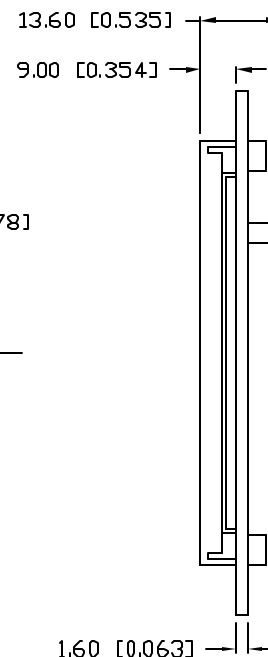
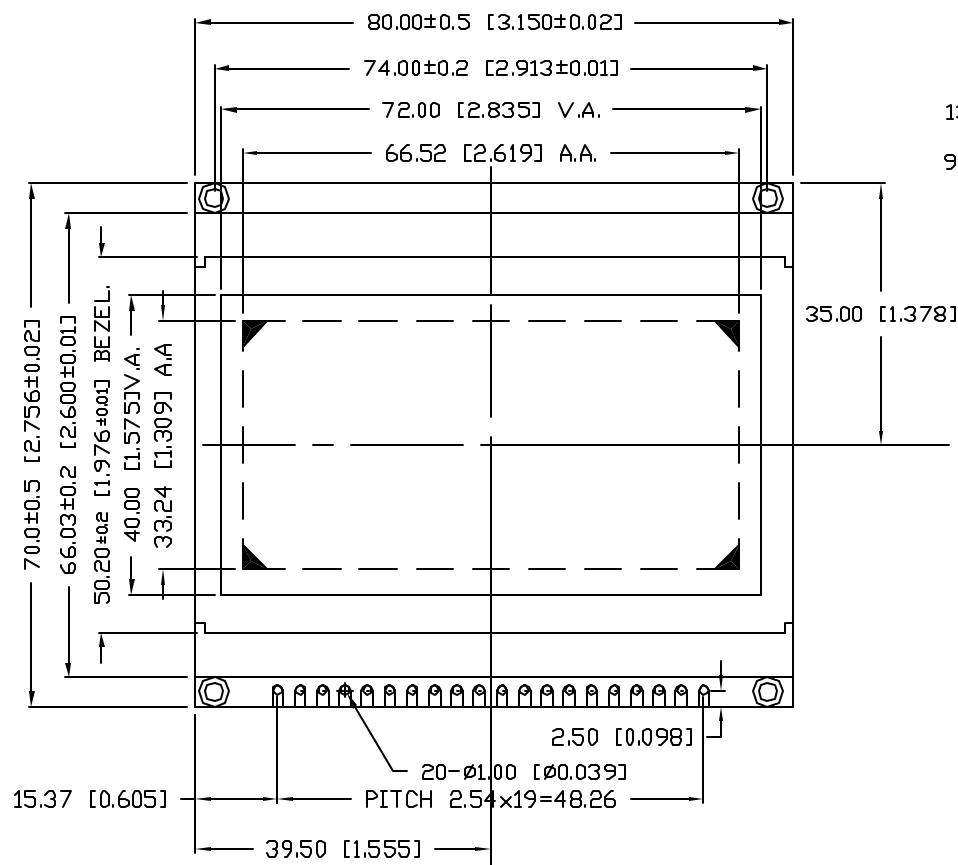


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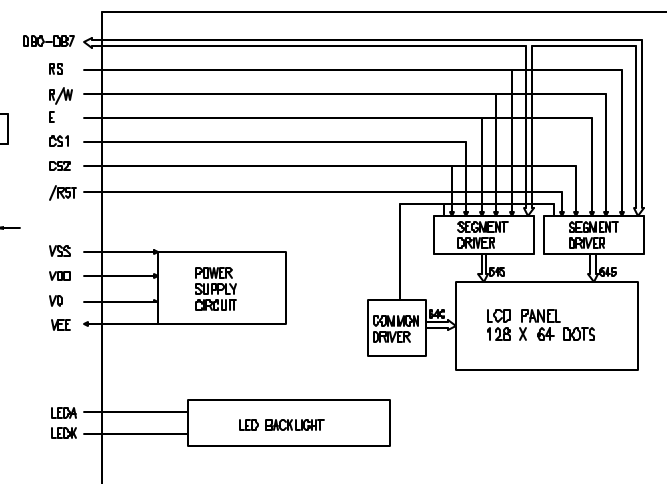
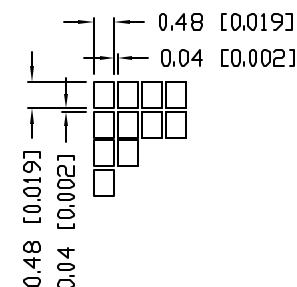
PART NUMBER

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REV.



PIXEL DETAIL



Pb

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*UNLESS OTHERWISE SPECIFIED TOLERANCES PER DECIMAL PRECISION ARE: X=±1 (±0.038), 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 MAX= +0.00 -DECIMAL PRECISION

REV.

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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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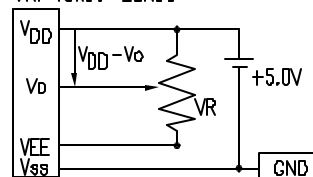
JC

128 x 64 DOT MATRIX GRAPHIC LCD MODULE.
STN BLUE, TRANSMISSIVE NEGATIVE IMAGE
WITH WHITE BACKLIGHT, HIGH OPERATING TEMPERATURE.

PIN CONFIGURATION

PIN NO.	SYMBOL	LEVEL	FUNCTION
1	V _{ss}	—	POWER SUPPLY GND (0V)
2	V _{DD}	—	
3	V ₀	—	
4	D/I	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	CS1	H	CHIP SELECT IC1
16	CS2	H	CHIP SELECT IC2
17	/RST	L	RESET SIGNAL
18	VEE	—	OUTPUT VOLTAGE FOR LCD DRIVE (-10V)
19	A	—	ANODE LED BACKLIGHT
20	K	—	CATHODE LED BACKLIGHT

V_{DD}-V₀: LCD DRIVING VOLTAGE
VR: 10KΩ-20KΩ



ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
			MIN	MAX	
SUPPLY VOLTAGE FOR LOGIC	V _{DD} -V _{ss}	T _a =25°C	0	6.5	V
SUPPLY VOLTAGE FOR LCD DRIVE	V _{DD} -V ₀	—	0	18.0	V
INPUT VOLTAGE	V _I	T _a =25°C	V _I	V _{DD}	V
OPERATING TEMPERATURE	T _{opr}	—	—	—	°C
		LCM-H	-20	70	°C
STORAGE TEMPERATURE	T _{stg}	—	—	—	°C
		LCM-H	-30	80	°C

ELECTRICAL CHARACTERISTICS

V_{DD}=5.0V, T = 25°C A

ITEM		SYMBOL	CONDITION	STANDARD VALUE			UNIT
				MIN.	TYP.	MAX.	
SUPPLY VOLTAGE FOR LOGIC		V _{DD} -V _{ss}	—	4.75	5.0	5.25	V
SUPPLY CURRENT FOR LOGIC		I _{DD}	V _{DD} =5.0V	—	6.0	8.0	mA
SUPPLY VOLTAGE LCD		V _{DD} -V ₀	V _{DD} =5.0V	—	11.5	—	V
SUPPLY CURRENT LCD		I ₀	—	—	0.3	0.4	mA
INPUT VOLTAGE	HIGH	V _{IH}	—	2.2	—	V _{DD}	V
	LOW	V _{IL}	—	0	—	0.8	V
OUTPUT VOLTAGE	HIGH	V _{OH}	—	2.4	—	—	V
	LOW	V _{OL}	—	—	—	0.4	V
*LED BACKLIGHT	VOLTAGE	V _f	I _f =TBD	—	3.1	3.3	V
	CURRENT	I _f	—	—	TBD	TBD	mA
	POWER CONSUMPTION	P _D	—	—	TBD	—	mW
	LUMINOUS	L	I _f =70mA	TBD	—	—	cd/m ²
COLOR		—	—	—	WHITE	—	nm

*ONLY APPLIES TO MODULES WITH BACKLIGHT

TIMING SPECIFICATIONS

ITEM	SYMBOL	MIN.	MAX.	UNIT
E CYCLE	t _C	1000	—	ns
E HIGH LEVEL WIDTH	t _{WH}	450	—	ns
E LOW LEVEL WIDTH	t _{WL}	450	—	ns
E RISE TIME	t _R	—	25	ns
E FALL TIME	t _F	—	25	ns
ADDRESS SETUP TIME	t _{ASU}	140	—	ns
ADDRESS HOLD TIME	t _{AH}	10	—	ns
DATA SETUP TIME	t _{DSU}	200	—	ns
DATA DELAY TIME	t _D	—	320	ns
DATA HOLD TIME (WRITE)	t _{DHW}	10	—	ns
DATA HOLD TIME (READ)	t _{DHR}	20	—	ns

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REV.

PART NUMBER

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128 x 64 DOT MATRIX GRAPHIC MODULE.
STN BLUE, TRANSMISSIVE, NEGATIVE IMAGE
WITH WHITE BACKLIGHT, HIGH OPERATING TEMPERATURE.

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