Display Elektronik GmbH

DATA SHEET

STANDARD OLED/PLED

DEP 128032C - W

Product Specification ***Version : 01***

25.10.2010

History of Version

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01	NEW VERSION	2010/10/25	SPEC.

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1. Numbering System

2. General Specification

(1) Mechanical Dimension

Item	Standard Value	Unit
Number of dots	128×32	dots
Module dimension (L*W*H)	29.8*15.4*1.21	mm
View area	27.58*8.38	mm
Active area	25.58*6.38	mm
Dot size	0.18(W)×0.18(H)	mm
Dot pitch	0.2(W)×0.2 (H)	mm

(2) Controller IC: LD7032 IC Controller

(3) Temperature Range

Operating	-40 ~ +70℃
Storage	-40 ~ +85℃

3. Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	TOP	-20	—	+70	℃
Storage Temperature	TST	-30	—	+85	℃
Input Voltage	VI	—	—	VDD	V
Operating lift time			21000(*)		Hrs

*:100cd/m^2 light on

*:Ta=25℃,50%RH

4. Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Voltage For Logic	V_{DD}-V_{SS}	—	1.65	2.8	3.5	V
Supply Voltage For OLED	Vcc-Vss	—	11.5	12	12.5	V
Input High Vol	V_{IH}	—	0.8V_{DD}	—	V_{DD}	V
Input Low Vol	V_{IL}	—	0	—	0.2V_{DD}	V
Output High Vol	V_{OH}	—	0.9V_{DD}	—	V_{DD}	V
Output Low Vol.	V_{OL}	—	0	—	0.1V_{DD}	V
Supply Current	I_{DD}	Contrast= 0x3d, Vcc=12V, 120 cd/m^2	—	7	—	mA

5. Optical Characteristics

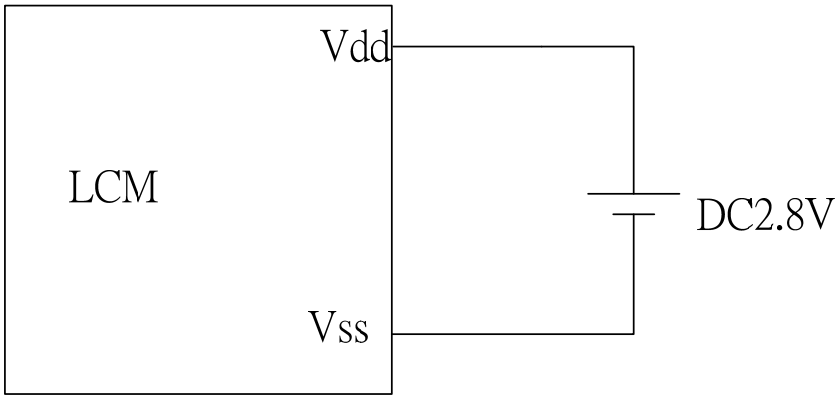
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
View Angle	θ	—	160	—	—	deg
Dark Room Contrast	CR	—	—	2000:1	—	—
Response Time	T	—	—	10	—	μs
CIEx (White)	—	—	0.24	0.28	0.32	
CIEy (White)	—	—	0.28	0.32	0.36	

6. Interface Pin Function

Pin No.	Symbol	Level	Description
1	Vss	0V	Ground
2	Vdd	2.8V	Supply voltage for logic
3	CS	H/L	Chip select pin
4	/RES	H/L	Hardware Reset pin
5	RS	H/L	H: Data; L: Command.
6	WR	H/L	8080: data write enable pin 6800: Read/Write select pin
7	RD	H/L	8080: data read enable pin 6800: Read/Write enable pin
8	DB0	H/L	Data bus line
9	DB1	H/L	Data bus line
10	DB2	H/L	Data bus line
11	DB3	H/L	Data bus line
12	DB4	H/L	Data bus line
13	DB5	H/L	Data bus line
14	DB6	H/L	Data bus line
15	DB7	H/L	Data bus line
16	NC VCC	— H/L	NC:No connection (with built-in positive voltage) VCC: Supply Voltage For OLED

7. Power supply for LCD Module

＊LCM operating on "DC 2.8V " input with built-in positive voltage

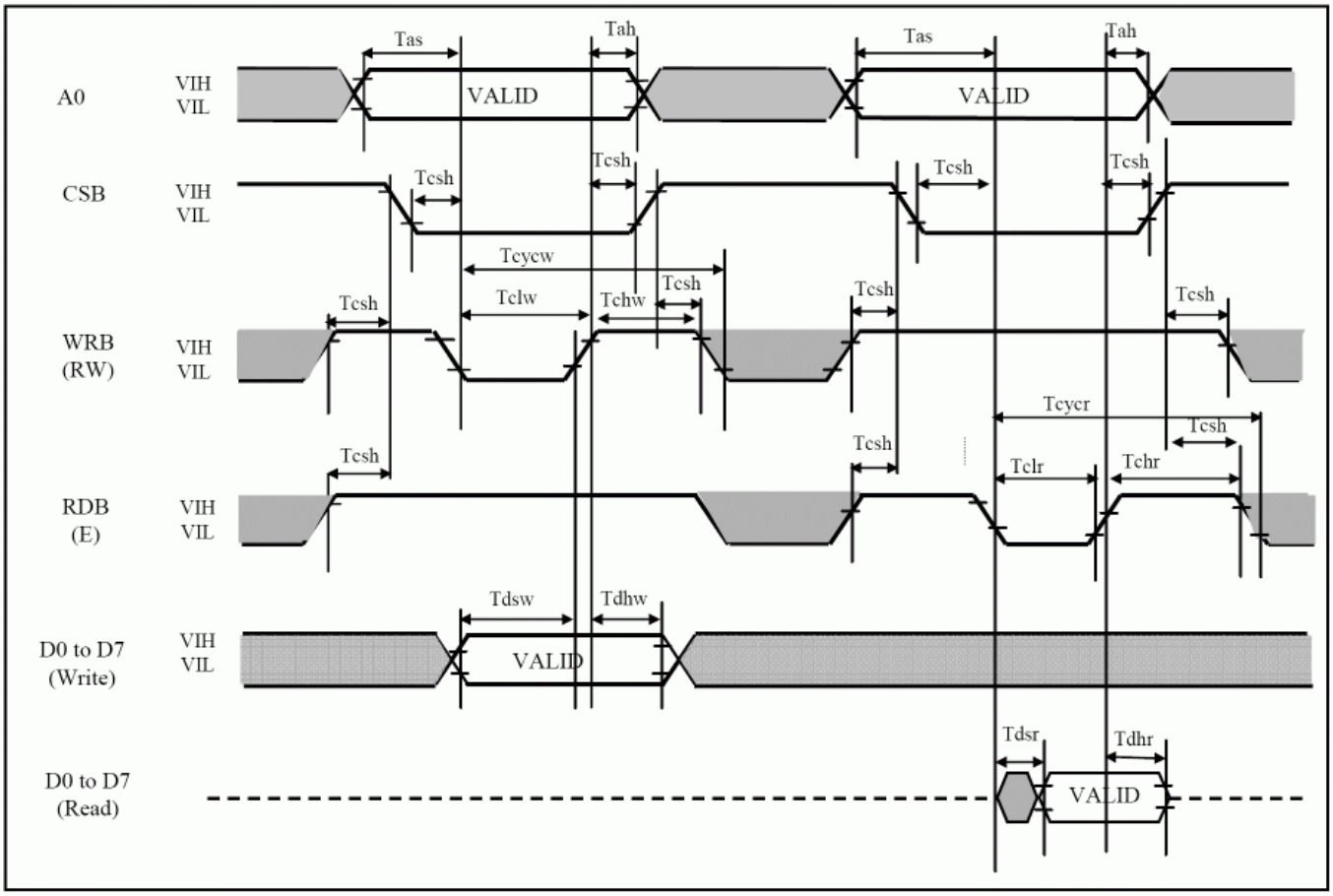


8. Timing Characteristics

Parallel Interface1 (Write/Read Timing)

(VSS = 0V, VDD= 2.6V~3.5V, Ta = 25℃)

Parameter	Symbol	Condition		Specification MIN	Specification MAX	Units
Address setup time	Tas	A0		20		ns
Address hold time	Tah	A0		10		
System cycle time	Tcycw	WRB	Write	100		
	Tcycr	RDB	Read	500		
Write control low pulse width	Tclw	WRB		40		
Write control high pulse width	Tchw			40		
Read control low pulse time	Tclr	RDB		60		
Read control high pulse time	Tchr			80		
Write data setup time	Tdsw	D0 – D7		20		
Write data hold time	Tdhw			10		
Read data setup time (Data Output Access Time)	Tdsr				200	
Read data hold time (Data output disable time)	Tdhr			10		
CSB – WRB , RDB time	Tcsh	CSB		10		



Parallel Interface2 (Write/Read Timing)

(VSS = 0V, VDD= 1.65V~3.5V, Ta = 25℃)

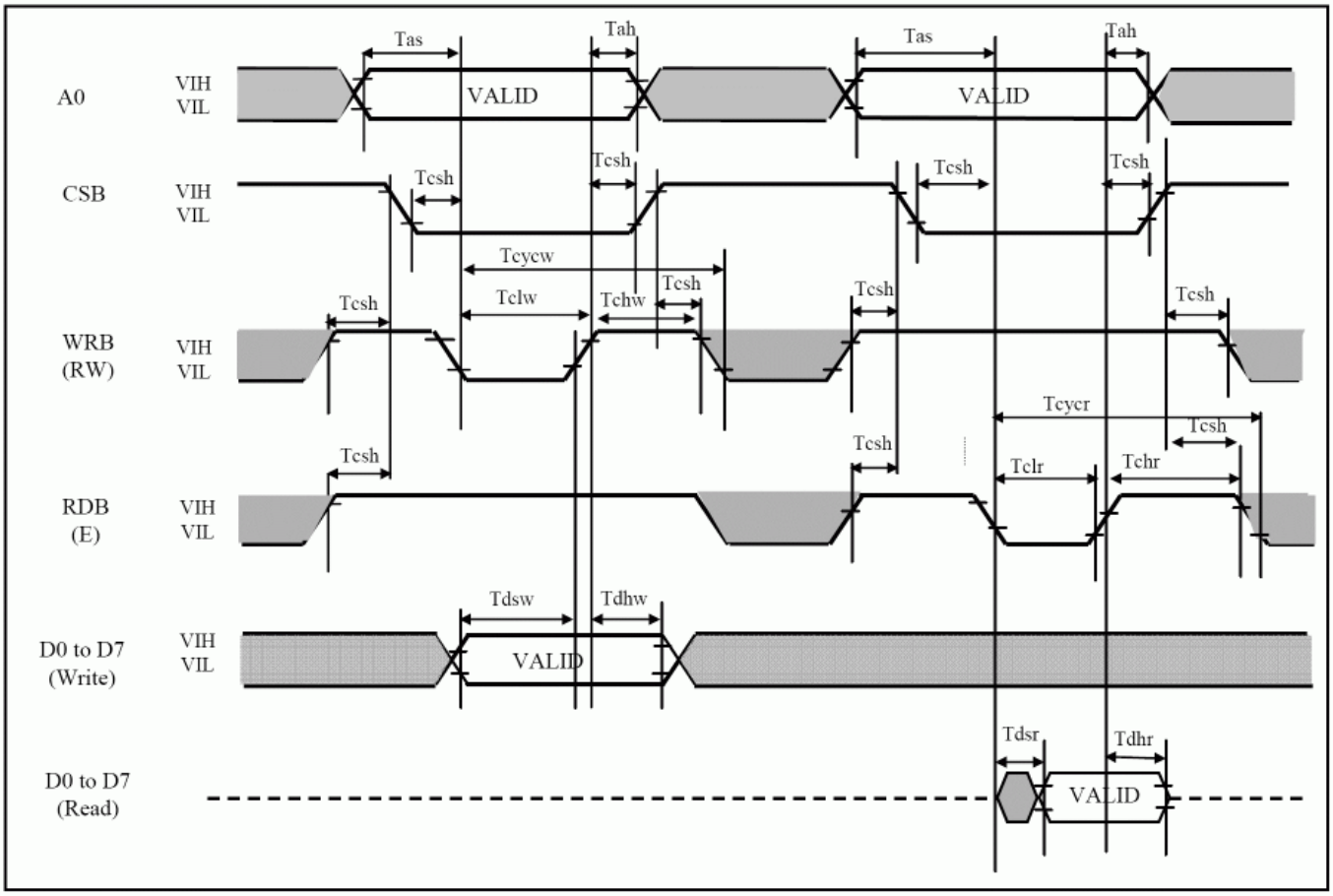
Parameter	Symbol	Condition		Specification		Units
				MIN	MAX	
Address setup time	Tas	A0		60		ns
Address hold time	Tah	A0		30		
System cycle time	Tcycw	WRB	Write	300		
	Tcycr	RDB	Read	500		
Write control low pulse width	Tclw	WRB		120		
Write control high pulse width	Tchw			120		
Read control low pulse time	Tclr	RDB		60		
Read control high pulse time	Tchr			80		
Write data setup time	Tdsw	D0 – D7		60		
Write data hold time	Tdhw			30		
Read data setup time (Data Output Access Time)	Tdsr				200	
Read data hold time (Data output disable time)	Tdhr			10		
CSB – WRB , RDB time	Tcsh	CSB		30		

8. Timing Characteristics

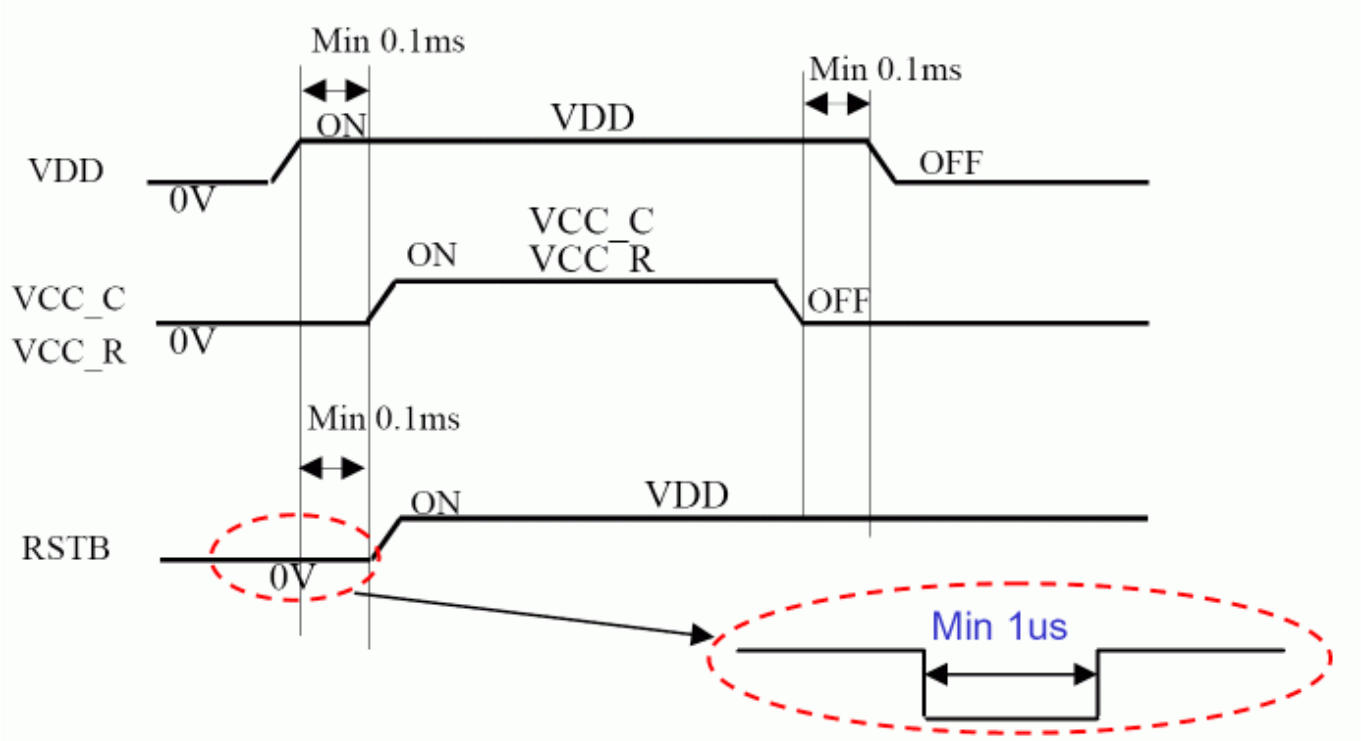
Parallel Interface1 (Write/Read Timing)

(VSS = 0V, VDD= 2.6V~3.5V, Ta = 25℃)

Parameter	Symbol	Condition		Specification MIN	Specification MAX	Units
Address setup time	Tas	A0		20		ns
Address hold time	Tah	A0		10		
System cycle time	Tcycw	WRB	Write	100		
	Tcycr	RDB	Read	500		
Write control low pulse width	Tclw	WRB		40		
Write control high pulse width	Tchw			40		
Read control low pulse time	Tclr	RDB		60		
Read control high pulse time	Tchr			80		
Write data setup time	Tdsw	D0 – D7		20		
Write data hold time	Tdhw			10		
Read data setup time (Data Output Access Time)	Tdsr				200	
Read data hold time (Data output disable time)	Tdhr			10		
CSB – WRB , RDB time	Tcsh	CSB		10		



12. Power ON and OFF sequence



Power On Sequence

System Power On 1 (Vdd On)

Wait for Several ms

RESB Active

System Power On 2 (Vcc On)

Wait for Several ms

Use Graphics Case

DSTBY OFF 14h 00h

3.Panel Condition Set

4.Drive Condition Set

5.Memory Data Write

DDISP ON 02h 01h

Graphics Off Sequence

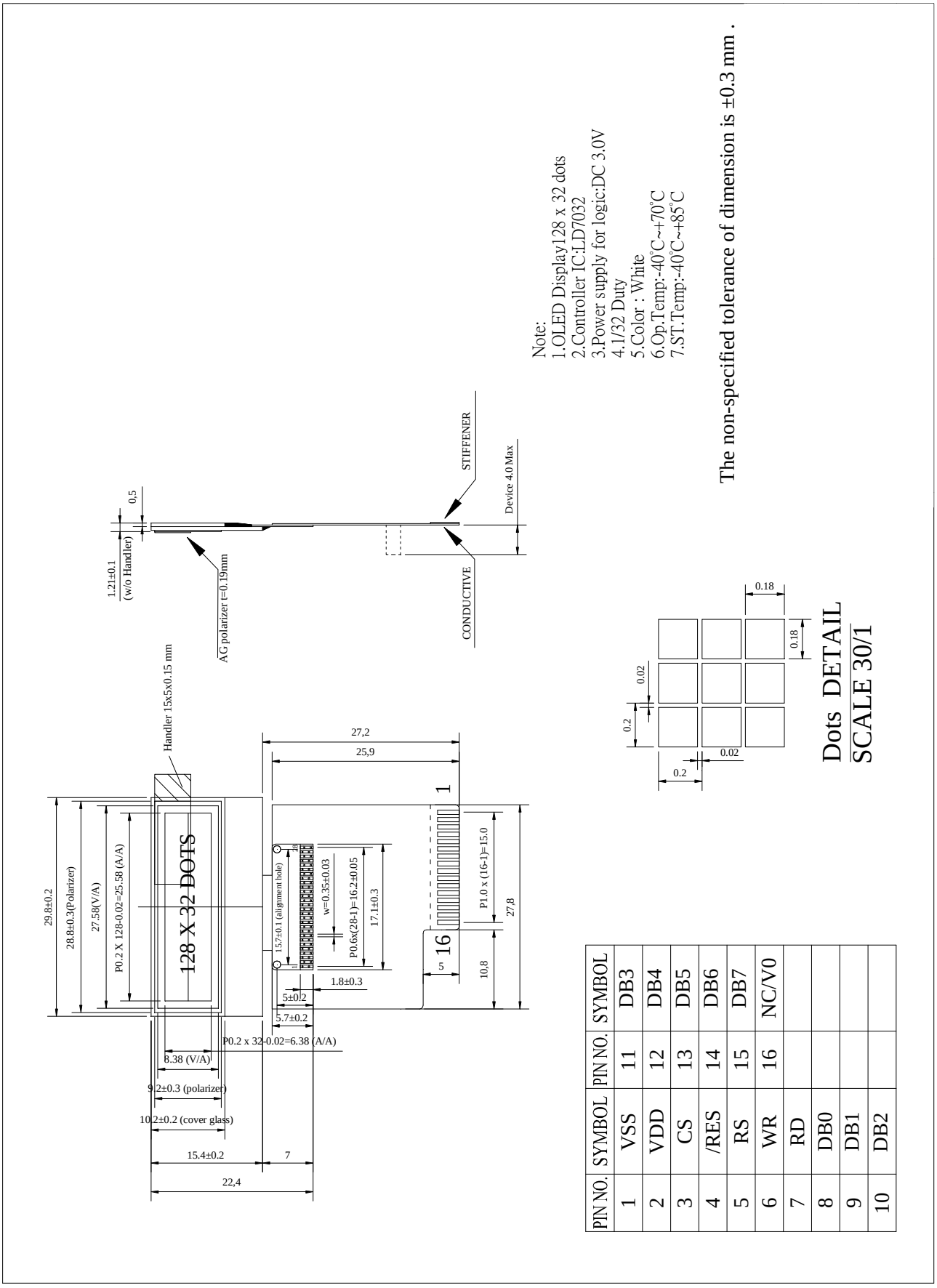
Iref Off	12h 00h
DDISP Off	02h 00h
DSTBY ON	14h 01h

System Power Off 2 (Vcc Off)

Wait for Several ms

System Power Off 1 (Vdd Off)

11. Appendix (Drawing)



PIN NO.	SYMBOL	PIN NO.	SYMBOL
1	VSS	11	DB3
2	VDD	12	DB4
3	CS	13	DB5
4	/RES	14	DB6
5	RS	15	DB7
6	WR	16	NC/V0
7	RD		
8	DB0		
9	DB1		
10	DB2		