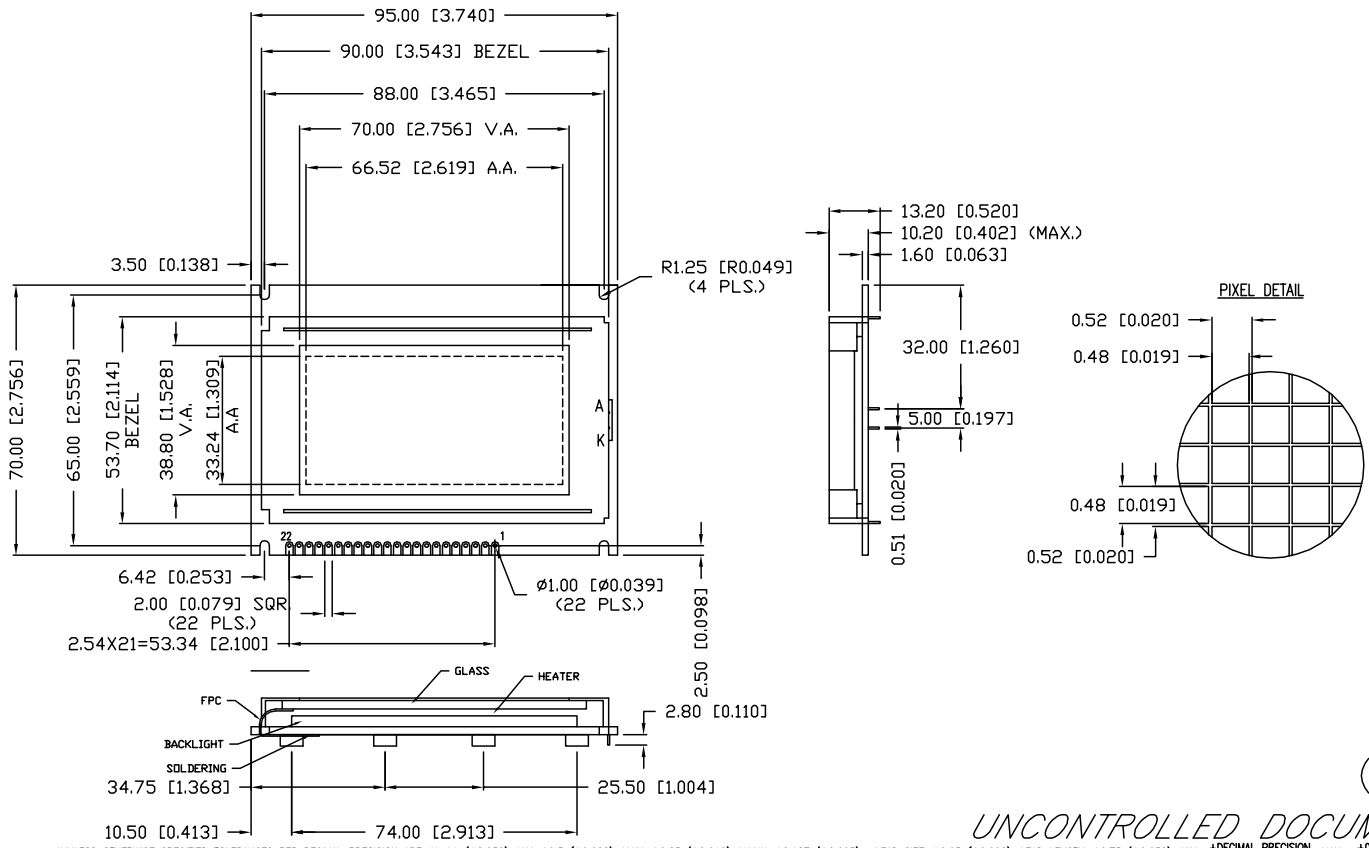


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\*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), X.X=±0.5 (±0.020), X.XX=±0.25 (±0.010), X.XXX=±0.127 (±0.005). LEAD SIZE=±0.05 (±0.002), LEAD LENGTH=±0.75 (±0.030). MIN.=<sup>+DECIMAL PRECISION</sup>-0.00 MAX.=<sup>+0.00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

REV.	PART NUMBER LCR-U12864GSF-WH
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128 x 64 GRAPHIC LCD MODULE, STN GRAY,  
-40°C to +85°C OPERATING TEMP, W/ HEATER,  
TRANSFLECTIVE, WHITE LED BACKLIGHT, 6:00 VIEW.

**RELIABILITY NOTE**  
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.

DRAWN BY:  
JN

CHECKED BY:

APPROVED BY:

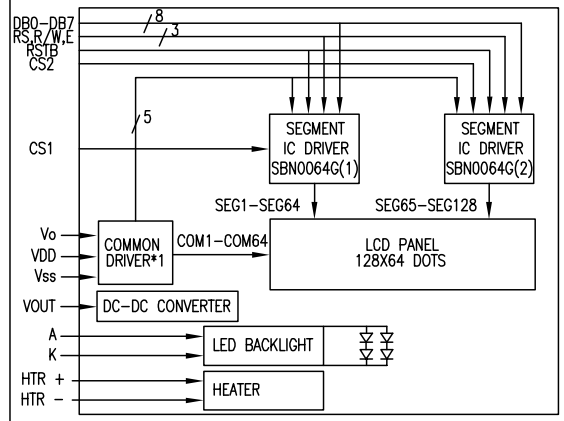
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SCALE: N/A



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



PIN CONFIGURATION

PIN NO.	SYMBOL	FUNCTION	
1	V <sub>SS</sub>	POWER SUPPLY	
2	V <sub>DD</sub>		GND (0V)
3	V <sub>O</sub>		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)	

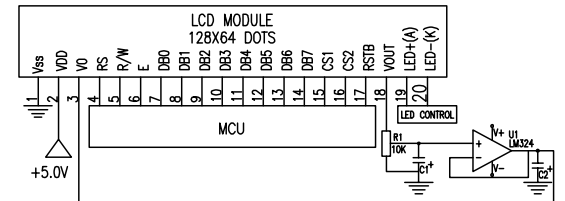
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PART NUMBER  
LCR-U12864GSF-WH

REV.

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 <sub>DD</sub> -V <sub>SS</sub>	T <sub>a</sub> =25°C	4.7	5.3	V
SUPPLY VOLTAGE FOR LCD DRIVE	V <sub>DD</sub> -V <sub>O</sub>	-	0	15	V
INPUT VOLTAGE	V <sub>I</sub>	T <sub>a</sub> =25°C	V <sub>SS</sub>	V <sub>DD</sub>	V
OPERATING TEMPERATURE	T <sub>opr</sub>	W/ HEATER	-40	+85	°C
STORAGE TEMPERATURE	T <sub>stg</sub>	W/ HEATER	-40	+85	°C

ELECTRICAL CHARACTERISTICS

V<sub>DD</sub>=4.7V to 5.3V, T<sub>A</sub>=25°C

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

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128 x 64 GRAPHIC LCD MODULE, STN GRAY, -40°C to +85°C OPERATING TEMP, W/ HEATER, TRANSFLECTIVE, WHITE LED BACKLIGHT, 6:00 VIEW.		RELIABILITY NOTE 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.	DRAWN BY: JN	CHECKED BY:
			APPROVED BY:	DATE: 11.24.09 PAGE: 2 OF 2 SCALE: N/A