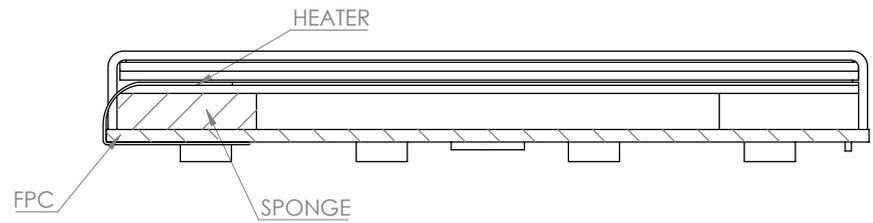
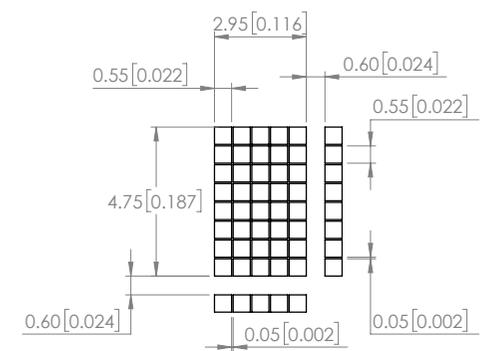
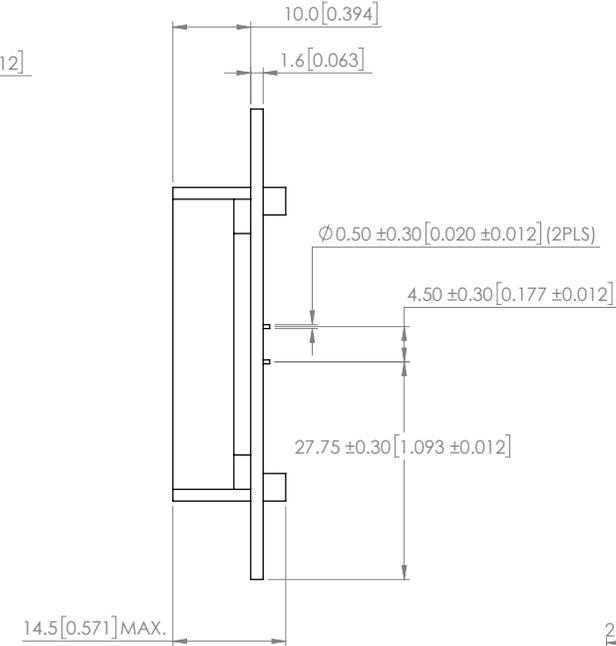
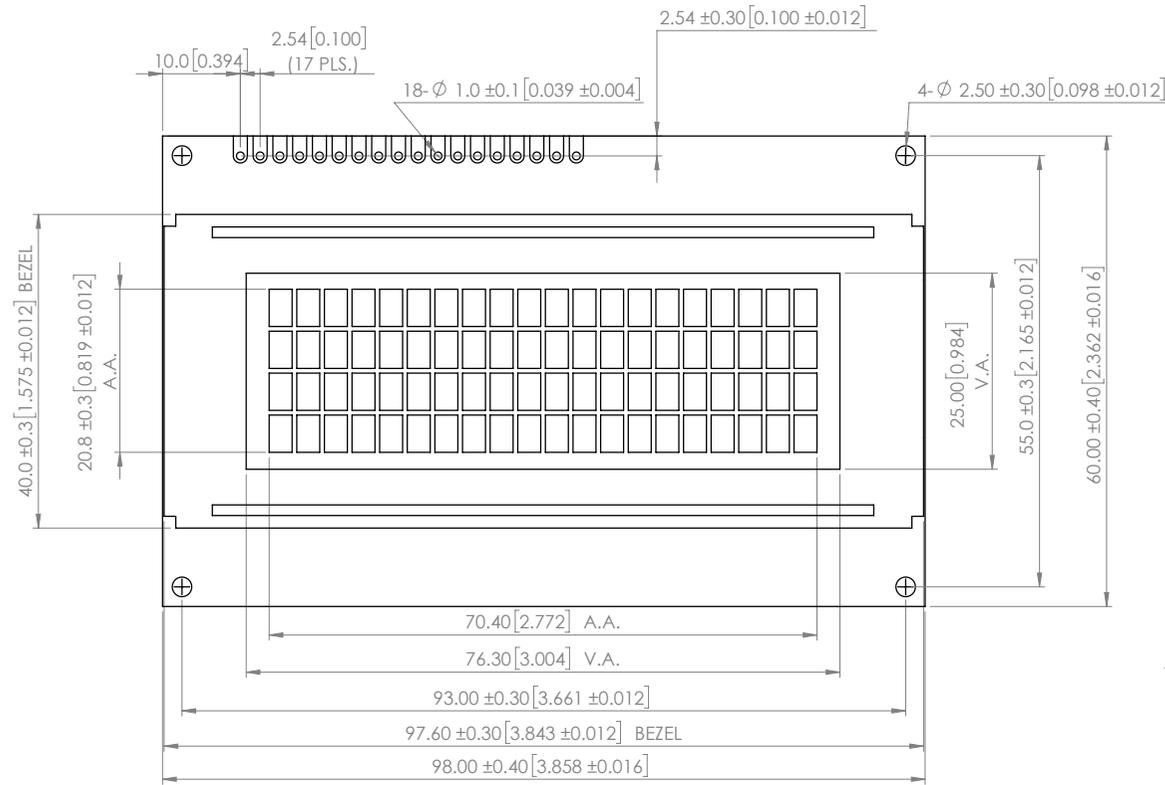


PART NUMBER	LCR-U02004DSF-WH	REV	B
DATE	E.C.N. NUMBER AND REVISION COMMENTS	REV	
05.20.10	E.C.N. #11642	A	
04.27.18	ECN-Lumex201800063	B	



CAUTION: STATIC SENSITIVE DEVICE
 FOLLOW PROPER E.S.D. HANDLING PROCEDURES
 WHEN WORKING WITH THIS PART.

*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= +DECIMAL PRECISION -0.00, MAX= +0.00 -DECIMAL PRECISION

	425 N. GARY AVE. CAROL STREAM, IL 60188 PHONE : 800-278-5666 FAX : 630-315-2150 WEB : WWW.LUMEX.COM	20 x 4 CHARACTER LCD MODULE, STN GRAY, W/ HEATER, TRANSFLECTIVE, WHITE LED BACKLIGHT, 6:00 VIEW.	DATE : 2018.04.27 DRAWN BY : K.Y.
	THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE DUE TO NEW MATERIALS OR PRODUCT IMPROVEMENT.		PAGE : 1 OF 3 CHKD BY : E.C.
	CONFIDENTIAL INFORMATION THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THIRD PARTIES.		SCALE : NTF APRVD BY : G.Y.
			UNIT : mm [INCH]

GENERAL SPECIFICATION

ITEM	DESCRIPTION
LCD TYPE	STN GREY, POSITIVE
REAR POLARIZER	TRANSFLECTIVE
BACKLIGHT TYPE	LED
BACKLIGHT COLOR	WHITE
TEMPERATURE RANGE	ULTRA HIGH TEMP.,5V
VIEWING DIRECTION	6 O'CLOCK
VIEWING AREA	76.3 (W)mm x 25 (H)mm
MODULE SIZE	98.0(L)mm x60.0 (W)mm x 14.5 MAX(T)mm
PIXELS SIZE	0.55(W)mm x 0.55(H)mm
PIXELS PITCH	0.60(W)mm x 0.60(H)mm
DISPLAY FORMAT	20 x 4
DUTY RATIO	1 / 16 DUTY,1/5 BIAS

ABSOLUTE MAXIMUM RATING

(1) Electrical Absolute Ratings

ITEM	SYMBOL	MIN.	MAX.	UNIT
POWER SUPPLY FOR LOGIC	VDD-VSS	-0.3	6.0	VOLT
POWER SUPPLY FOR LCD	Vo	VDD-10.0	VDD+0.3	VOLT
INPUT VOLTAGE	Vi	-0.3	VDD+0.3	VOLT

(2) Environmental Absolute Maximum Ratings

ITEM	WIDE TEMPERATURE			
	OPERATING		STORAGE	
	MIN.	MAX.	MIN.	MAX.
AMBIENT TEMPERATURE	-40 °C	+85 °C	-40 °C	+85 °C

Note:

The performance(Both response time & contrast level) under two extreme temperatures is not equivalent to thr one at room temperature.

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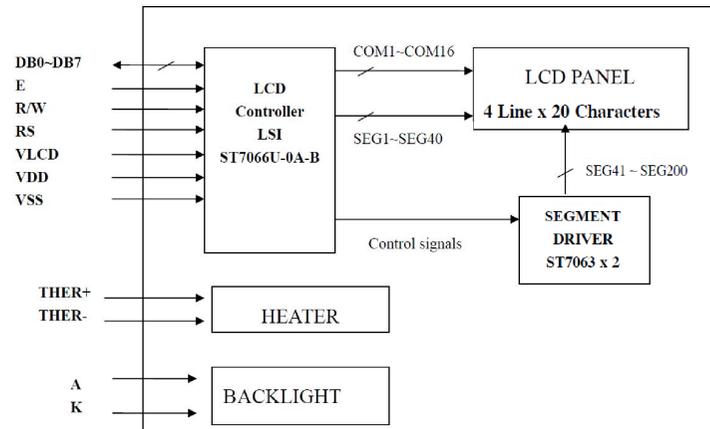
ELECTRICAL CHARACTERISTICS

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
POWER SUPPLY FOR LOGIC	VDD	-	4.5	5.0	5.5	VOLT
POWER SUPPLY FOR LCD	VLCD	VDD-V5	4.2	4.5	4.8	VOLT
BACKLIGHT FORWARD VOLTAGE	Vf	If=30mA	-	3.3	-	V
BACKLIGHT FORWARD CURRENT	If	-	-	30	40	mA
BACKLIGHT POWER DISSIPATION	PD	-	-	99	-	mW
BACKLIGHT COLOR COORDINATE	X	-	0.24	-	0.33	--
	Y	-	0.24	-	0.33	--
HEATER FORWARD VOLTAGE	VfH	-	-	12	20	V
HEATER FORWARD RESISTANCE	-	-	70	120	170	ohm
HEATER FORWARD CURRENT	IH	-	100	150	200	mA
HEATER FORWARD POWER	PH	-	0.5	1.0	1.5	W

ELECTRICAL CHARACTERISTICS

PIN NO.	PIN OUT	FUNCTION DESCRIPTION
1	VSS	Ground
2	VDD	Power Supply Voltage
3	V0	Power Supply for LCD
4	RS	Select Display Data or Instructions
5	R/W	Read or Write Select Signal
6	E	Read / Write Enable Signal
7	DB0	Display Data Signal
8	DB1	
9	DB2	
10	DB3	
11	DB4	
12	DB5	
13	DB6	
14	DB7	
15	LED+(A)	Anode of Backlight
16	LED-(K)	Cathode of Backlight
17	VHTR+	Power Supply(+) for a Heater
18	VHTR-	Power Supply(-) for a Heater

BLOCK DIAGRAM



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