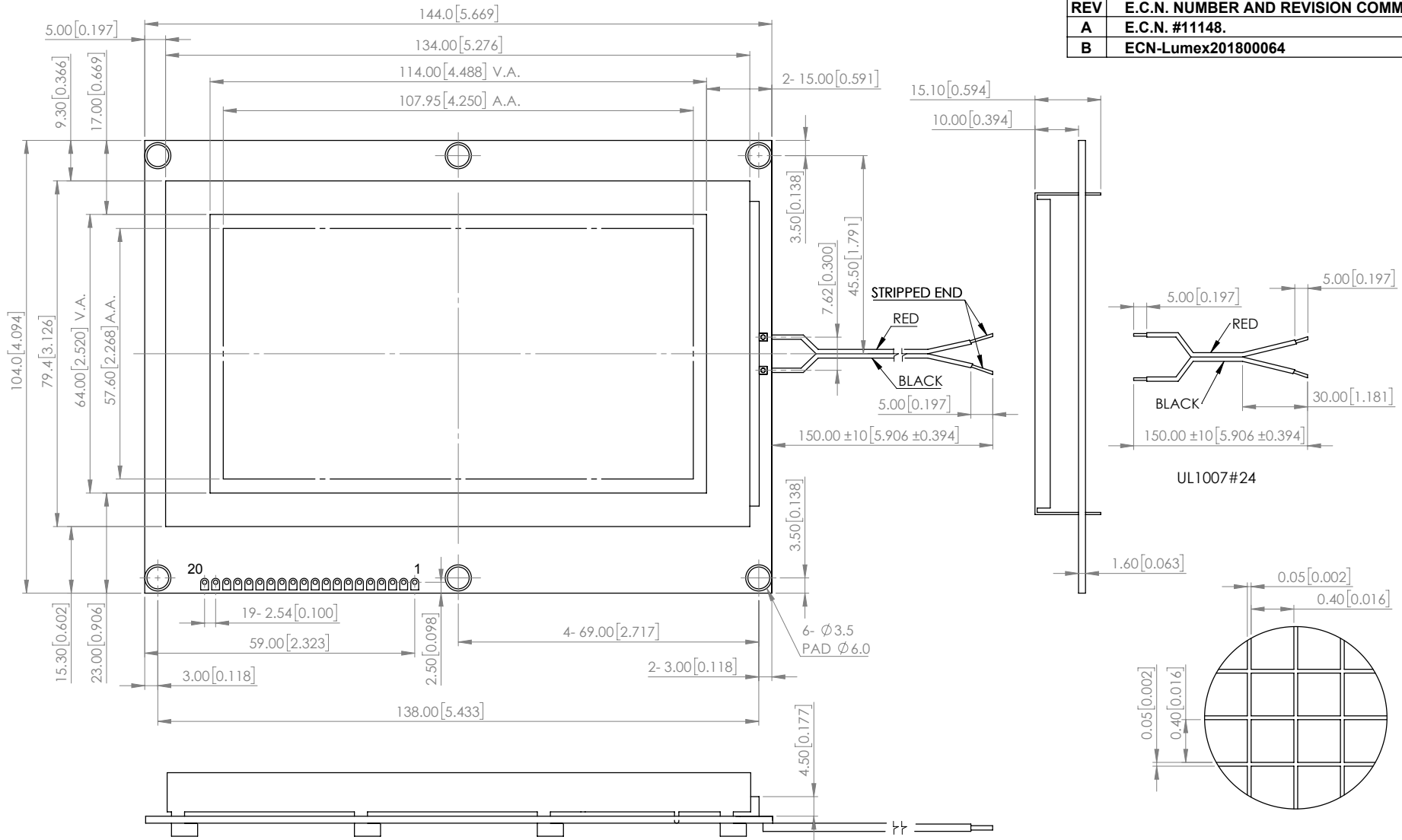


<b>PART NUMBER</b>	LCM-H240128GSN-1WC	<b>REV</b>	B
<b>REV</b>	<b>E.C.N. NUMBER AND REVISION COMMENTS</b>	<b>DATE</b>	
A	E.C.N. #11148.	04.30.18	
B	ECN-Lumex201800064	04.30.18	



PIN NO	SIGNAL
1	VSS
2	VDD
3	VO
4	C/D
5	/RD
6	/WR
7	DB0
8	DB1
9	DB2
10	DB3
11	DB4
12	DB5
13	DB6
14	DB7
15	/CE
16	/RST
17	VEE
18	MD
19	FS
20	NC

**NOTE:**  
1. RoHS COMPLIANT.

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144.0(W)×104.0(H)×15.1(D)mm, 240x128 DOT MATRIX GRAPHIC LCD MODULE, STN GRAY, NEGATIVE, 1/128 DUTY, LED BACKLIGHT.  
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DATE : 2018.04.30	DRAWN BY : C.C.
PAGE : 1 OF 4	CHKD BY : E.C.
SCALE : NTF	APRVD BY : G.Y.
UNIT : mm [INCH]	☞

**GENERAL SPECIFICATION**

ITEM	DESCRIPTION
LCD TYPE	STN, NEGATIVE
REAR POLARIZER	TRANSMISSIVE
BACKLIGHT TYPE	LED
BACKLIGHT COLOR	WHITE
TEMPERATURE RANGE	WIDE TEMP., 5V
VIEWING DIRECTION	12 O'CLOCK
VIEWING AREA	114.0 (W)mm x 64.0 (H)mm
MODULE SIZE	144.0 (W)mm x 104.0 (H)mm x 15.1 MAX(D)mm
PIXELS SIZE	0.40 x 0.40
PIXELS PITCH	0.45 x 0.45
DISPLAY FORMAT	240(W) x 128(H)
DUTY RATIO	1 / 128 DUTY

**ABSOLUTE MAXIMUM RATING**

(1) Electrical Absolute Ratings

ITEM	SYMBOL	MIN.	MAX.	UNIT
POWER SUPPLY FOR LOGIC	V <sub>DD</sub> -V <sub>SS</sub>	0	5.5	VOLT
POWER SUPPLY FOR LCD	V <sub>DD</sub> -V <sub>EE</sub>	0	22	VOLT
INPUT VOLTAGE	V <sub>I</sub>	V <sub>SS</sub>	V <sub>DD</sub>	VOLT
LED POWER DISSIPATION	P <sub>AD</sub>	-	720	mW
LED FORWARD CURRENT	I <sub>AF</sub>	-	200	mA
LED REVERSE VOLTAGE	V <sub>R</sub>	-	5	V

(2) Environmental Absolute Maximum Ratings

ITEM	WIDE TEMPERATURE			
	OPERATING		STORAGE	
	MIN.	MAX.	MIN.	MAX.
AMBIENT TEMPERATURE	-10 °C	+60 °C	-20 °C	+70 °C
HUMIDITY (WITHOUT CONDENSATION)	NOTE 1, 2		NOTE 1, 3	

Note 1: Background color changes slightly depending on ambient temperature.


This phenomenon is reversible.

Note 2: Ta ≤ 70°C: 75RH max

Ta > 70°C: absolute humidity must be lower than the humidity of 75%RH at 70°C

Note 3: Ta at -30°C will be <48hrs, at 80 °C will be <120hrs when humidity is higher than 75%.

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		UNIT : mm [INCH]		


**ELECTRICAL CHARACTERISTICS**

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY FOR LOGIC	VDD-VSS	-	4.5	5.0	5.5	VOLT
POWER SUPPLY FOR LCD	VEE-VSS	-	-14.2	-15.0	-15.9	VOLT
INPUT VOLTAGE	VIL	L LEVEL	0	-	0.8	VOLT
	VIH	H LEVEL	-2.2 VDD	-	VDD	VOLT
	VDD-VO	Ta=25°C	16.9	18.0	19.2	VOLT
POWER SUPPLY CURRENT FOR LCM	IDD	VDD=5.0V VDD-VO=18.0V	-	17.5	23.0	mA
	IOUT		-	5.0	-	
THE BRIGHTNESS OF BACKLIGHT	L	If=160mA	160	200	-	cd/m <sup>2</sup>
PEAK EMISSION WAVELENGTH	λP	If=160mA	X=0.24 Y=0.22	X=0.28 Y=0.25	X=0.30 Y=0.29	nm
LED FORWARD VOLTAGE	VF	If=160mA	-	3.2	3.4	VOLT

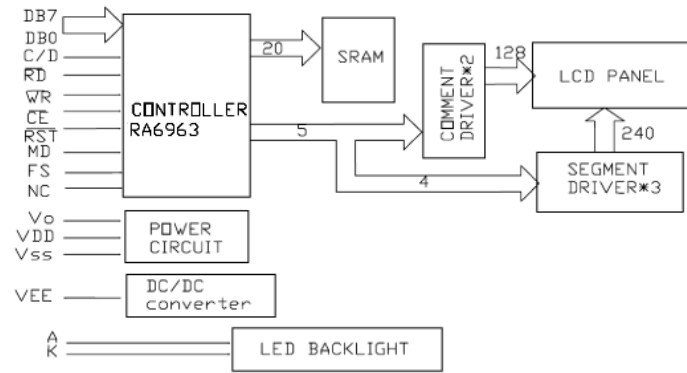
**ELECTRICAL CHARACTERISTICS**

PIN NO.	PIN OUT	FUNCTION DESCRIPTION
1	VSS	Power Supply Ground
2	VDD	Power Supply Voltage
3	Vo	Contrast Adjustment Voltage
4	C/D	WR='L', C/D='H': Command Write WR='L', C/D='L': Data Write RD='L', C/D='H': Status Read RD='L', C/D='L': Data Read
5	/RD	Data Read
6	/WR	Data Write
7	DB0	Data Bit 0
8	DB1	Data Bit 1
9	DB2	Data Bit 2
10	DB3	Data Bit 3
11	DB4	Data Bit 4
12	DB5	Data Bit 5
13	DB6	Data Bit 6
14	DB7	Data Bit 7
15	/CE	Enable Signal
16	/RST	Reset Signal
17	VEE	No Connection
18	MD	H : 32/L : 40 Select of Columns
19	FS	H : 6*8/L : 8*8 Select of Font
20	NC	No Connection

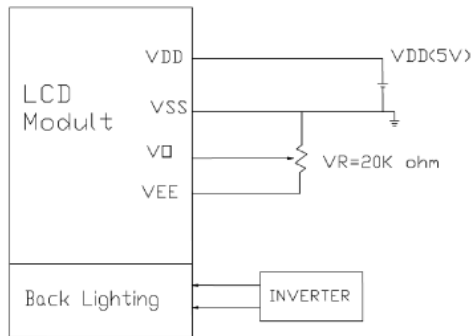
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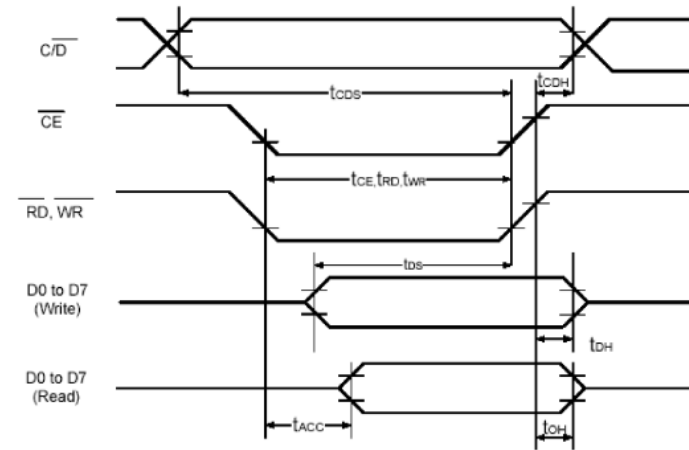
**BLOCK DIAGRAM**



**POWER SUPPLY**



**TIMING CHARACTERISTIC**



ITEM	SYMBOL	TEST CONDITIONS	MIN	MAX	UNIT
C/D Set Up Time	t <sub>CDS</sub>	--	100	--	ns
C/D Hold Time	t <sub>CDH</sub>	--	10	--	ns
/CE, /RD, /WR Pulse Width	t <sub>CE</sub> , t <sub>RD</sub> , t <sub>WR</sub>	--	80	--	ns
Data Set Up Time	t <sub>DS</sub>	--	80	--	ns
Data Hold Time	t <sub>DH</sub>	--	40	--	ns
Access Time	t <sub>ACC</sub>	--	--	150	ns
Output Hold Time	t <sub>OH</sub>	--	10	50	ns

\*V<sub>DD</sub>=+5V±5%, GND=0V, Ta=-20~70 degree

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