

UNCONTROLLED DOCUMENT

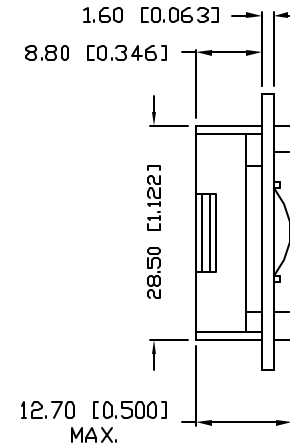
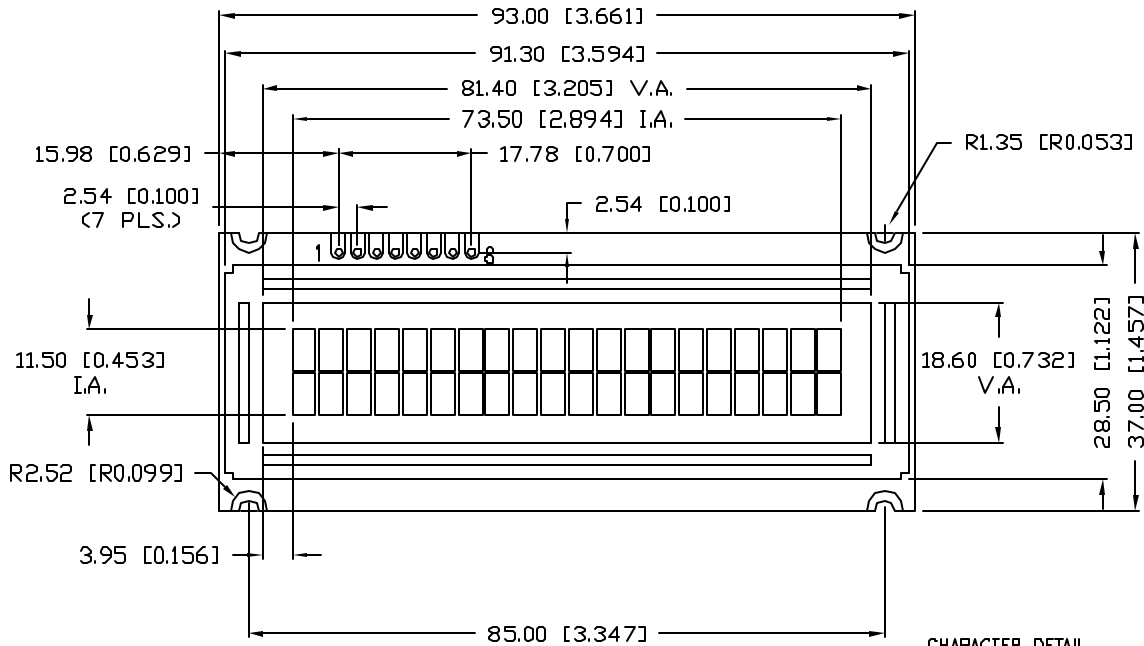
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PART NUMBER

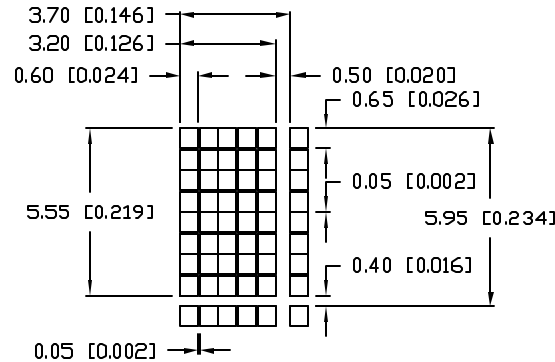
REV.

LCM-E02002DWF

PRELIMINARY IN P/N DIR



CHARACTER DETAIL



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



\*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.039), XX=±0.5 (±0.020), XXX=±0.25 (±0.010), XXXX=±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

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REV.

PART NUMBER

LCM-E02002DWF

20 x 2 CHARACTER LCD MODULE, FSTN, TRANSFLECTIVE,  
 SERIAL INPUT, EDGE LIT GREEN LED BACKLIGHT,  
 1/17 DUTY, 1/5 BIAS, VLCD = 4.5V.

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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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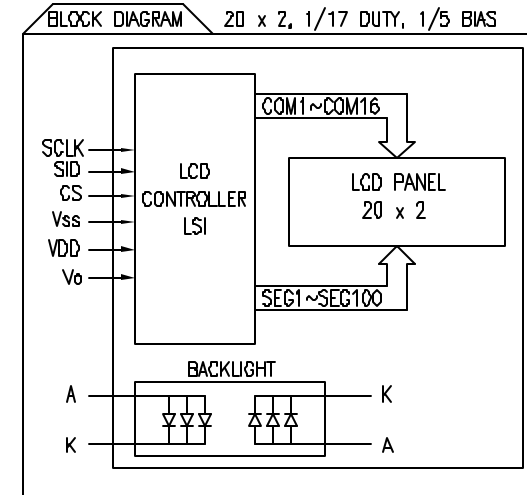
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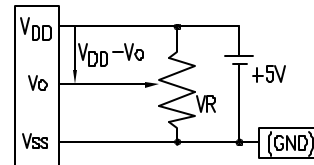
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SCALE: N/A

ELECTRICAL CHARACTERISTICS		$V_{DD}=2.7V \sim 5.5V, T_A=-30^{\circ}C \sim +85^{\circ}C$				
ITEM	SYMBOL	CONDITION	STANDARD VALUE			UNIT
			MIN.	TYP.	MAX.	
SUPPLY VOLTAGE FOR LOGIC	$V_{DD}-V_{SS}$	-	-	5.0	-	V
SUPPLY CURRENT FOR LOGIC	$I_{DD}$	$V_{DD}=3V$	-	2.0	3.0	mA
INPUT VOLTAGE	HIGH	$V_{IH}$	-	$0.7V_{DD}$	-	V
	LOW	$V_{IL}$	-	-0.3	0.6	V
OUTPUT VOLTAGE	HIGH	$V_{OH}$	$I_{OH}=-0.205mA$	$0.75V_{DD}$	-	V
	LOW	$V_{OL}$	$I_{OL}=1.6mA$	-	$0.2V_{DD}$	V
LED BACKLIGHT	VOLTAGE	$V_f$	$I_f=TBAmA$	-	-	V
	CURRENT	$I_f$	-	-	-	mA
	POWER CONSUMPTION	PD	-	-	648	mW
	LUMINOUS INTENSITY	L	$I_f=TBAmA$	TBA	-	cd/m <sup>2</sup>
COLOR	-	-	-	565	-	nm



$V_{DD}-V_o$ : LCD DRIVING VOLTAGE  
 VR: 10K $\Omega$  - 20K $\Omega$



PIN CONFIGURATION			
PIN NO.	SYMBOL	LEVEL	FUNCTION
1	$V_{DD}$	-	POWER SUPPLY 5V GROUND FOR LCD DRIVE
2	$V_{SS}$	-	
3	$V_o$	-	
4	$\overline{CS}$	H/L	CHIP SELECT SIGNAL H: CHIP DISABLED L: CHIP ENABLED
5	SID	H/L	SERIAL INPUT DATA LINE
6	SCLK	-	SERIAL CLOCK INPUT
7	K	-	CATHODE LED BACKLIGHT
8	A	-	ANODE LED BACKLIGHT

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	STANDARD VALUE		UNIT
		MIN	MAX	
POWER SUPPLY VOLTAGE	VDD	-0.3	7.0	V
POWER SUPPLY VOLTAGE	$V_o$	-15.0	+0.3	V
INPUT VOLTAGE	$V_{in}$	-0.3	3.0	V
OPERATING TEMPERATURE	$T_{opr}$	0	50	$^{\circ}C$
STORAGE TEMPERATURE	$T_{stg}$	-20	70	$^{\circ}C$

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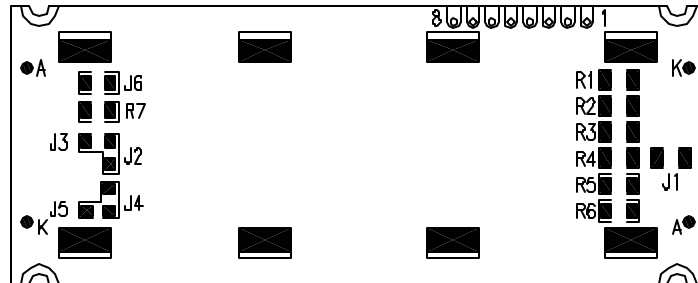
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			SCALE: N/A

BACK VIEW FROM RIGHT SIDE PROJECTION

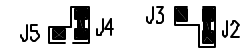


COMBINATIONS:

THE LED RESISTOR SHOULD BE BRIDGED AS FOLLOWING



THE 7TH PIN IS THE ANODE AND THE 8TH PIN IS THE CATHODE AS FOLLOWING



THE 7TH PIN IS THE CATHODE AND THE 8TH PIN IS THE ANODE AS FOLLOWING



THE METAL BEZEL IS ON GROUND AS FOLLOWING



LED POLARITY					
SYMBOL	STATE	J3, J5	J2, J4	LED POLARITY	
				7 PIN	8 PIN
J2, J4	SOLDER BRIDGE	OPEN	-	ANODE	CATHODE
J3, J5	SOLDER BRIDGE	-	OPEN	CATHODE	ANODE

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