

UNCONTROLLED DOCUMENT

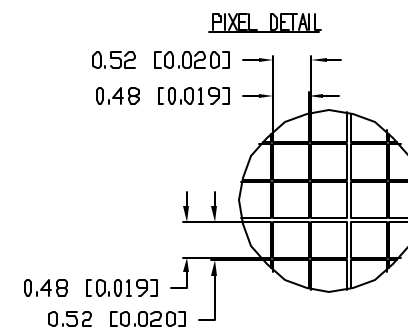
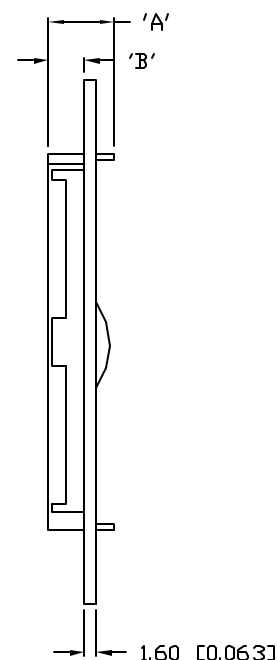
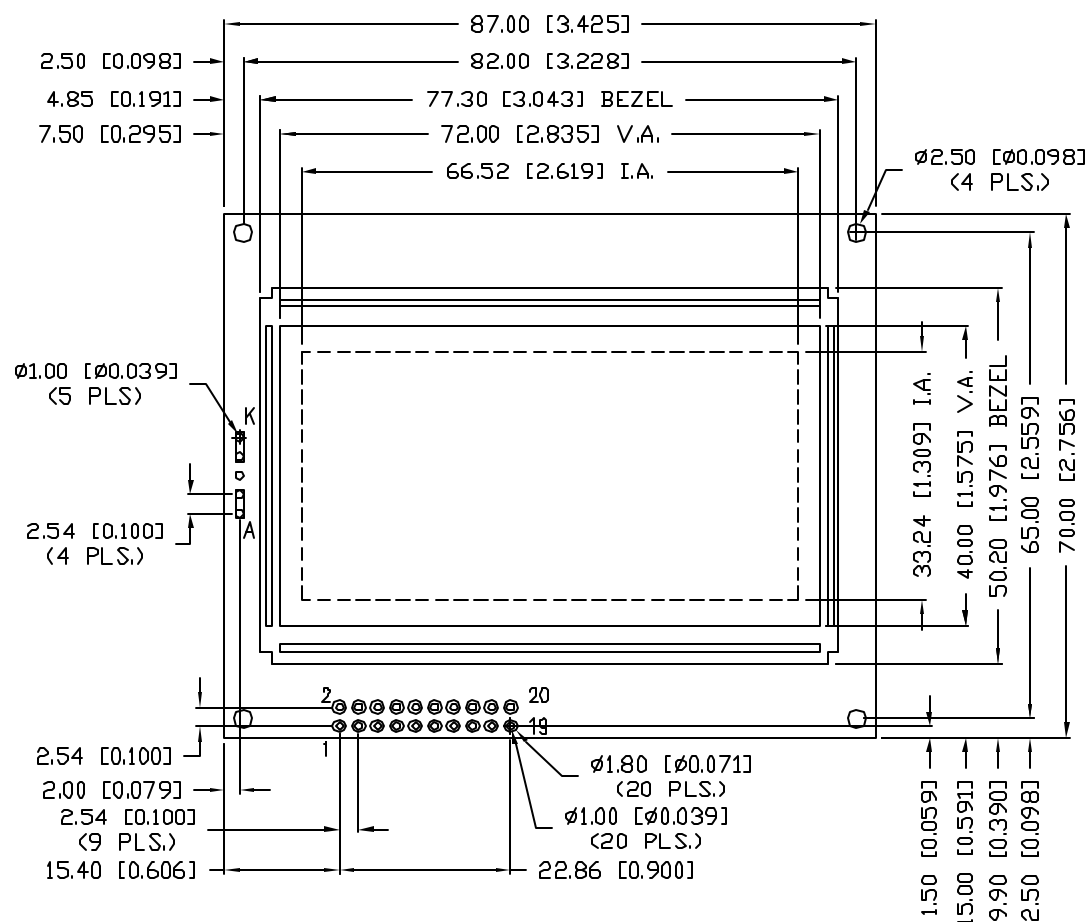
P/N PREFIX/SUFFIX TABLE			
LCM-X		DXX	DESCRIPTION
STANDARD	S	SR	STN, REFLECTIVE
		SF	STN, TRANSFLECTIVE(W/ BACKLIGHT)
HIGH TEMP.	H	TR	TN, REFLECTIVE
		TF	TN, TRANSFLECTIVE(W/ BACKLIGHT)

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

PART NUMBER
LCM-X12864GXX/F

REV.

TYPE	DIM.	A	B
WITH BACKLIGHT		12.7	8.7
NO BACKLIGHT		8.8	4.8



*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.

PART NUMBER

LCM-X12864GXX/F

128 x 64 GRAPHIC LCD MODULE, T6963C CONTROLLER IC,
1/64 DUTY, DC-DC CONVERTER.

CONFIDENTIAL INFORMATION

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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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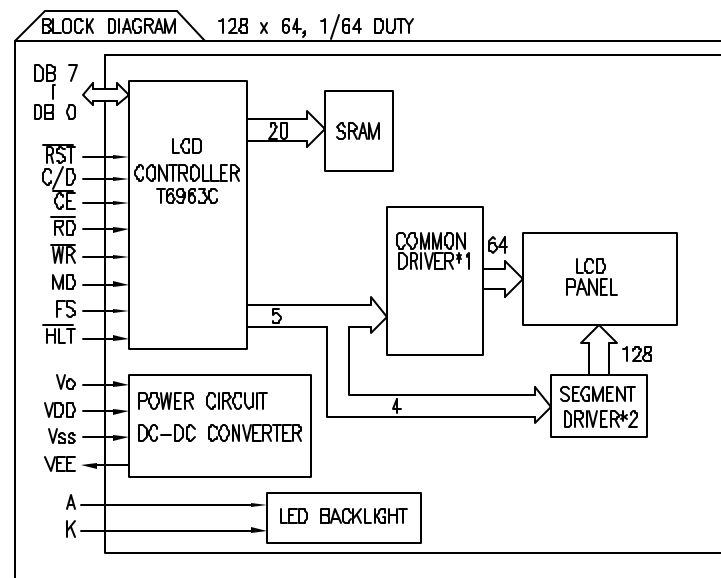
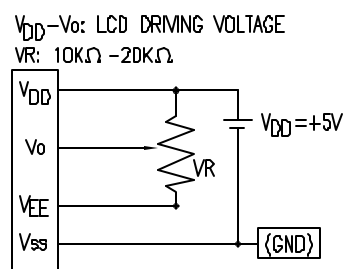
EC

PAGE: 1 OF 2

SCALE: N/A

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PIN CONFIGURATION				
PIN NO.	SYMBOL	LEVEL	FUNCTION	
1	V _{SS}	—	POWER SUPPLY FOR LCD DRIVE	GND (0V)
2	V _{DD}	—		5V
3	V _O	—		
4	C/D	H/L	WR="L", C/D="H": COMMAND WRITE C/D="L": DATA WRITE RD="L", C/D="H": COMMAND READ C/D="L": DATA READ	
5	RD	L	DATA READ	
6	WR	L	DATA WRITE	
7~14	DB0~DB7	H/L	DATA BUS—SOFTWARE SELECTABLE 4 OR 8 BIT MODE.	
15	CE	L	CHIP ENABLE	
16	RESET	L	CONTROL RESET (MODULE RESET)	
17	VEE	-5V	OUTPUT VOTAGE FOR LCD DRIVING	
18	MD	H/L	H: 32, L: 40 COLUMN SELECT	
19	FS	H/L	FONT SELECT "H": 6 x 8 PIXEL/FONT "L": 8 x 8 PIXEL/FONT	
20	HLT	L	STOP CLOCK OSCILLATION	



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}	—	4.5	5.0	5.5	V
SUPPLY VOLTAGE FOR LCD DRIVE		V _{DD} -V _O	V _{DD} =5V	7.6	8.3	9.2	V
SUPPLY CURRENT FOR LOGIC		I _{DD}	V _{DD} =5V	—	4.5	10	mA
INPUT VOLTAGE	HIGH	V _{IH}	—	2.2	—	4.7	V
	LOW	V _{IL}	—	0	—	0.6	V
OUTPUT VOLTAGE	HIGH	V _{OH}	—	2.4	—	—	V
	LOW	V _{OL}	—	—	—	0.4	V
*LED BACKLIGHT	VOLTAGE	V _f	I _f =300mA	—	4.2	4.5	V
	CURRENT	I _f	—	—	300	400	mA
	POWER CONSUMPTION	P _D	—	—	1260	—	mW
	LUMINOUS	L	I _f =300mA	60	90	—	cd/m ²
	COLOR	—	—	—	—	—	nm

*ONLY APPLIES TO MODULES WITH BACKLIGHT

ABSOLUTE MAXIMUM RATINGS					
ITEM	SYMBOL	TEST CONDITION	STANDARD VALUE		UNIT
SUPPLY VOLTAGE FOR LOGIC	V _{DD} -V _{SS}	T _a =25°C	MIN. 4.7	MAX. 5.3	V
SUPPLY VOLTAGE FOR LCD DRIVE	V _{DD} -V _O	—	0	10	V
INPUT VOLTAGE	V _I	T _a =25°C	V _{SS}	V _{DD}	V
OPERATING TEMPERATURE	T _{opr}	LCM-S	0	50	°C
		LCM-H	-20	70	°C
STORAGE TEMPERATURE	T _{stg}	LCM-S	-20	70	°C
		LCM-H	-30	85	°C

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