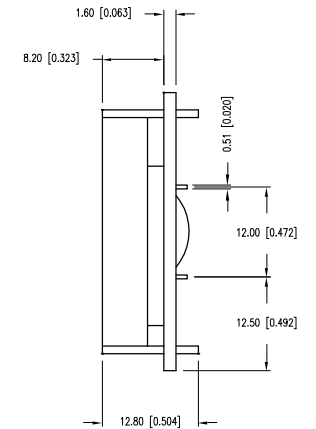




LUMEX®
Creating LED and LCD Solutions Together™

20 x 2 CHARACTER LCD MODULE, STN GRAY, W/ HEATER, TRANSFLECTIVE, WHITE LED BACKLIGHT, 6:00 VIEW.

****THE SPECIFICATIONS MAY CHANGE AT ANY TIME WITHOUT NOTICE DUE TO NEW MATERIALS OR PRODUCT IMPROVEMENT.****

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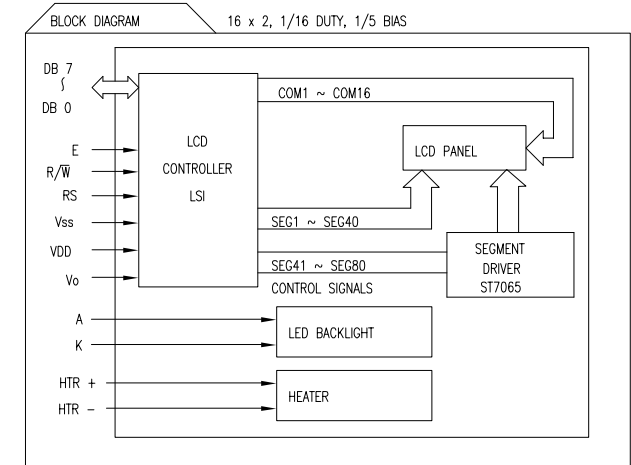
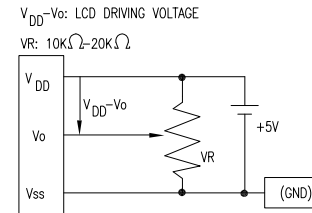
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DATE: 11.17.09	DRAWN BY: JN
PAGE: 1 OF 2	CHKD BY: JD
SCALE: N/A	APRVD BY: SA
UNIT: mm [INCH]	

PART NUMBER	LCR-U02002DSF-WH	REV.	A
DATE	E.C.N. NUMBER AND REVISION COMMENTS		REV.
	SEE PAGE 1		

PIN CONFIGURATION				
PIN NO.	SYMBOL	LEVEL	FUNCTION	
1	V _{SS}	—	POWER SUPPLY	GND (0V)
2	V _{DD}	—		5V
3	V _O	—		FOR LCD DRIVE
4	RS	H/L	REGISTER SELECT SIGNAL H: DATA INPUT L: INSTRUCTION INPUT	
5	R/W	H/L	H: DATA READ (MODULE-->MPU) L: DATA WRITE (MODULE<--MPU)	
6	E	H,H->L	ENABLE	
7~14	DB0~DB7	H/L	DATA BUS—SOFTWARE SELECTABLE 4 OR 8 BIT MODE.	
15	A	—	ANODE	LED BACKLIGHT
16	K	—	CATHODE	LED BACKLIGHT
17	HTR +	—	+12V	
18	HTR —	—	GND (0V)	



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}	—	—	5.0	—	V
SUPPLY CURRENT FOR LOGIC	I _{DD}	V _{DD} =5V	—	1.6	2.5	mA
INPUT VOLTAGE	HIGH LOW	V _{IH}	—	2.2	—	V _{DD} V
		V _{IL}	—	0	—	0.6 V
OUTPUT VOLTAGE	HIGH LOW	V _{OH}	—	2.4	—	V
		V _{OL}	—	—	0.4	V
LED BACKLIGHT	VOLTAGE	V _f	If=15mA	—	6.6	7.2 V
	CURRENT	I _f	—	—	15	mA
	POWER CONSUMPTION	P _D	—	—	99	mW
	LUMINOUS	L	If=15mA	70	—	— cd/m ²
	COLOR COORDINATE	X	WHITE	.240	—	.330
		Y		.240	—	.330
HEATER	VOLTAGE	V _{fH}	—	—	12	20 V
	RESISTANCE	—	—	50	100	150 OHM
	CURRENT	I _H	—	100	150	200 mA
	POWER	P _H	—	1.0	1.5	2.0 W

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	—	4.2@50°C	4.8@0°C	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

*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