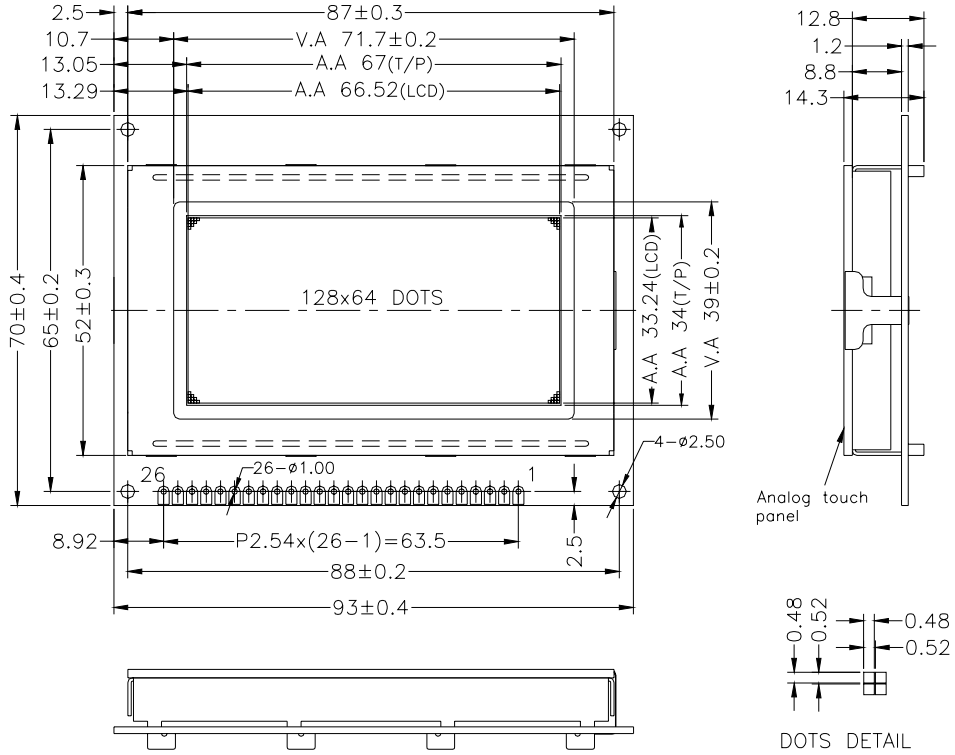
Hungarydisplay

LCD

HDEM 128 64 LCD
grafikus 128x64
FSTN

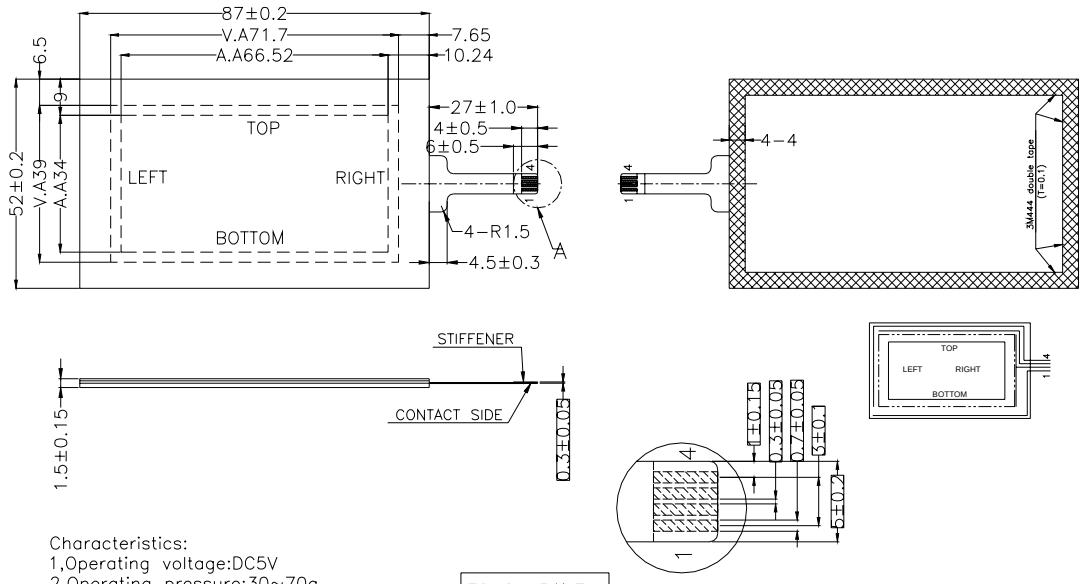
2020.01.22

3. EXTERNAL DIMENSIONS



REMARKS:
1,UNMARKED TOLERANCE IS ±0.3
2,THE MATERIAL COMPLY WITH RoHS

4. TOUCH PANEL DRAWING

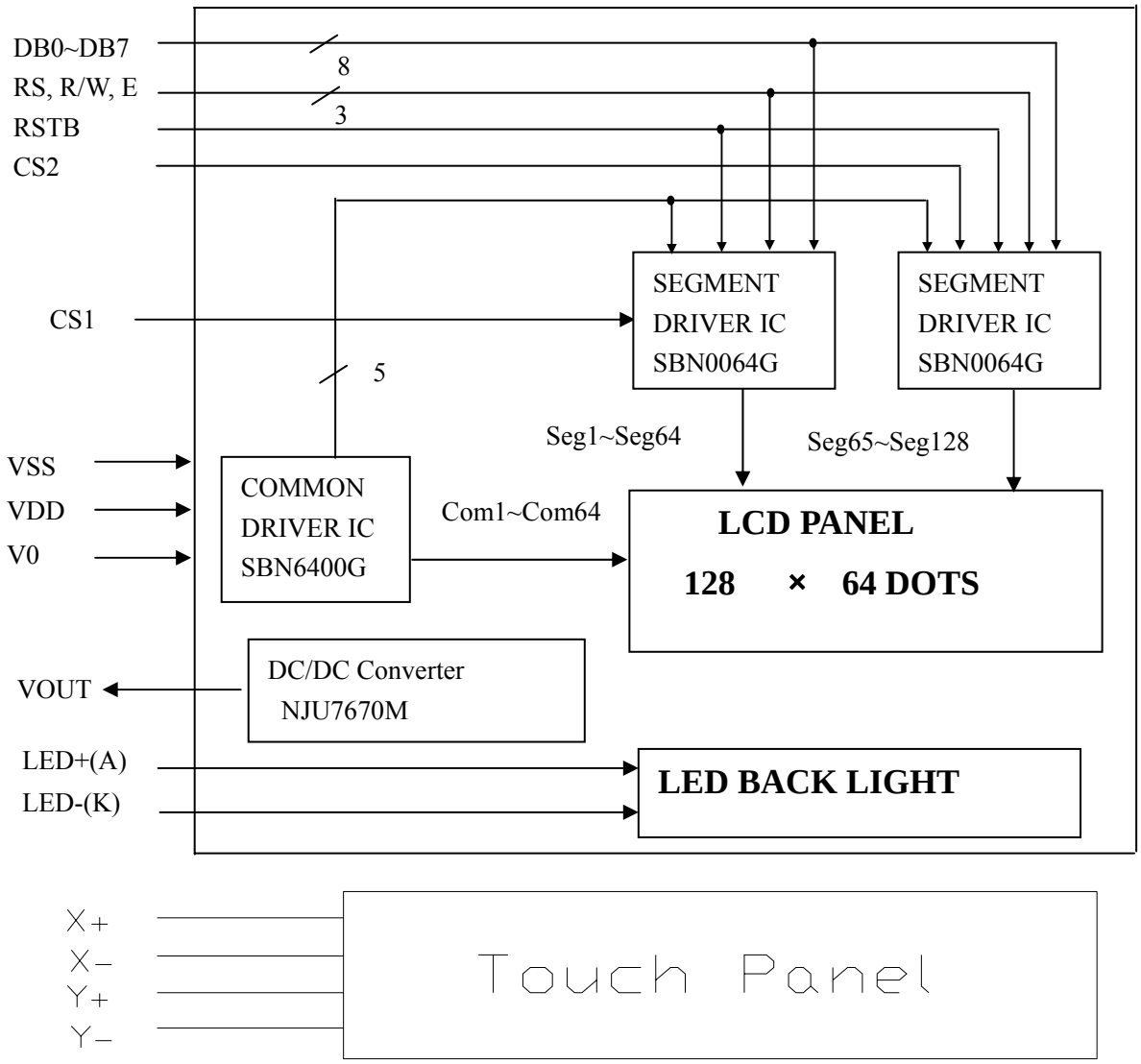


Characteristics:
1,Operating voltage:DC5V
2,Operating pressure:30~70g
3,Linearity:±1.5% or less
4,Operating temperature:-20°C~+70°C
5,Storage temperature:-25°C~+75°C
6,Humidity:<90%RH
7,Transmittance:75% or more
8,Connector:FPC
9,Film Type:Anti_Glare
10,Lifetime:1000000 times
11,Response time:<10ms

TOUCH PANEL	
No	SYMBOL
1	BOTTOM
2	RIGHT
3	TOP
4	LEFT

Remarks:
1,Unmarked tolerance is ±0.3,
2,The material comply with RoHS.

5. BLOCK DIAGRAM



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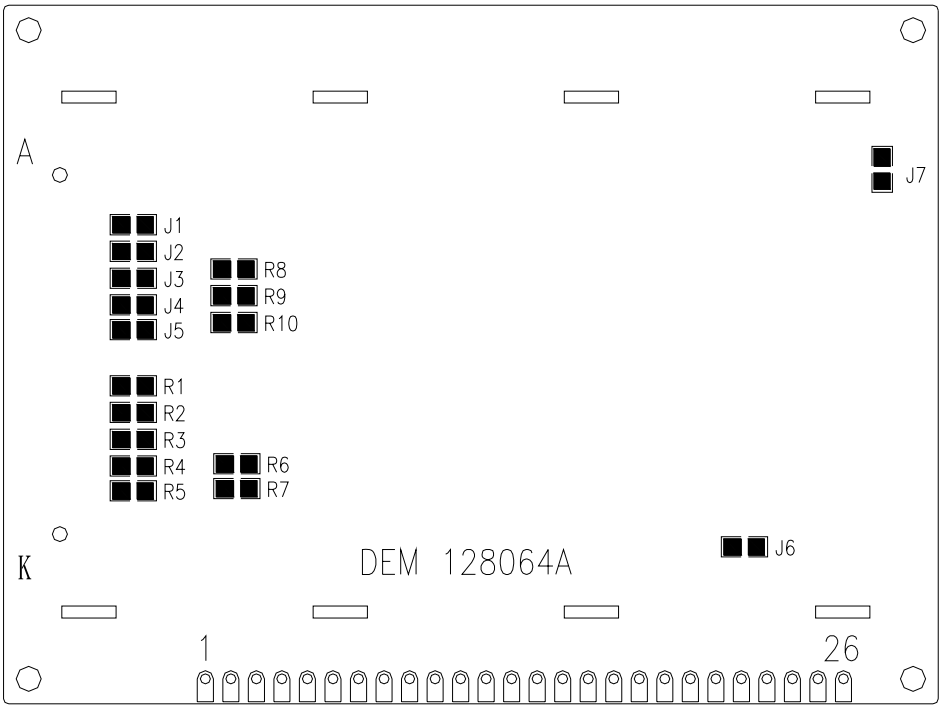
6. PIN ASSIGNMENT

Pin No.	Symbol	Function
1	Y-	Y- Position input.
2	X-	X- Position input.
3	Y+	Y+ Position input
4	X+	X+ Position input.
5	VSS	Ground
6	VDD	Power supply voltage for logic,+ 5.0V.
7	V0	Input voltage for LCD
8	RS	Register select RS = 0…Instruction register RS = 1…Data register
9	R/W	Read /Write R/W = 1…Read R/W = 0…Write
10	E	Chip enable signal
11	DB0	Data bit 0
12	DB1	Data bit 1
13	DB2	Data bit 2
14	DB3	Data bit 3
15	DB4	Data bit 4
16	DB5	Data bit 5
17	DB6	Data bit 6
18	DB7	Data bit 7
19	CS1	Chip select signal for SBN0064G(1)
20	CS2	Chip select signal for SBN0064G(2)
21	RSTB	Reset signal
22	VOUT	Output voltage for LCD,-9.5V
23	LED+(A)	Please also refer to 6. PCB drawing and description.
24	LED-(K)	
25	NC	No connection
26	NC	No connection

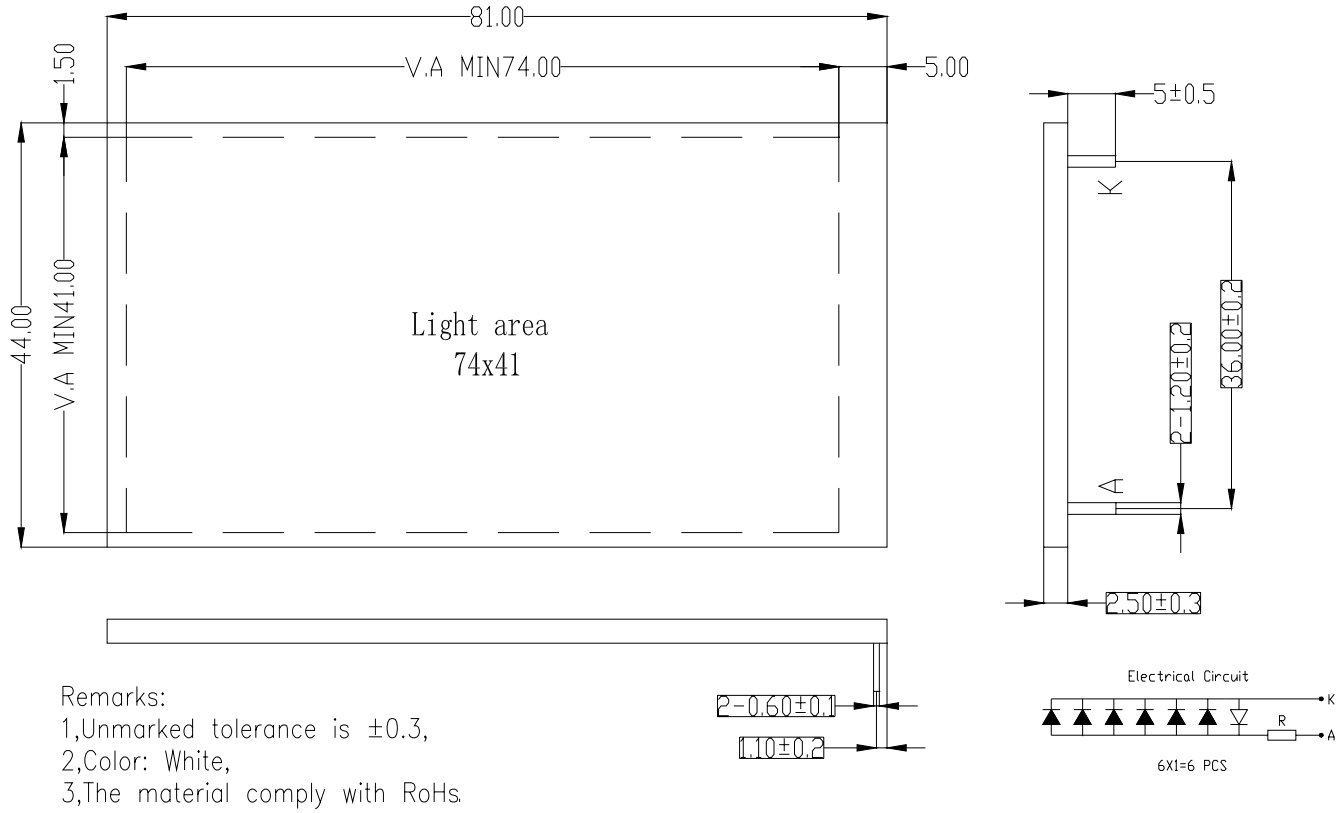
7. PCB DRAWING AND DESCRIPTION



8. BACKLIGHT ELECTRICAL/OPTICAL CHARACTERISTICS

Electronics/Optical Specifications:

	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
Forward Voltage	Vf		4.0		V	
Forward Current	If		90	120	mA	Vf= 4.0 V
Power Dissipation	Pd		0.36		W	Vf= 4.0 V
Reverse Voltage	Vr			5.0	V	
Reverse Current	Ir			0.4	mA	
Luminous Intensity	Lv	150	250		cd/m^2	Vf= 4.0 V
Luminous Uniformity	ΔLv	70			%	Vf= 4.0 V
Emission Wavelength	X	0.27		0.32		If=20mA Ta=25° Each chip
	Y	0.27		0.32		



Remarks:
1,Unmarked tolerance is ±0.3,
2,Color: White,
3,The material comply with RoHs.

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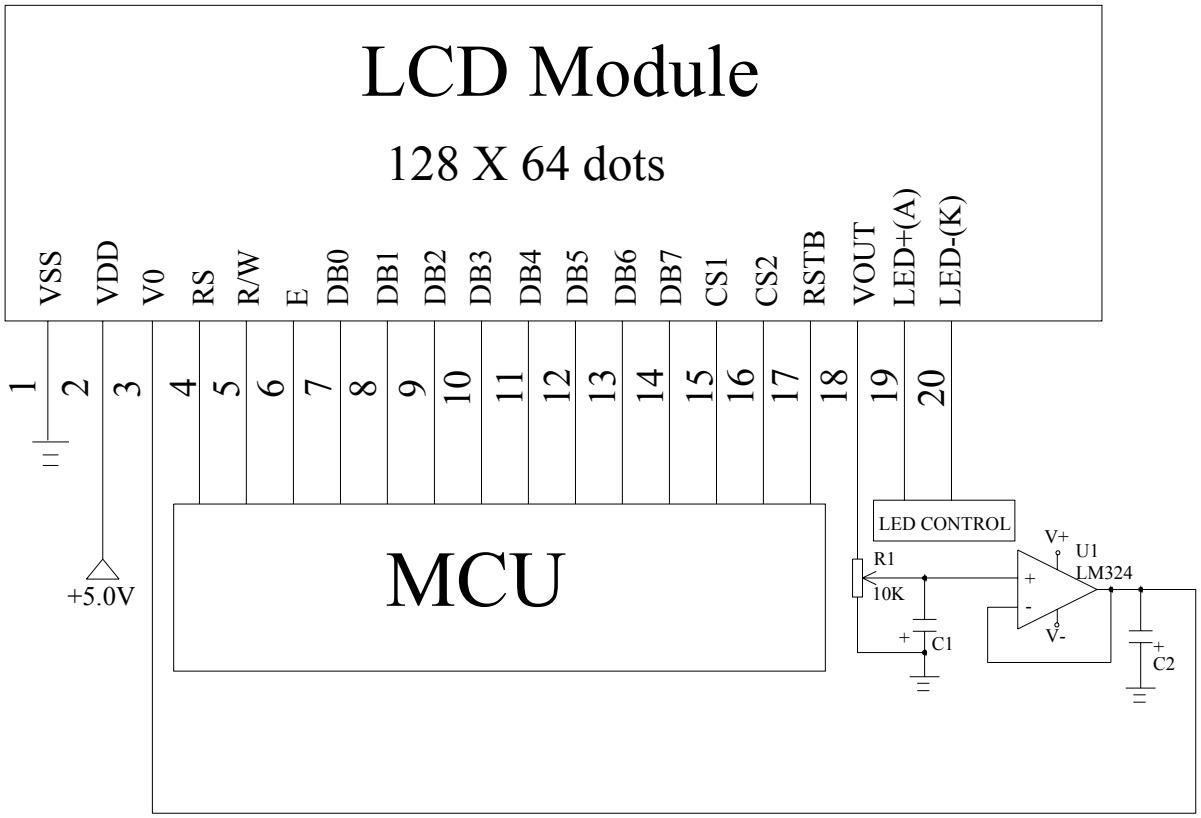
9. APPLICATION CIRCUIT



NOTE: 1. R1 is the contrast resistor.

2. VOUT=-9.5V

3. Adjust R1, it will be best contrast when V0 is –7.9V.

10. MAXIMUM ABSOLUTE POWER RATINGS (Ta=25°C)

Item	Symbol	Standard value	Unit
Supply voltage for logic	V_{DD}	-0.3~+7.0	V
Supply voltage	V_{EE}	VDD-16 (MIN.)	V
Driver supply voltage	$V_0 - V_5$	13 (MAX.)	V
Operating temperature	Topr	-20~+70	°C
Storage temperature	Tstg	-25~+75	°C

11. ELECTRICAL CHARACTERISTICS

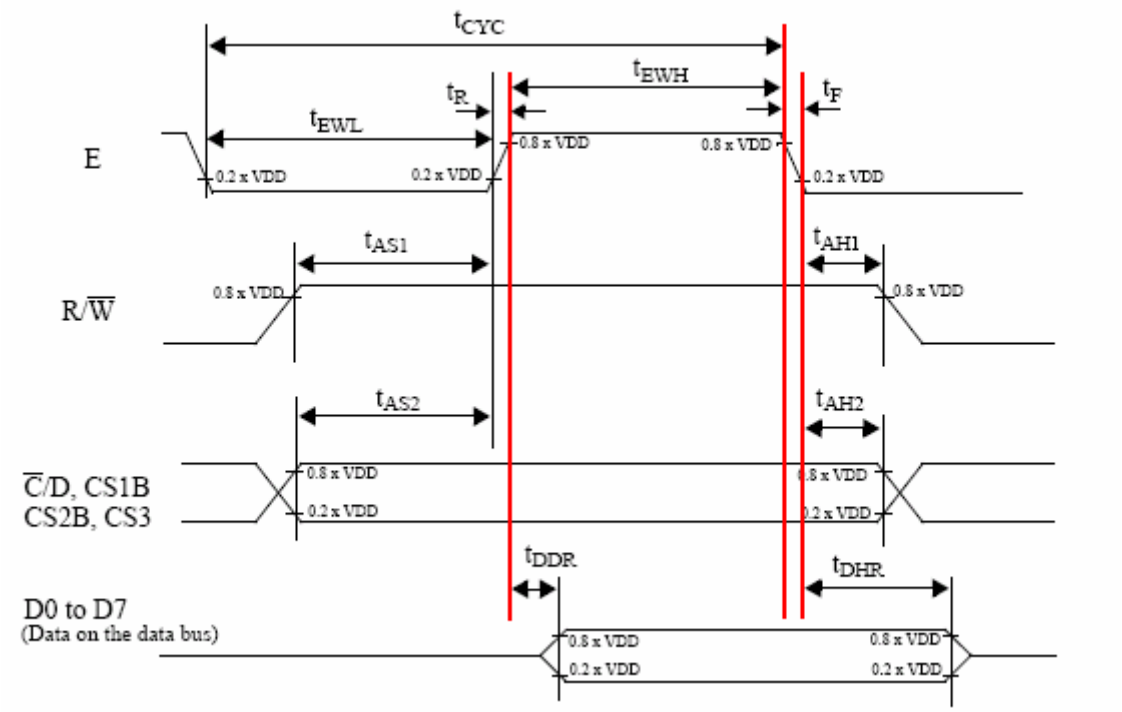
11-1 DC Characteristics(V_{DD}=5V,V_{ss}=0V,Ta=25°C)

Item	Symbol	Standard Value			Test Condition	Unit
		MIN	TYP	MAX		
Supply current for logic	V_{DD}	4.7	5.0	5.3	-------	V
Supply current for logic	I_{DD}	----	TBD	----	-------	mA
Supply current for LCD	V_{LCD}	12.7	12.9	13.0	25°C	

11-2 AC Characteristics

11-2-1. AC timing for writing to the SBN0064G (VDD = 5 V ; VSS = 0 V; Tamb = 25°C.)

symbol	parameter	min.	max.	test conditions	unit
t_{CYC}	Enable (E) cycle time	1000			ns
t_{EWL}	Enable (E) LOW width	450			
t_{EWH}	Enable (E) HIGH width	450			
t_R	Enable (R) rise time		20		
t_F	Enable (F) fall time		20		
t_{AS1}	Write set-up time	140			
t_{AH1}	Write hold time	10			
t_{AS2}	C/D, CS1B, CS2B, CS3 set-up time	140			
t_{AH2}	C/D, CS1B, CS2B, CS3 hold time	10			
t_{DSW}	Data setup time (on the data bus)	200		The loading on the data bus is shown in Fig. 18.	
t_{DHW}	Data hold time (on the data bus)	10			



11-2-2. AC timing for reading from the SBN0064G (VDD = 5 V; VSS = 0 V; Tamb = 25°C.)

symbol	parameter	min.	max.	test conditions	unit
t_{CYC}	Enable (E) cycle time	1000			ns
t_{EWL}	Enable (E) LOW width	450			
t_{EWH}	Enable (E) HIGH width	450			
t_R	Enable (R) rise time		20		
t_F	Enable (F) fall time		20		
t_{AS1}	READ set-up time	140			
t_{AH1}	READ hold time	20			
t_{AS2}	C/D, CS1B, CS2B, CS3 set-up time	140			
t_{AH2}	C/D, CS1B, CS2B, CS3 hold time	10			
t_{DDR}	Data delay time (on the data bus)	320		The loading on the data bus is shown in Fig. 18.	
t_{DHR}	Data hold time (on the data bus)	20