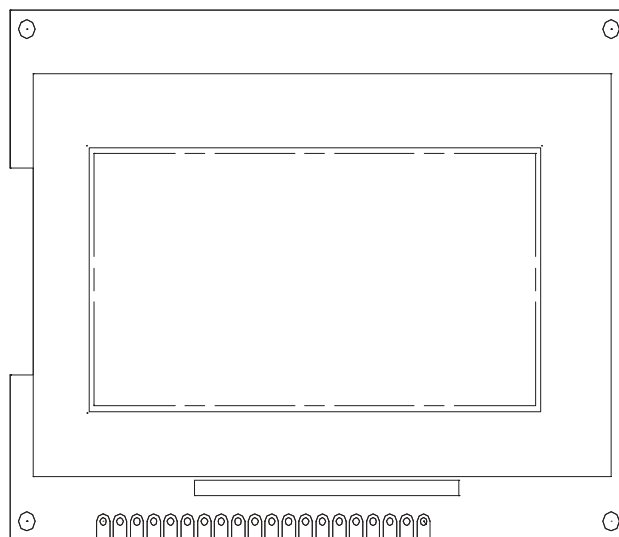




## PRODUCT SPECIFICATION

# HDR12864

128x64 GRAPHICS  
OLED DISPLAY MODULE



HANTRONIX, INC. 10080 BUBB RD. CUPERTINO, CA 95014	Q.A.: JK	REV.: 1.1	HDR12864	SHEET 1 OF 9
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## 1. MECHANICAL DATA

NO	ITEM	SPECIFICATION	UNIT
1	Dot matrix	128 (W) x 64 (H)	dot
2	Dot size	0.48 (W) x 0.48 (H)	mm
3	Dot pitch	0.52(W) x 0.52(H)	mm
4	Aperture rate	85	%
5	Active area	66.82(W) x 33.34(H)	mm
6	View area	68.5(W) x 35.3(H)	mm
7	Panel size	86(W) x 52.2(H)	mm
8	Panel thickness	2.15 (with polarizer)	mm
9	Module size	93(W) x 70(H) x 8.5(T)	mm
10	Weight	-	g

## 2. MAXIMUM RATING OF MODULE

ITEM	MIN	MAX	UNIT	COMMENT
Supply voltage ( $V_{cc}$ )	-0.3	5.5	V	Ta=25 °C
Input output pin voltage	-0.3	$V_{cc}+0.3$	V	Ta=25 °C
Operating temp.	-20	70	°C	
Storage temp	-40	85	°C	
Operating life time	10,000		Hours	Ta=25 °C
Storage life time	20,000		Hours	Ta=25 °C

Note: Operation life time condition: @ 11 V

### 3. ELECTRICAL CHARACTERISTICS OF DRIVER IC

#### D.C ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETERS	TEST CONDITION	MIN	TYP.	MAX	UNIT
$V_{CC}$	Operating voltage		4.5	5.0	5.5	V
$I_{CC}$	Operating current	$V_{CC}=5V$ $XSCL=1MHz$ No output load			1	mA
$V_{IH}$	Input high voltage		2.4		$V_{CC}$	V
$V_{IL}$	Input low voltage		0		0.8	V
$I_{SEGOH}$	Segment on output current	$V_{SEGOH}=7V$	-30		-300	uA
$I_{ROWOL}$	Row on output current	$V_{ROWOL}=0.4V$			100	mA
$I_{LI}$	Input Leakage current	$V_{CC}=5V$			2	uA

#### A.C ELECTRICAL CHARACTERISTICS

SYMBOL	PARAMETERS	MIN.	TYP.	MAX.	UNIT
$T_{SD}$	Data latch in setup time	50			ns
$T_{DH}$	Data latch in hold time	50			ns
$T_{WCP}$	XSCL pulse cycle time	140			ns
$T_{CL}$	XSCL low to LP high	20			ns
$T_{WLD}$	LP high width	140			ns
$T_{CDH}$	Common scan pulse latch hold time	50			ns
$T_{LSEG}$	LP low to segment outputs	200			ns
$T_{LCOM}$	LP low to common outputs	10			ns

## 4. ELECTRO-OPTICAL CHARACTERISTICS OF MODULE

### GENERAL ELECTRICAL SPECIFICATION

Minimum luminance 30 cd/m<sup>2</sup>  
(with circular polarizer)

Forward voltage 11 V

Duty 1/64

Frame rate 120 Hz

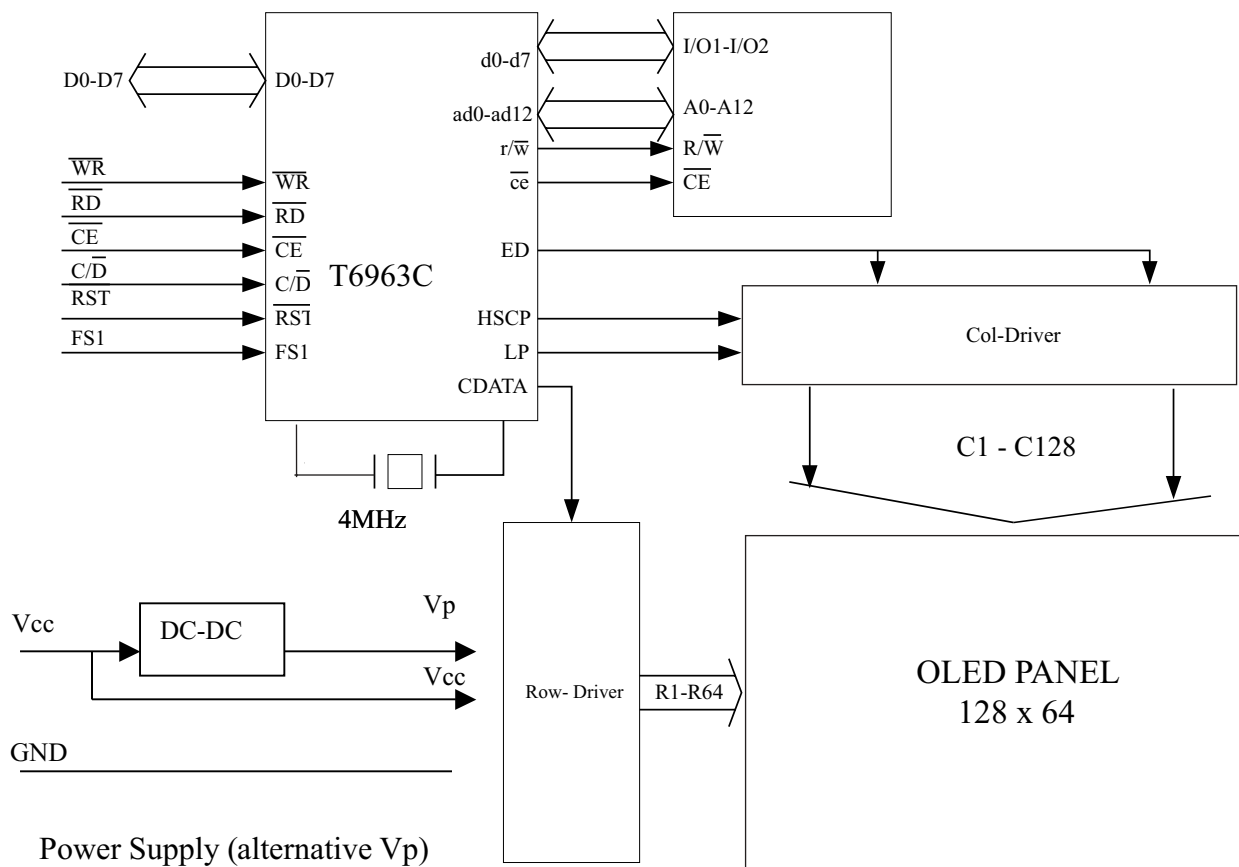
### PULSED ELECTRICAL SPECIFICATIONS AND OPTICAL CHARACTERISTICS

PARAMETER	MIN	TYP.	MAX	UNITS	COMMENTS
Forward voltage		11		V	Initial
Ivp		10	15	mA	All pixels on
Ivcc		26	30	mA	All pixels on whole module
Emissive power consumption		90	135	mW	All pixels on
Pixel luminance	30	35		cd/m <sup>2</sup>	Display average
Peak emission frequency		524		nm	Green
Emission frequency range		503-553		nm	1/2 max intensity
Pixel color coordinates	0.23 0.62	0.28 0.67	0.30 0.71		x, y (CIE 1931)
Dark room contrast		>1:100			
Viewing angle uniformity	>160			Degree	

Note: Optical Measurement taken at 1/64 duty, 120Hz frame rate

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## 5. FUNCTION BLOCK DIAGRAM



## 6. PIN ASSIGNMENTS

### PIN DESCRIPTION

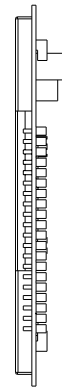
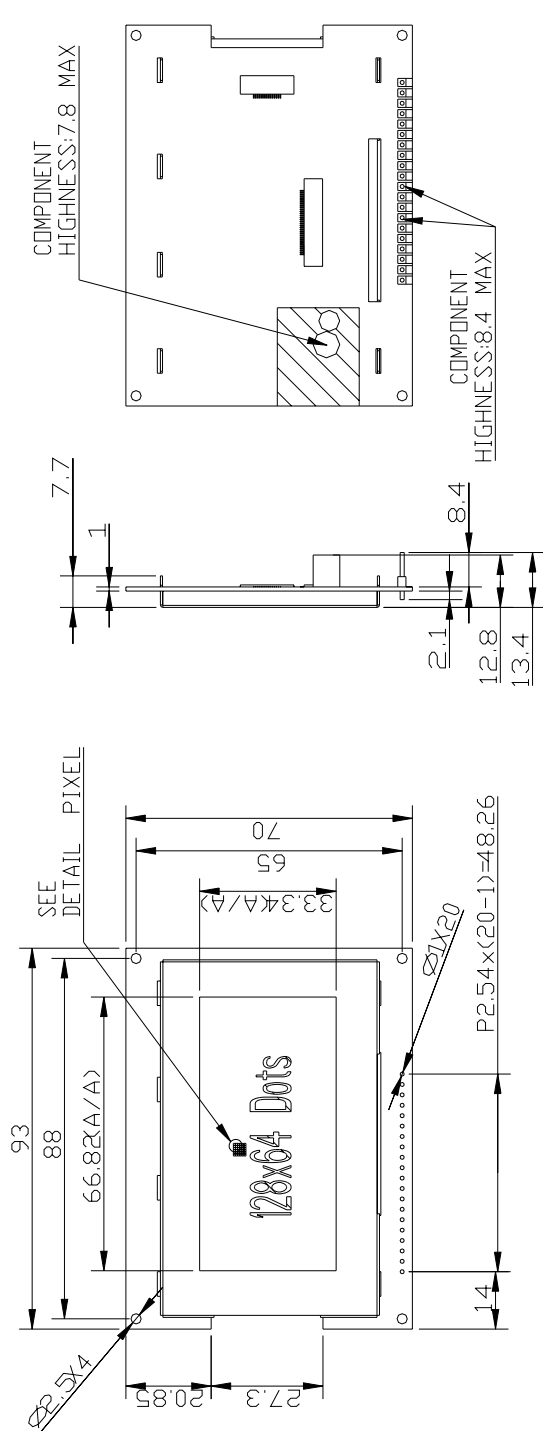
Pin Name	Pin No.	Description
GND	1	Power supply (0V)
V <sub>CC</sub>	2	Power supply (5V)
NC	3	No connection
C/D	4	WR =L C/D= H: Command write C/D= H Data write RD =L C/D= H: Status read C/D= H: Data read
WR	5	Data write.
RD	6	Data read.
DB0	7	Data I/O pin between CPU and T6963C.
DB1	8	Data I/O pin between CPU and T6963C.
DB2	9	Data I/O pin between CPU and T6963C.
DB3	10	Data I/O pin between CPU and T6963C.
DB4	11	Data I/O pin between CPU and T6963C.
DB5	12	Data I/O pin between CPU and T6963C.
DB6	13	Data I/O pin between CPU and T6963C.
DB7	14	Data I/O pin between CPU and T6963C.
CE	15	Chip enable for T6963C.
NC	16	No connection
RST	17	H: Normal mode. L: Initialize T6963C.
NC	18	No connection
NC	19	No connection
DISB	20	Sleep mode controller(Active:Low)

## 7. RELIABILITY TEST

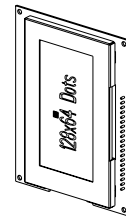
ITEM	TEST CONDITION
High Temp operation	60°C ; 24 hours
Low Temp operation	-40°C ; 24 hours
High Temp & High Humi. storage	85 °C/85%RH ; 24hours
High Temp & High Humi. operation	65 °C/90%RH ; 24hours
Thermal shock	-40°C, +85°C 30 minutes dwell, 180 seconds transition; 20 cycles
Criteria for Pass/Fail	Function test OK

Note: After test 2 hours (room temperature), check function & appearance.

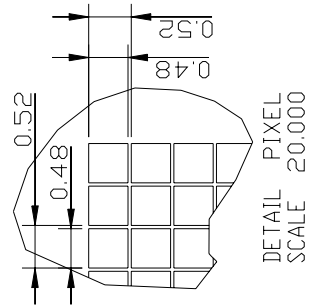
# 8. EXTERNAL DIMENSION



Specification:  
 Display: OLED  
 Dot Size: 0.48x0.48  
 Dot Pitch: 0.52x0.52  
 Aperture Rate: 85%  
 Active Area: 66.82x33.34  
 Duty: 1/64



SCALE 0.500



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