

SH160160A (160 DOTS X 160 DOTS)

FEATURES

- ◆ NO BUILT-IN CONTROLLER
- ◆ +3.3V POWER SUPPLY
- ◆ 1/160 DUTY CYCLE
- ◆ 4-BIT PARALLEL INTERFACE
- ◆ BUILT-IN EL INVERTER

INTERFACE PIN CONNECTIONS

NO.	SYMBOL	LEVEL	FUNCTION
1	V _{SS}	0V	Power Supply Ground
2	FLM	H	Frame Start Signal
3	CL1	H→L	Common Driver Data Shift Signal
4	CL2	H→L	Clock Pulse For Segment Shift Register
5	M	H/L	Control Signal For AC Driving
6	V _{DD}	3.3V	Power Supply Voltage
7	EL_ON	H	EL Control Signal
8	VEE	---	Power Supply Voltage For LCD
9~12	DB3~DB0	H/L	Data Bus Line
13~16	NC	-	No Connection

MECHANICAL DATA

ITEM	DIMENSIONS	UNIT
Module Size (W x H x T)	69.0 x 69.5 x 6.0	mm
Viewing Area (W x H)	63.4 x 63.3	mm
Active Area (W x H)	55.985 x 55.985	mm
Dot Size (W x H)	0.335 x 0.335	mm
Dot Pitch (W x H)	0.35 x 0.35	mm

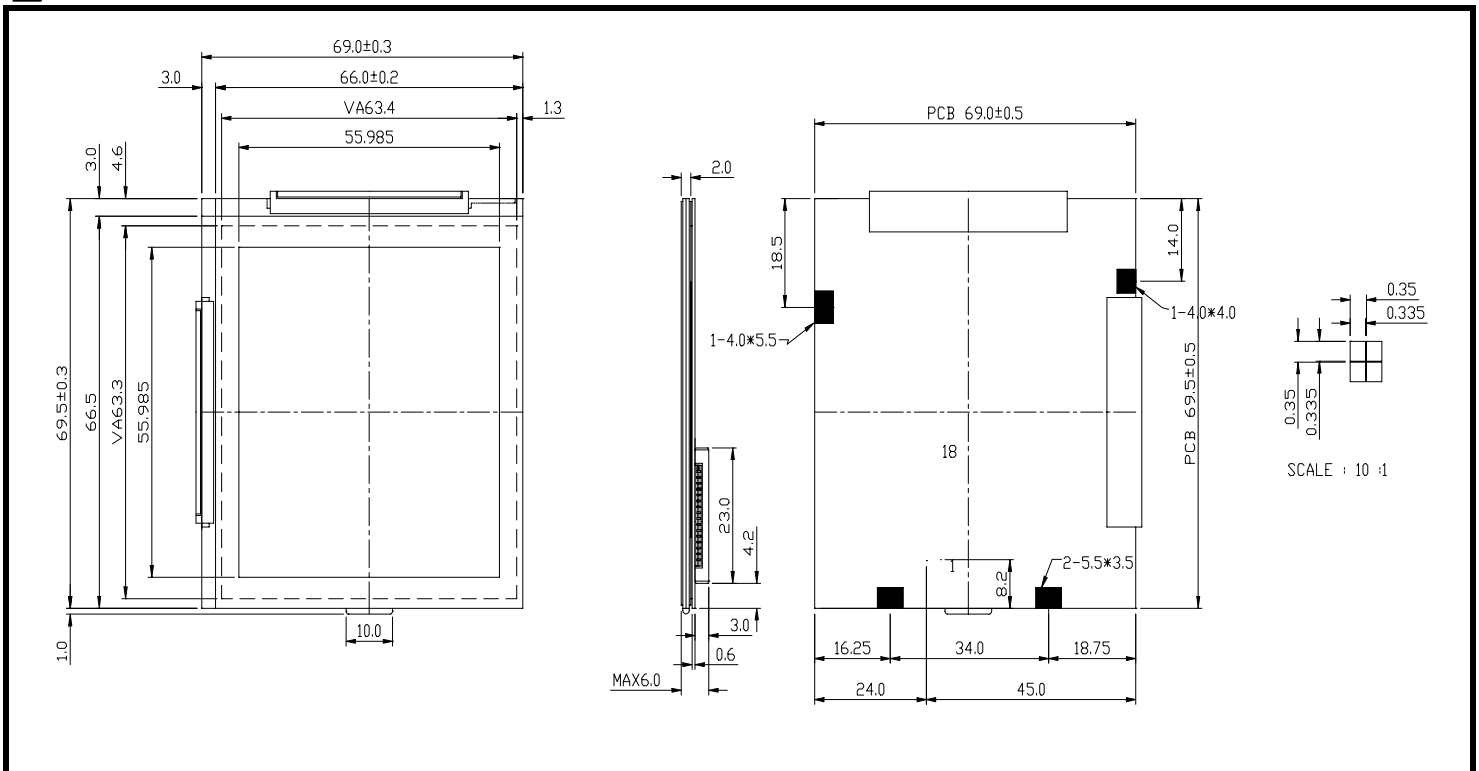
ABSOLUTE MAXIMUM RATINGS

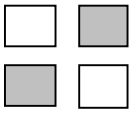
ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage For Logic	V _{DD} -V _{SS}	0	-	7	V
Supply Voltage For LCD Drive	V _{DD} -V _o	0	-	30	V
Input Voltage	V _I	V _{SS}	-	V _{DD}	V

ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT	
Supply Voltage For Logic	V _{DD} -V _{SS}	-	2.7	3.3	4.5	V	
LCD Supply Voltage	V _{DD} -V _o	V _{DD} =3.3V Ta=25°C	17.7	18.6	19.5	V	
Supply Current	I _{DD}	V _{DD} =3.3V	-	2.5	4.5	mA	
Input Voltage	"HIGH" Level	V _{IH}	-	2.2	-	V _{DD}	V
	"LOW" Level	V _{IL}	-	-	-	0.6	V
Output Voltage	"HIGH" Level	V _{OH}	-	2.4	-	V	V
	"LOW" Level	V _{OL}	-	-	-	0.4	V

EXTERNAL DIMENSIONS

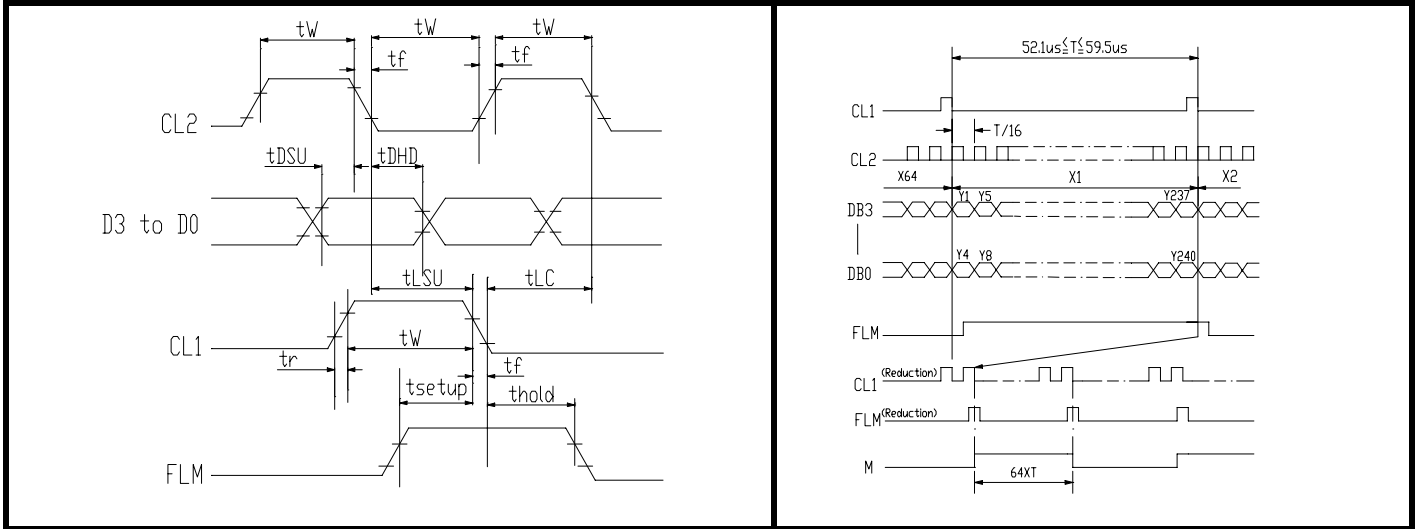




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■ TIMING CHARACTERISTICS

ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT.
Frequency Of Maximum Clock	f_{CP}	-	-	8	MHZ
CL1, CL2, Pulse Width	t_w	45	-	-	ns
Rise, Fall Time	t_r, t_f	-	-	15	ns
Data Setup Time	t_{DSU}	20	-	-	ns
Data Hold Time	t_{DHD}	20	-	-	ns
CL1 Setup Time	t_{LSU}	80	-	-	ns
CL1 → CL2 Time	t_{LC}	80	-	-	ns
FLM Setup Time	t_{setup}	100	-	-	ns
FLM Hold Time	t_{hold}	100	-	-	ns
M Delay Time	t_{DF}	-	-	300	ns



■ BLOCK DIAGRAM

