θ _{1~θ2} ∅ _{1, ∅2}	25°C & CR≥1.5	--	30	--		Note (2)
			--	30	--		
Frame Frequency	Ff	25°C	--	64	--	Hz	

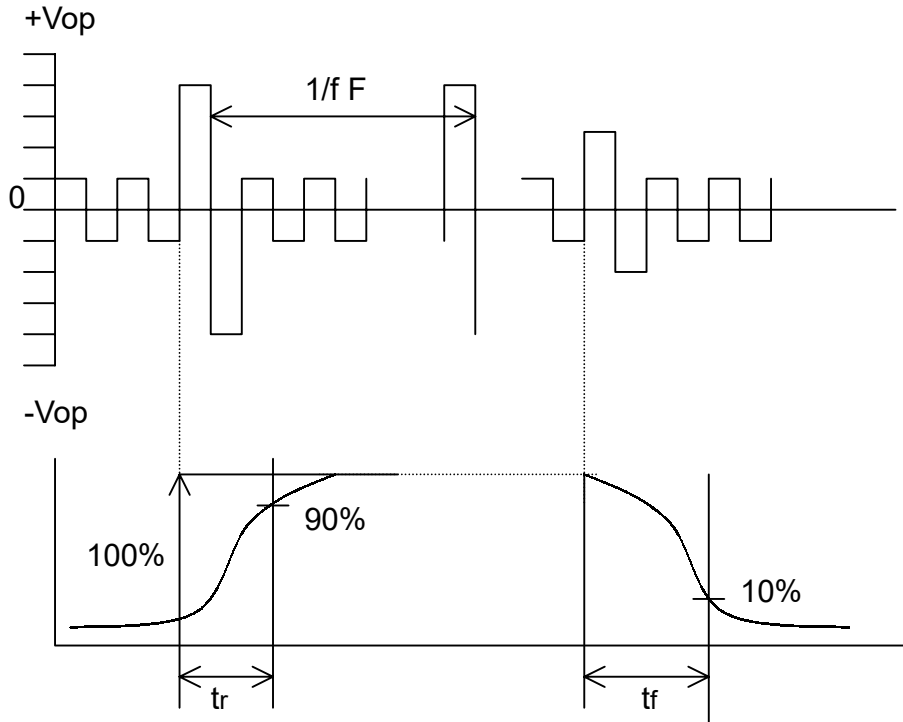
Note (1) & (2) : See next page

Note (3) : Contrast ratio is defined under the following condition:

$$CR = \frac{\text{Brightness of non-selected condition}}{\text{Brightness of selected condition}}$$

- (a). Temperature ----- 25°C
- (b). Frame frequency ---- 64Hz
- (c). Viewing angle ----- θ= 0°, ∅= 0°
- (d). Operating voltage --- 11.5V

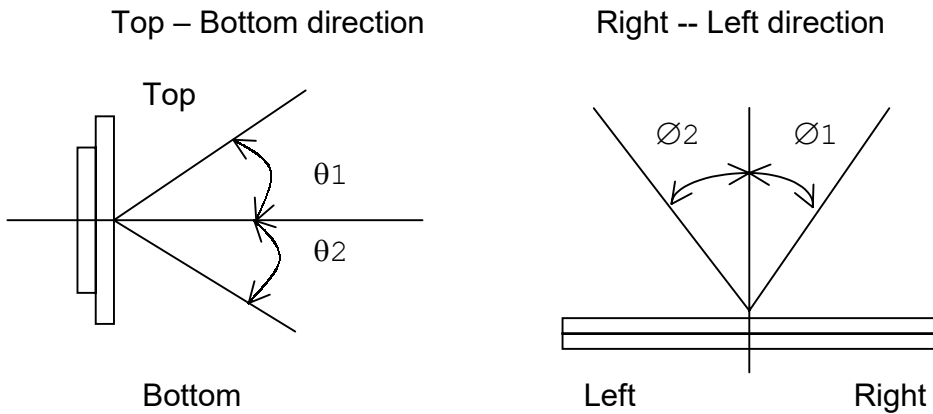
Note (1) Response time is measured as the shortest period of time possible between the change in state of an LCD segment as demonstrated below:



Condition:

- (a) . Temperature -----25°C
- (b) . Frame frequency ----- 64Hz
- (c) . View Angle ----- $\theta = 0^\circ, \varnothing=0^\circ$
- (d) . Operating voltage ----- 11.5V

Note (2) Definition of View Angle



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