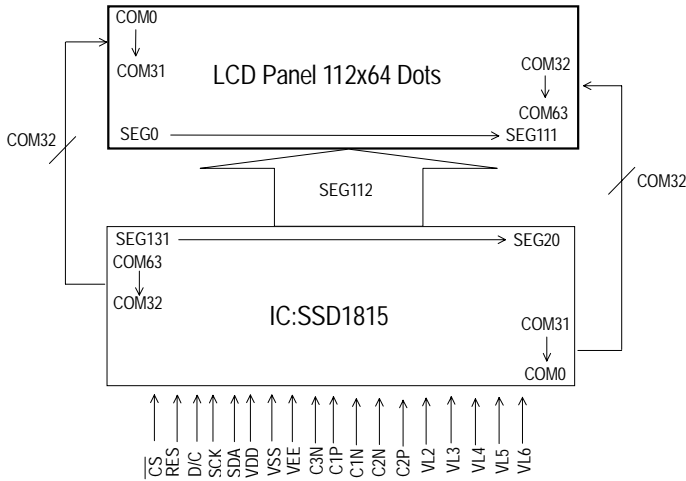


■ TYPE OF PRODUCTS

ITEM	DIMENSIONS	UNIT
MODULE SIZE (W x H x T)	39.04 x 51.17 x 5.7	mm
VIEWING AREA (W x H)	29.58 x 22.96	mm
ACTIVE AREA (W x H)	27.42 x 19.56	mm
DOT SIZE (W x H)	0.225 x 0.286	mm
DOT PICTH (W x H)	0.245 x 0.306	mm

■ BLOCK DIAGRAM



■ PIN ASSIGNMENT

PIN NO.	SYMBOL	FUNCTION
1	/CS	CHIP SELECT INPUTS
2	/RES	RESET SIGNAL INPUT
3	D/C	DATA/COMMAND CONTROL PIN
4	D6(SCK)	THE SERIAL CLOCK INPUT
5	D7(SDA)	THE SERIAL DATA INPUT
6	V <sub>DD</sub>	POWER SUPPLY PIN
7	V <sub>SS</sub>	GROUND
8	V <sub>EE</sub>	NEGATIVE VOLTAGE SUPPLY PIN
9	C3-	INTERNAL DC-DC VOLTAGE CONVERTER
10	C1+	INTERNAL DC-DC VOLTAGE CONVERTER
11	C1-	INTERNAL DC-DC VOLTAGE CONVERTER
12	C2-	INTERNAL DC-DC VOLTAGE CONVERTER
13	C2+	INTERNAL DC-DC VOLTAGE CONVERTER
14	V <sub>L2</sub>	LCD DRIVING VOLTAGES
15	V <sub>L3</sub>	LCD DRIVING VOLTAGES
16	V <sub>L4</sub>	LCD DRIVING VOLTAGES
17	V <sub>L5</sub>	LCD DRIVING VOLTAGES
18	V <sub>L6</sub>	LCD DRIVING VOLTAGES

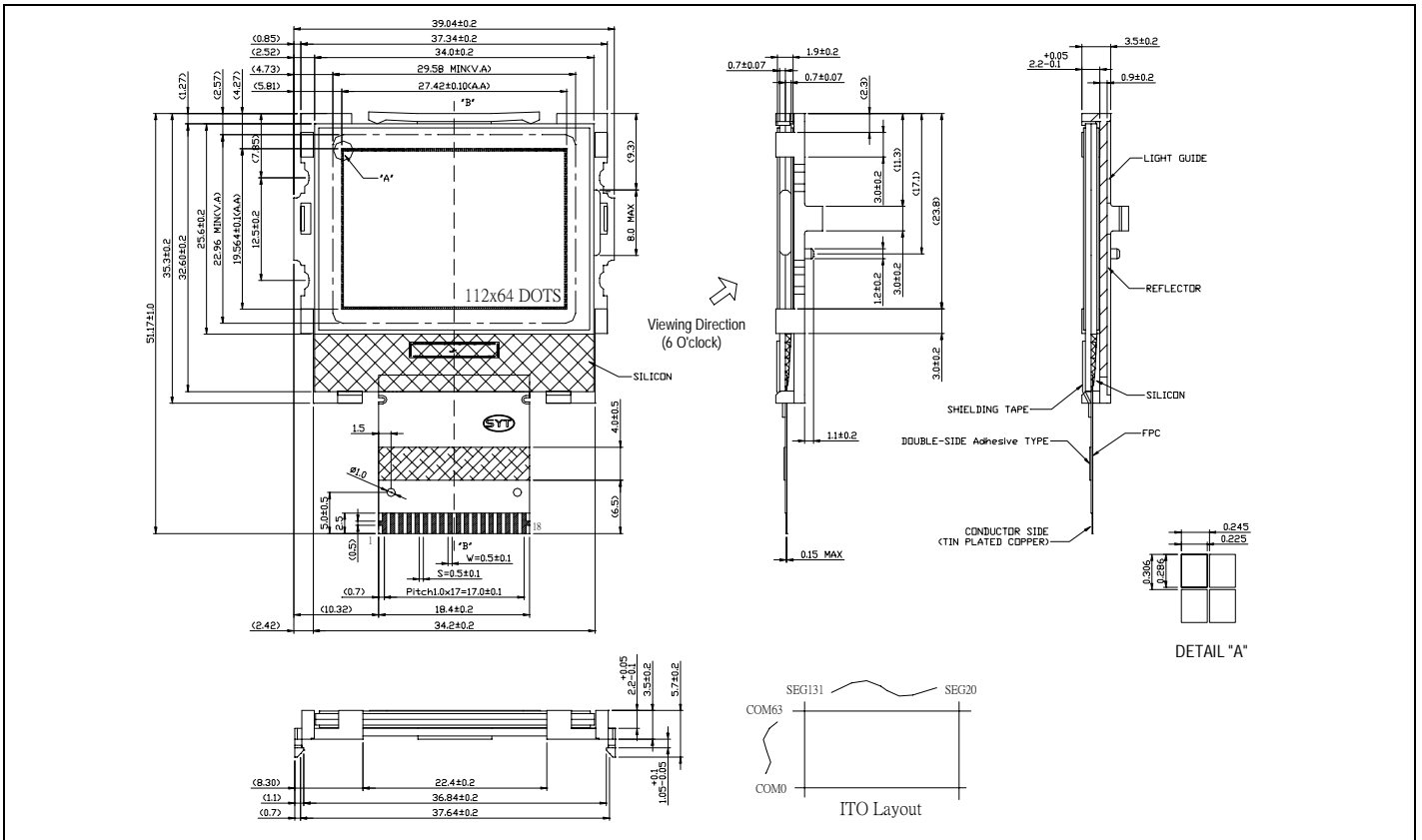
■ ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY FOR LOGIC	V <sub>DD</sub> -V <sub>SS</sub>	T <sub>a</sub> =25°C	2.76	2.85	2.93	V
POWER SUPPLY FOR LCD DRIVING	V <sub>LCD</sub>	T <sub>a</sub> =25°C	—	10.3	—	V
INPUT VOLTAGE "H" LEVEL	V <sub>IH</sub>	—	0.9 V <sub>DD</sub>	—	V <sub>DD</sub>	V
INPUT VOLTAGE "L" LEVEL	V <sub>IL</sub>	—	0	—	0.1 V <sub>DD</sub>	V
OUTPUT VOLTAGE "H" LEVEL	V <sub>OH</sub>	—	—	—	—	V
OUTPUT VOLTAGE "L" LEVEL	V <sub>OL</sub>	—	—	—	—	V
POWER SUPPLY CURRENT	I <sub>DD</sub>	—	—	250	375	μA

■ ABSOLUTE MAXIMUM RATING

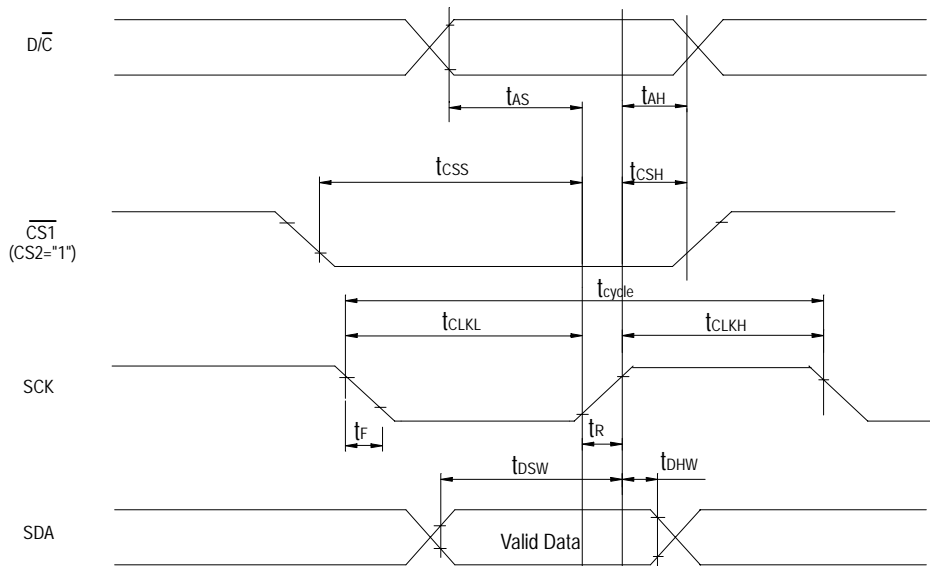
ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY FOR LOGIC	V <sub>DD</sub> -V <sub>SS</sub>	T <sub>a</sub> =25°C	- 0.3	—	+ 4.0	V
POWER SUPPLY FOR LCD DRIVING	V <sub>LCD</sub>	T <sub>a</sub> =25°C	0	—	+ 12.0	V
INPUT VOLTAGE	V <sub>IN</sub>	T <sub>a</sub> =25°C	V <sub>SS</sub> - 0.3	—	V <sub>DD</sub> + 0.3	V
OPERATING TEMPERATURE	T <sub>OPR</sub>	—	- 20	—	+ 70	°C
STORAGE TEMPERATURE	T <sub>STG</sub>	—	- 30	—	+ 80	°C

## OUTLINE DIMENSIONS



## TIMING CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
CLOCK CYCLE TIME	$t_{cycle}$	—	250	—	—	ns
ADDRESS SETUP TIME	$t_{AS}$	—	150	—	—	ns
ADDRESS HOLD TIME	$t_{AH}$	—	150	—	—	ns
CHIP SELECT SETUP TIME (FOR D7-INPUT)	$t_{CSS}$	—	120	—	—	ns
CHIP SELECT HOLD TIME (FOR D0-INPUT)	$t_{CSH}$	—	60	—	—	ns
WRITE DATA SETUP TIME	$t_{DSW}$	—	100	—	—	ns
WRITE DATA HOLD TIME	$t_{DHW}$	—	100	—	—	ns
CLOCK LOW TIME	$t_{CLKL}$	—	100	—	—	ns
CLOCK HIGH TIME	$t_{CLKH}$	—	100	—	—	ns
RISE TIME	$t_R$	—	—	—	15	ns
FALL TIME	$t_F$	—	—	—	15	ns



SERIES INTERFACE TIMING CHARACTERISTICS