

UNCONTROLLED DOCUMENT

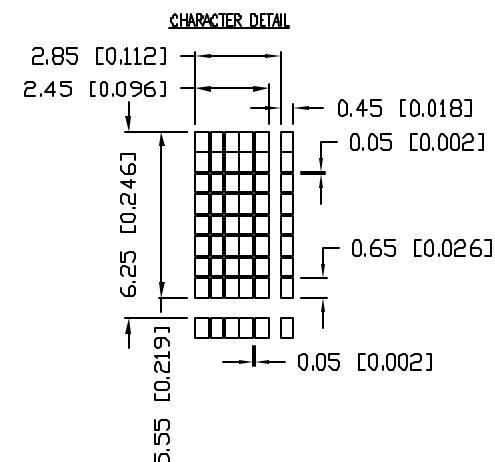
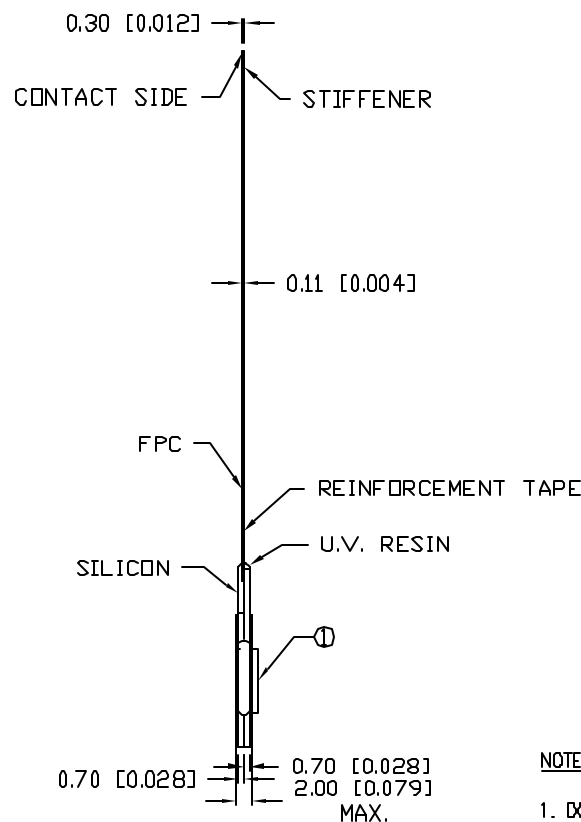
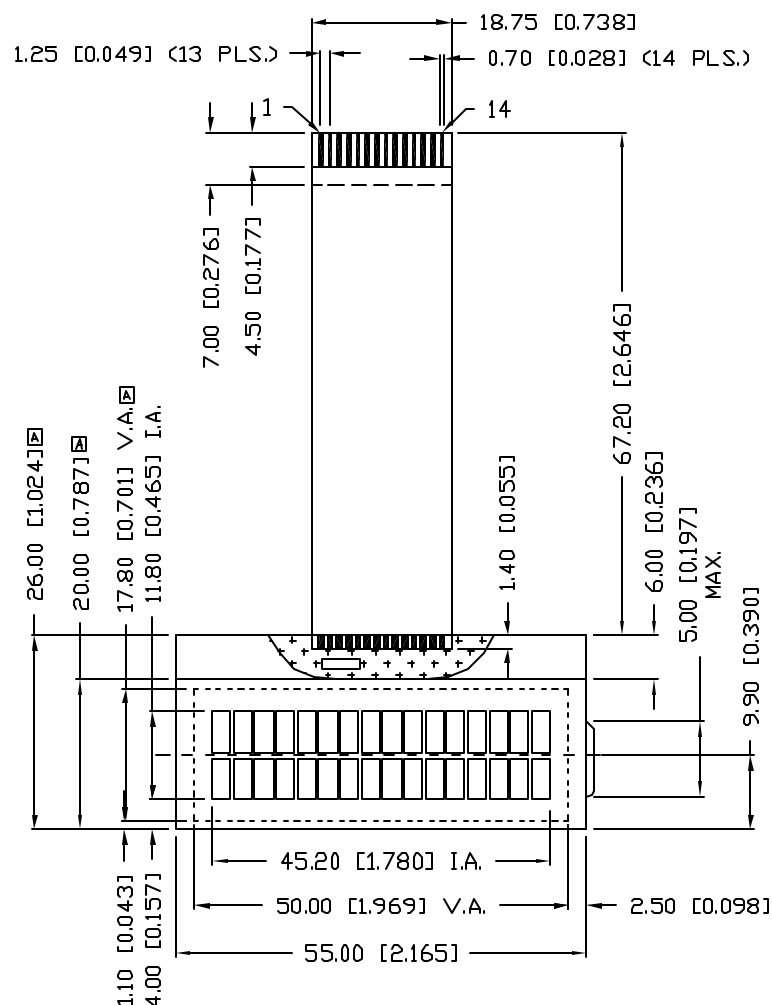
PART NUMBER

LCM-H01602CGSR-3K

REV.

B

REV.	E.C.N. NUMBER AND REVISION COMMENTS	DATE
A	E.C.N. #11354.	9.28.06
B	E.C.N. #11148.	02.13.07



NOTES:

1. DOUBLE SIDED TAPE 3M, 9672LE OR EQUIVALENT.
(50x12x0.15mm)

*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
-0.00
-DECIMAL PRECISION

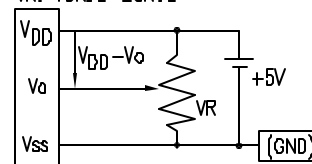
REV. B	PART NUMBER LCM-H01602CGSR-3K	CONFIDENTIAL INFORMATION THE INFORMATION CONTAINED IN THIS DOCUMENT IS THE PROPERTY OF LUMEX INC. EXCEPT AS SPECIFICALLY AUTHORIZED IN WRITING BY LUMEX INC., THE HOLDER OF THIS DOCUMENT SHALL KEEP ALL INFORMATION CONTAINED HEREIN CONFIDENTIAL AND SHALL PROTECT SAME IN WHOLE OR IN PART FROM DISCLOSURE AND DISSEMINATION TO ALL THIRD PARTIES. 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.	 290 E. HELEN ROAD PALATINE, IL 60067-6976 PHONE: +1.847.359.2790 US WEB: www.lumex.com TW WEB: www.lumex.com.tw
16x2 C.O.G. CHARACTER MODULE STN REFLECTIVE, FPC CABLE, HIGH OPERATING TEMP, 1/16 DUTY, 1/4 BIAS.		DRAWN BY: JC	CHECKED BY: APPROVED BY: DATE: 8.31.05 PAGE: 1 OF 1 SCALE: N/A

PIN CONFIGURATION

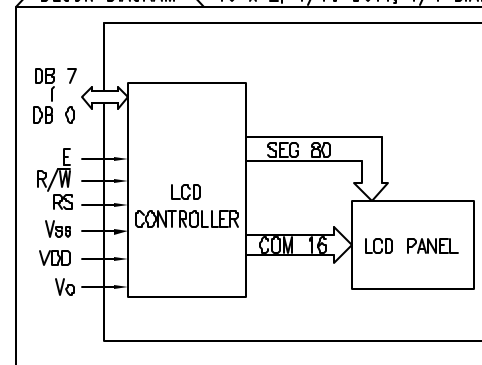
PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V _{SS}	-	POWER SUPPLY
2	V _{DD}	-	
3	V _O	-	
4	RS	H/L	REGISTER SELECT SIGNAL H: DATA INPUT L: INSTRUCTION INPUT
5	R/W	H/L	H: DATA READ (MODULE-->MPU) L: DATA WRITE (MODULE<--MPU)
6	E	H,H->L	READ WRITE ENABLE
7~14	DB0~DB7	H/L	DATA BUS-SOFTWARE SELECTABLE 4 OR 8 BIT MODE.

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

V_{DD}-V_O: LCD DRIVING VOLTAGE
VR: 10KΩ-20KΩ



BLOCK DIAGRAM 16 x 2, 1/16 DUTY, 1/4 BIAS



ELECTRICAL CHARACTERISTICS

V_{DD}=5.0V, GND=0V, T_A=-25°C

ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
OPERATING VOLTAGE	V _{DD}	-	2.8	-	5.5	V
INPUT VOLTAGE	V _H	-	0.8V _{DD}	-	V _{DD}	V
	V _L	-	-0.3	-	0.2V _{DD}	V
OUTPUT VOLTAGE	V _{OH}	I _{OH} =0.205mA	V _{DD} -0.6	-	-	V
	V _{OL}	I _{OL} =1.2mA	-	-	GND+0.6	V
INPUT LEAKAGE CURRENT	I _{LKG}	V _{IN} =0 TO V _{DD}	-1.0	-	1.0	μA
POWER SUPPLY CURRENT	I _{DD}	V _{DD} =5V	-	TBD	-	μA
EXTERNAL CLOCK FREQUENCY	f _{EC}	-	380	540	750	kHz
EXTERNAL CLOCK DUTY	duty	-	45	50	55	%
EXTERNAL CLOCK RISE TIME	t _R	-	0.1	-	0.5	μs
EXTERNAL CLOCK FALL TIME	t _F	-	0.1	-	0.5	μs
INTERNAL CLOCK FREQUENCY	f _{osc1}	R _f =91kΩ ±2%	380	540	750	kHz
LCD DRIVING VOLTAGE	V _{LCD}	V _{DD} -V ₅	4.4	4.7	5.0	V

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
			MIN	MAX	
SUPPLY VOLTAGE FOR LOGIC	V _{DD}	T _a =25°C	-0.3	7.0	V
SUPPLY VOLTAGE FOR LCD DRIVE	V _{LCD}	-	0	V _{DD} +0.3	V
INPUT VOLTAGE	V _I	T _a =25°C	-0.3	V _{DD} +0.3	V
OPERATING TEMPERATURE	T _{opr}	-	-20	70	°C
STORAGE TEMPERATURE	T _{stg}	-	-30	80	°C

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LCM-H01602CGSR-3K

16x2 C.O.G. CHARACTER MODULE STN REFLECTIVE,
FPC CABLE, HIGH OPERATING TEMP, 1/16 DUTY, 1/4 BIAS.

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RELIABILITY NOTE

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290 E. HELEN ROAD
PALATINE, IL 60067-6976
PHONE: +1.847.359.2790
US WEB: www.lumex.com
TW WEB: www.lumex.com.tw

DRAWN BY:

JC

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