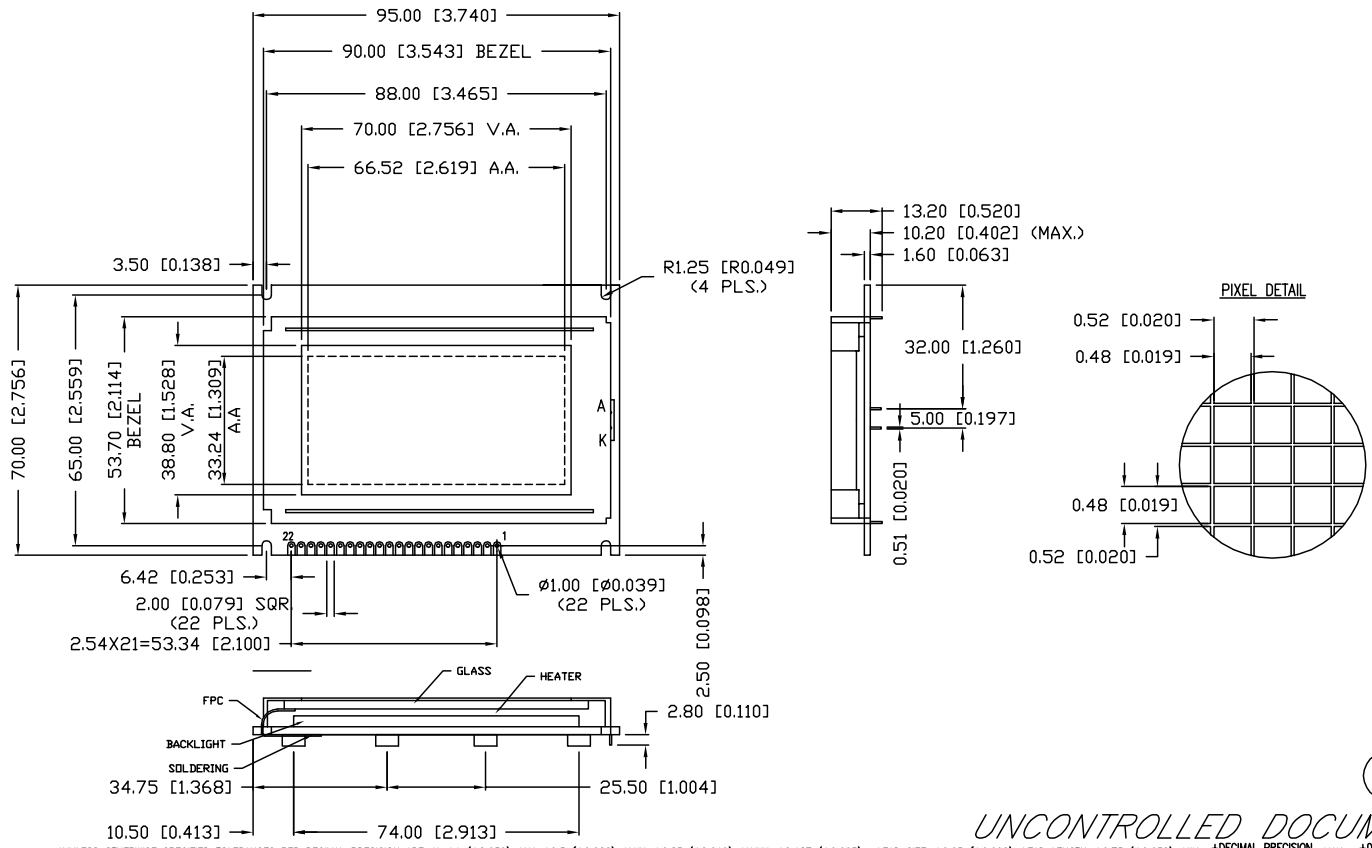


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*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN.= +DECIMAL PRECISION MAX.= +0.00 -DECIMAL PRECISION

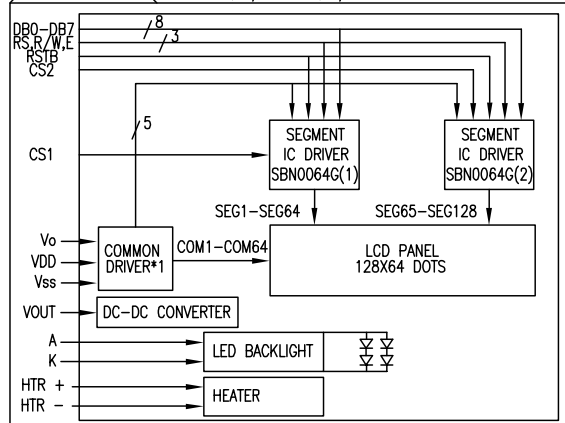
REV.	PART NUMBER LCR-U12864GSF-WH	<p>CONFIDENTIAL INFORMATION</p> <p>THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THIRD PARTIES.</p> <p>RELIABILITY NOTE</p> <p>OUR MANY YEARS OF EXPERIENCE DATA ACCUMULATION INDICATE THAT SOLDER HEAT IS A MAJOR CAUSE OF EARLY AND FUTURE FAILURE. PLEASE PAY ATTENTION TO YOUR SOLDERING PROCESS.</p>	<p>LUMEX</p> <p>Creating LED and LCD Solutions Together™</p>	<p>290 E. HELEN ROAD PALATINE, IL 60067-6976 PHONE: +1.847.359.2790 US WEB: www.lumex.com TW WEB: www.lumex.com.tw</p>
<p>128 x 64 GRAPHIC LCD MODULE, STN GRAY, -40°C to +85°C OPERATING TEMP, W/ HEATER, TRANSFLECTIVE, WHITE LED BACKLIGHT, 6:00 VIEW.</p>		<p>DRAWN BY: JN</p>	<p>CHECKED BY:</p>	<p>APPROVED BY:</p>
				<p>DATE: 11.24.09 PAGE: 1 OF 1 SCALE: N/A</p>



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BLOCK DIAGRAM 128 x 64, 1/64 DUTY, 1/9 BIAS



PIN CONFIGURATION

PIN NO.	SYMBOL	FUNCTION	
1	V _{SS}	POWER SUPPLY	
2	V _{DD}		GND (0V)
3	V _O		5V FOR LCD DRIVE
4	RS	REGISTER SELECT RS=0...INSTRUCTION REGISTER RS=1...DATA REGISTER	
5	R/W	READ/WRITE R/W=0...READ R/W=1...WRITE	
6	E	CHIP ENABLE SIGNAL	
7-14	DB0~DB7	DISPLAY DATA SIGNAL	
15	CS1	CHIP SELECT SIGNAL FOR SBN0064G(1)	
16	CS2	CHIP SELECT SIGNAL FOR SBN0064G(2)	
17	RSTB	CONTROL RESET (MODULE RESET)	
18	VOUT	OUTPUT VOTAGE FOR LCD DRIVING, -10.0V.	
19	LED- (A)	ANODE OF LED	
20	LED- (K)	CATHODE OF LED	
21	HTR +	+12V	
22	HTR -	GND (0V)	

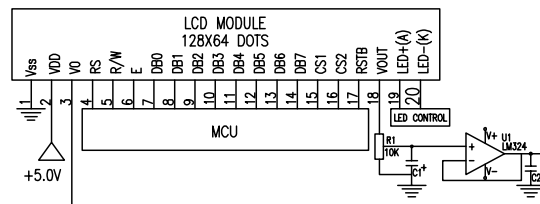
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NOTES:

1. R1 IS THE CONTRAST RESISTOR.
2. VOUT=-10.0V
3. ADJUST R1 TO GET GOOD CONTRAST. TYP: V0 IS -7.9V.



ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
			MIN	MAX	
SUPPLY VOLTAGE FOR LOGIC	V _{DD} -V _{SS}	T _a =25°C	4.7	5.3	V
SUPPLY VOLTAGE FOR LCD DRIVE	V _{DD} -V _O	-	0	15	V
INPUT VOLTAGE	V _I	T _a =25°C	V _{SS}	V _{DD}	V
OPERATING TEMPERATURE	T _{opr}	W/ HEATER	-40	+85	°C
STORAGE TEMPERATURE	T _{stg}	W/ HEATER	-40	+85	°C

ELECTRICAL CHARACTERISTICS

V_{DD}=4.7V to 5.3V, T_A=25°C

ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT	
			MIN.	TYP.	MAX.		
SUPPLY VOLTAGE FOR LOGIC	V _{DD} -V _{SS}	-	4.5	5.0	5.5	V	
SUPPLY VOLTAGE FOR LCD DRIVE	V _{DD} -V _O	V _{DD} =5V	12.6	12.9	13.2	V	
SUPPLY CURRENT FOR LOGIC	I _{DD}	V _{DD} =5V	-	8.2	13.0	mA	
LED BACKLIGHT	VOLTAGE	V _f	I _f =30mA	-	6.4	7.2	V
	CURRENT	I _f	-	-	30	-	mA
	POWER CONSUMPTION	PD	-	-	192	-	mW
	LUMINOUS	L	-	70	-	-	cd/m ²
	COLOR COORDINATE	X Y	WHITE	.260	-	.330	
HEATER	VOLTAGE	V _{fH}	-	-	12	-	V
	RESISTANCE	-	-	-	20	-	OHM
	CURRENT	I _H	-	-	0.6	-	AMP
	POWER	PH	-	-	7.2	-	W

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