



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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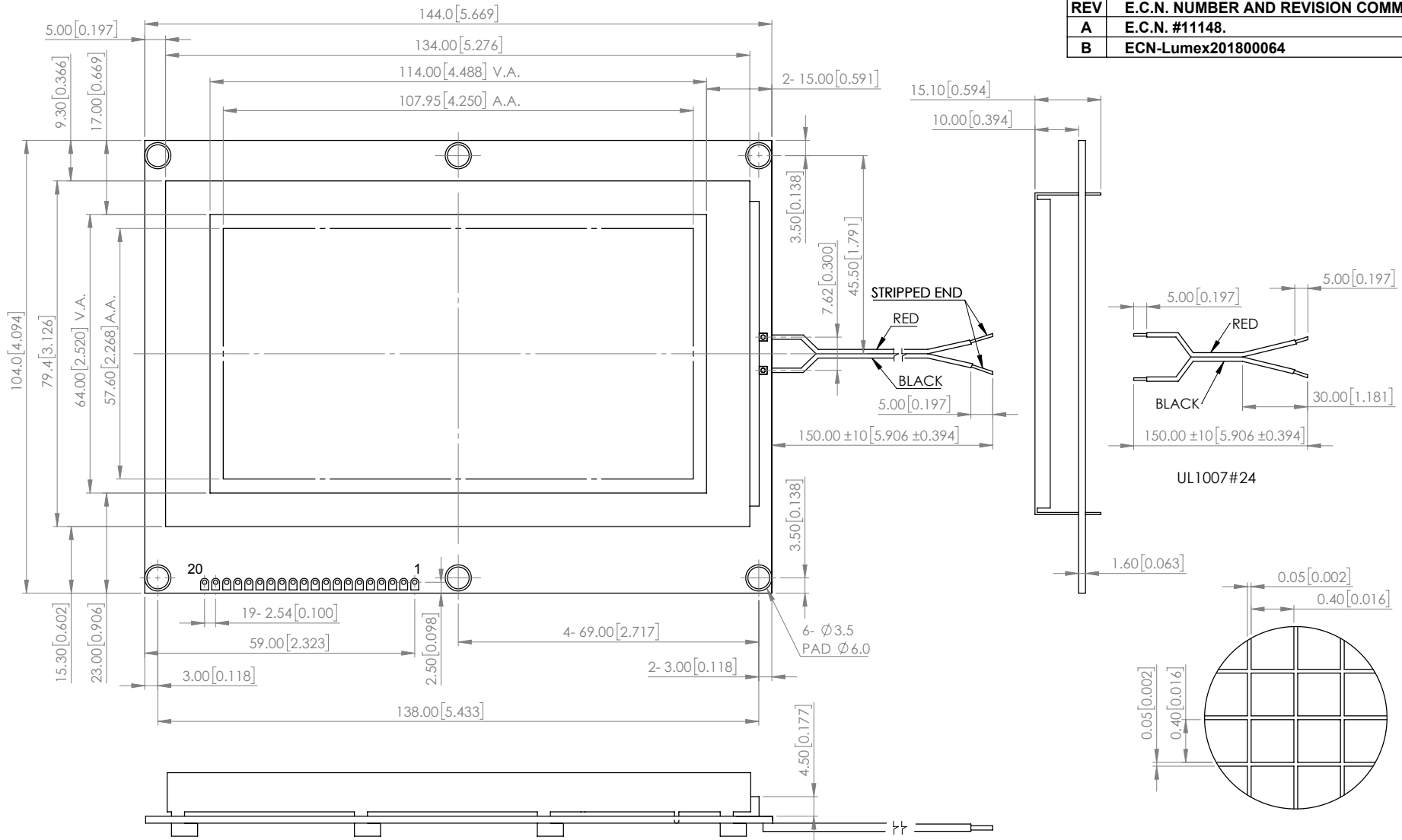
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<b>PART NUMBER</b>	LCM-H240128GSN-1WC	<b>REV</b>	B
<b>REV</b>	<b>E.C.N. NUMBER AND REVISION COMMENTS</b>	<b>DATE</b>	
A	E.C.N. #11148.	04.30.18	
B	ECN-Lumex201800064	04.30.18	



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.

\*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN=<sup>+DECIMAL PRECISION</sup><sub>-0.00</sub> MAX.=<sup>+0.00</sup><sub>-DECIMAL PRECISION</sub>



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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.  
\*\*THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE DUE TO NEW MATERIALS OR PRODUCT IMPROVEMENT.\*\*  
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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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PAGE : 2 OF 4	CHKD BY : E.C.
SCALE : NTF	APRVD BY : G.Y.
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

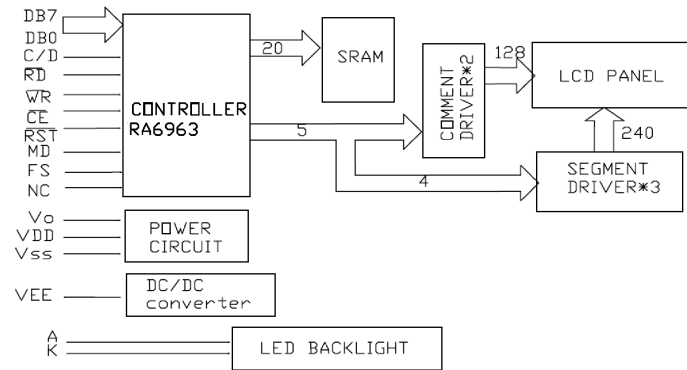
**ELECTRICAL CHARACTERISTICS**

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

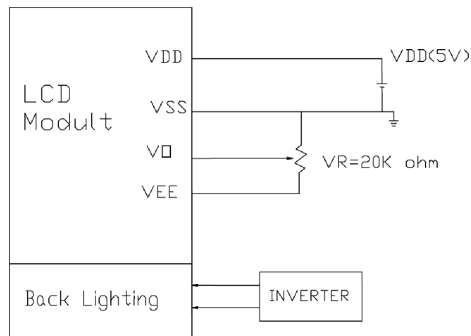
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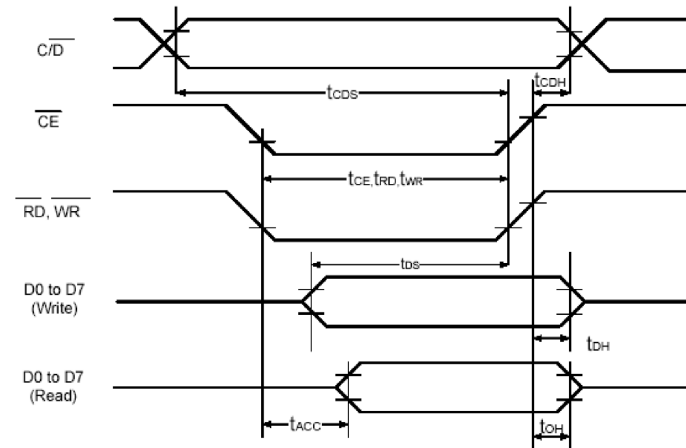
**BLOCK DIAGRAM**



**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

\*VDD=+5V±5%, GND=0V, Ta=-20~70 degree

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