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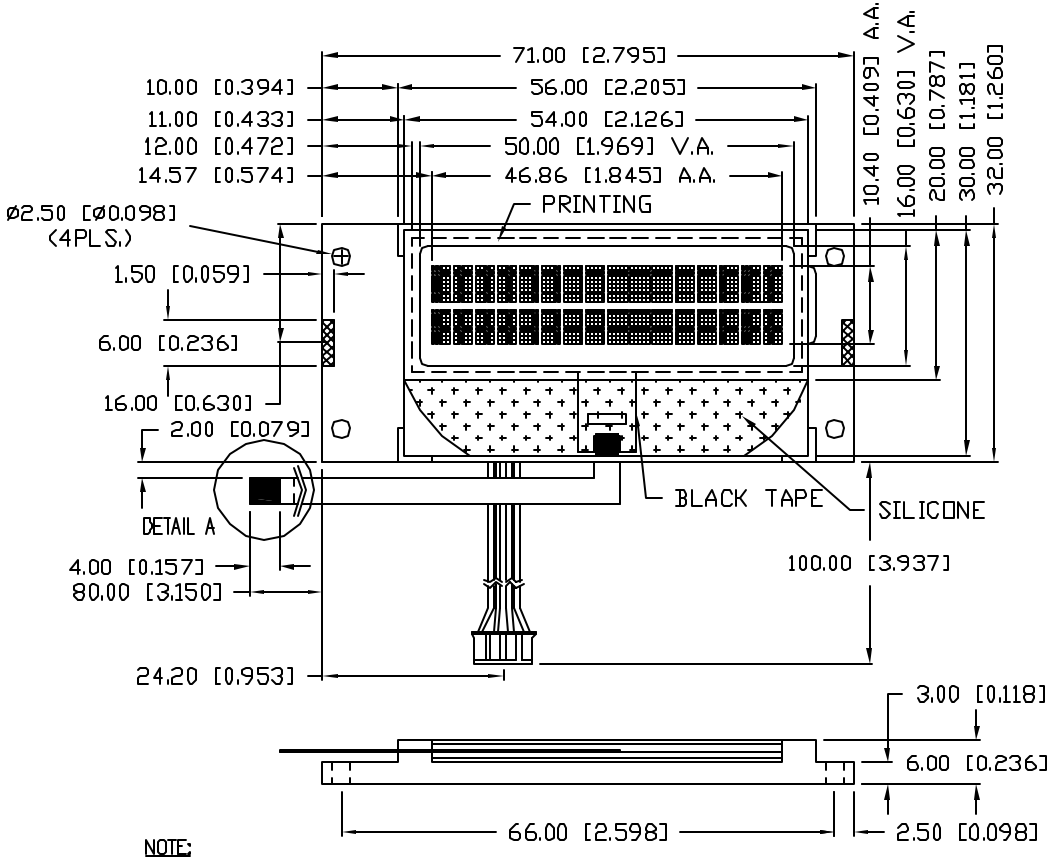
	LCM-H01602D39868LC	

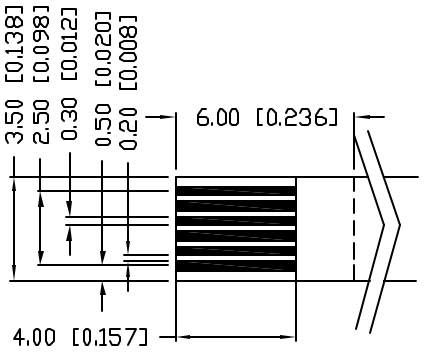
PRELIMINARY IN P/N DIR

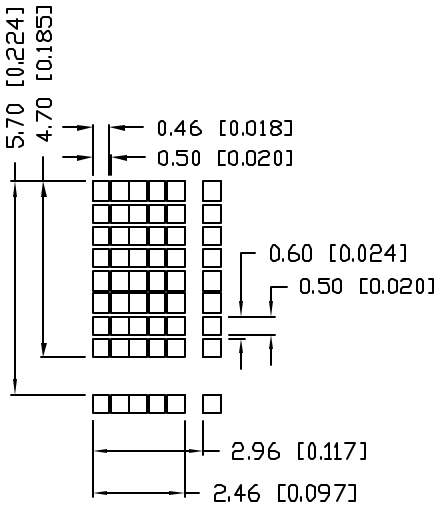


NOTE:

1. BACKLIGHT DETAILS ARE ON PAGE 3.

DETAIL A





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REV.	PART NUMBER	CONFIDENTIAL INFORMATION	LUMEX	290 E. HELEN ROAD PALATINE, IL 60067-6976 PHONE: +1.847.359.2790 US WEB: www.lumex.com TW WEB: www.lumex.com.tw
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16 X 2 COG LCD CHARACTER MODULE,
WHITE LED BACKLIGHT, DFSTN NEGATIVE IMAGE,
EXTENDED OPERATING TEMPERATURE, 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.

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ABSOLUTE MAXIMUM RATINGS

SYMBOL	ITEM	STANDARD VALUE		UNIT
		MIN	MAX	
V_{DD}	POWER SUPPLY VOLTAGE	-0.5	+6.5	V
V_{LCD}	LCD DRIVER VOLTAGE	-0.5	+7.5	V
V_{IN}	INPUT VOLTAGE	-0.5	V_{DD}+0.5	V
Topr	OPERATING TEMPERATURE	-30	70	℃
Tstg	STORAGE TEMPERATURE	-40	85	℃

ELECTRICAL CHARACTERISTICS T_A=25℃

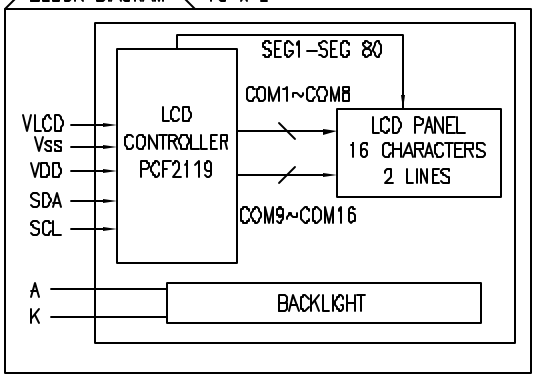
SYMBOL	PARAMETER	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
V_{DD}	OPERATING VOLTAGE	-	3.0	3.3	3.6	V
I_{DD}	SUPPLY CURRENT	-	-	TBD	-	mA
V_{LCD}	LCD DRIVING VOLTAGE	V_{LCD}-V_{SS}	4.5	4.7	4.9	V
f_{FR}	LCD FRAME FREQUENCY (INTERNAL CLOCK)	V_{DD}=5.0 V	45	95	147	Hz
f_{OSC}	OSCILLATOR FREQUENCY (NOT AVALIBLE AT ANY PAD)	-	140	250	450	kHz
$f_{OSC(EXT)}$	EXTERNAL CLOCK FREQUENCY	-	140	-	450	kHz
t_{OSCST}	OSCILLATOR START-UP TIME AFTER POWER-DOWN	NOTE 1	-	200	300	us
f_{SCL}	SCL CLOCK FREQUENCY	-	-	-	400	kHz
t_{LOW}	SCL CLOCK LOW PERIOD	-	1.3	-	-	us
t_{HIGH}	SCL CLOCK HIGH PERIOD	-	0.6	-	-	us
$t_{SU;DAT}$	DATA SET-UP TIME	-	100	-	-	ns
$t_{HD;DAT}$	DATA HOLD TIME	-	0	-	-	ns
tr	SLC,SDA RISE TIME	NOTE 1	15+0.1C_B	-	300	ns
tf	SLC,SDA FALL TIME	NOTE 1	15+0.1C_B	-	300	ns
C_B	CAPACITIE BUS LINE LOAD	-	-	-	400	pF
$t_{SU;SAT}$	SET-UP TIME FOR A REPEATED START CONDITION	-	0.6	-	-	us
$t_{HD;SAT}$	START CONDITION HOLD TIME	-	0.6	-	-	us
$t_{SU;STO}$	SET-UP TIME FOR STOP CONDITION	-	0.6	-	-	us
t_{SW}	TOLERABLE SPINKE WIDTH ON BUS	-	-	-	50	ns
t_{BUF}	BUS FREE TIME BERTWEEN STOP AND START CONDITION	-	1.3	-	-	us

NOTE1:
ALL TIMING VALUES ARE VALID WITHIN THE OPERATING SUPPLY VOLTAGE AND AMBIENT TEMPERATURE RANGE AND ARE REFERENCED TO V_{IL} AND V_{IH} WITH AN INPUT SWING OF V_{SS} TO V_{DD}.

PIN CONFIGURATION

PIN NO.	SYMBOL	FUNCTION
1	VLCD	SUPPLY VOLTAGE FOR LCD.
2	Vss	GROUND (0V)
3	V_{DD}	SUPPLY VOLTAGE FOR LCXXIC (+3.3V)
4	SDA	I^2C-BUS SERIAL DATA INPUT/OUTPUT
5	PD	PD SELECTS POWER DOWN MODE; PD=0 FOR NORMAL OPERATION.
6	SCL	I^2C-BUS SERIAL CLOCK INPUT
A	SUPPLY VOLTAGE FOR LED+	
K1	SUPPLY VOLTAGE FOR LED-	
K2	SUPPLY VOLTAGE FOR LED-	
K3	SUPPLY VOLTAGE FOR LED-	

BLOCK DIAGRAM 16 x 2



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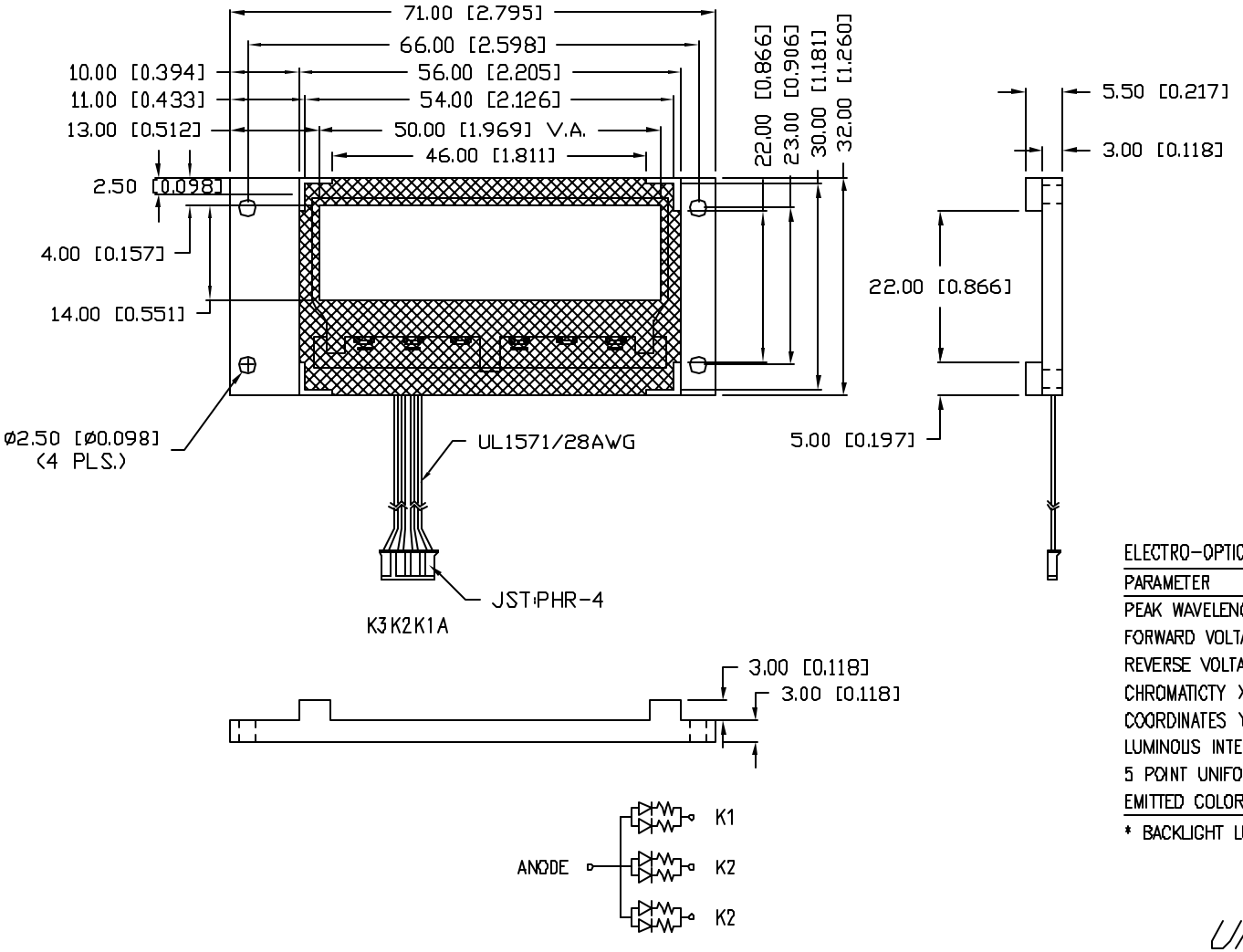

ELECTRO-OPTICAL CHARACTERISTICS T_A=25°C PER-MODULE I_f= 30 mA x3

PARAMETER	MIN	TYP	MAX	UNITS	TEST COND
PEAK WAVELENGTH		–		nm	
FORWARD VOLTAGE		4.0		V_f	
REVERSE VOLTAGE	3			V_r	I_r= 15µA
CHROMATICTY X	0.296	–	0.330		
COORDINATES Y	0.276	–	0.318		
LUMINOUS INTENSITY*		5000		cd/m^2	I_f= 30 mA x3
5 POINT UNIFORMITY	70%				
EMITTED COLOR:	WHITE				

* BACKLIGHT LUMINANCE > 1000 cd/m^2 AT LCD SURFACE.

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