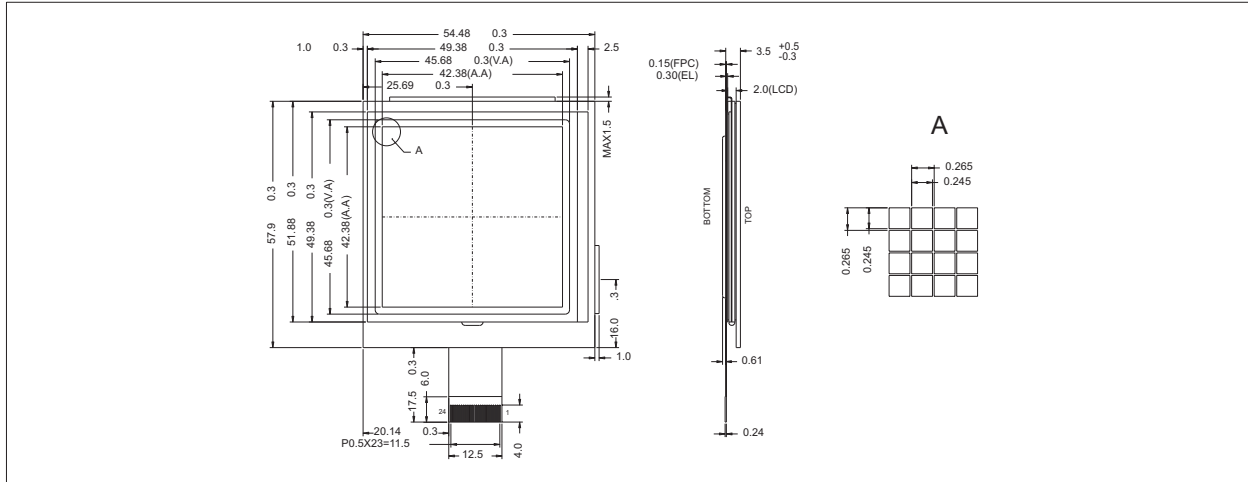


STANDARD COF MODULES

YMS160160-01

160 x 160DOTS
1/160DUTY, 1/13.6BIAS

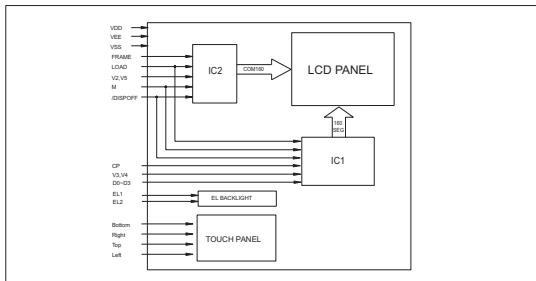
1 EXTERNAL DIMENSION AND DISPLAY PATTERN



2 MECHANICAL DATA

ITEM	SPECIFICATION	UNIT
Module Size(WXHXT)	54.48 x 57.9 x 3.5	mm
Viewing Area(WXH)	45.68 x 45.68	mm
Number of Dots(WXH)	160 x 160	dots
Dot Pitch(WXH)	0.265 x 0.265	mm
Dot Size(WXH)	0.245 x 0.245	mm

3 BLOCK DIAGRAM



4 PIN CONFIGURATION

PIN	SYMBOL	SIGNAL DESCRIPTION
1	V5	Bias Voltage Non-select (Common Driver)
2	V2	Bias Voltage Non-select (Common Driver)
3	VEE	Power Supply for LCD (+V)
4	VDD	Power Supply for Logic
5	FRAME	Frame Start Signal (First Line Mark of Common Signal)
6	GND	Ground
7	LOAD	Latch Pulse of Display Data
8	VSS	Power Supply (0V)
9	M	Switch Signal to Convert LCD Drive Wave From Into AC
10	/DISPOFF	H: Display On L: Display Off
11	CP	Clock Pules for Segment Shift Register
12	V4	Bias Voltage Non-Select (Segment Driver)
13	V3	Bias Voltage Non-Select (Segment Driver)
14	DB3	Display Data
15	DB2	Display Data
16	DB1	Display Data
17	DB0	Display Data
18	NC	No Connection
19	EL1	Power Supply for The EL1
20	EL2	Power Supply for The EL2
21	BOTTOM	Touch Panel Pin
22	RIGHT	Touch Panel Pin
23	TOP	Touch Panel Pin
24	LEFT	Touch Panel Pin

5 ABSOLUTE MAXIMUM RATINGS(Ta=25 °C)

PARAMETER	SYMBOL	MIN.	MAX.	UNIT
Supply Voltage Logic	$V_{DD} - V_{SS}$	-0.3	7.0	V
Supply Voltage Driver	$V_{DD} - V_{EE}$	-0.3	30.0	V
Input Voltage	V_{IN}	-0.3	$V_{DD} + 0.3$	V

Operating Temp.	See page 9
Storage Temp.	

6 ELECTRICAL CHARACTERISTICS(Ta=25 °C)

ITEM	SYMBOL	CONDITION	SPEC. VALUE			UNIT
			MIN.	TYP.	MAX.	
Supply Voltage (Logic)	$V_{DD} - V_{SS}$		-	18.6	-	V
Supply Current (Logic)	I_{DD}	$V_{DD}=5V$	-	3.0	4.5	mA
Input Voltage	"HIGH"	V_{IH}	$0.7 V_{DD}$	-	V_{DD}	V
	"LOW"	V_{IL}	0	-	$0.3 V_{DD}$	V
Output Voltage	"HIGH"	V_{OH}	$I_{OH}=-0.205mA$	2.4	-	V
	"LOW"	V_{OL}	$I_{OL}=1.6mA$	-	0.4	V
LCD Operating Voltage	$V_{DD} - V_{EE}$	$V_{DD}=5V$ $T_a=25\text{ }^\circ\text{C}$	-	16.6	-	V
Supply Current LCD Drive	I_{EE}		-	0.8	1.0	mA

Note(1): () Value is high Reliability type.
Note(2): Electro-Optical Characteristics: See page 6.

7 INTERFACE TIMING CHARACTERISTICS

PARAMETER	SYMBOL	MIN.	MAX.	UNIT
E Cycle Time	t_{CYC}	1000	-	ns
E High Level Width	t_{WH}	450	-	ns
E Low Level Width	t_{WL}	450	-	ns
E Rise Time	t_{rE}	-	25	ns
E Fall Time	t_{fE}	-	25	ns
Address Setup Time	t_{AS}	140	-	ns
Address Hold Time	t_{AH}	10	-	ns
Data Setup Time	t_{SD}	200	-	ns
Data Delay Time	t_{DD}	-	320	ns
Data Delay Time(Write)	t_{DWD}	10	-	ns
Data Hold Time(Read)	t_{DHR}	20	-	ns

