EEI TECHNOLOGY ElecStudio

05P-FLUORITE

EPC-INBN0BV1287UB

256x50 UNIVERSAL VFD GRAPHIC DOTMARTIX

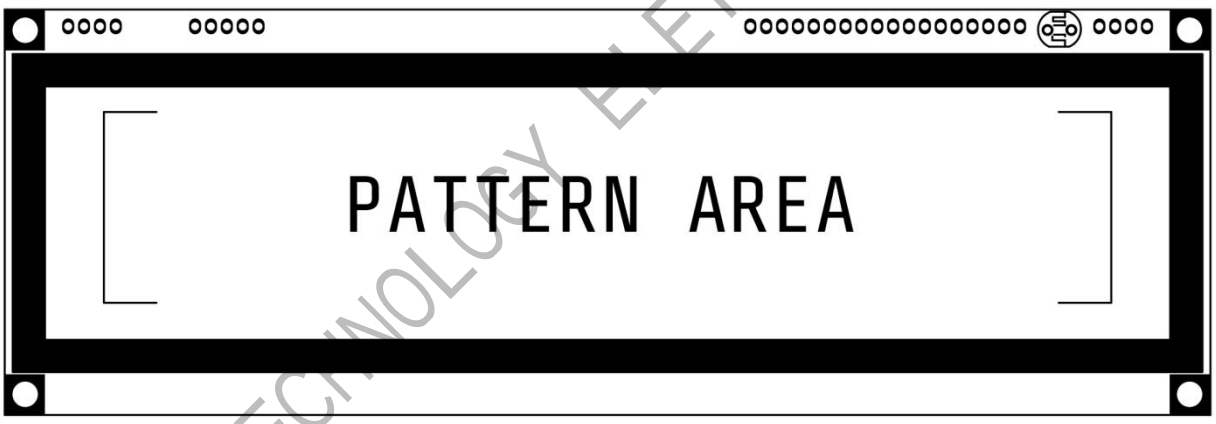
Features

- Internal Controller IC with 256x80 GRAM.
- High Brightness Phosphor.
- 1024 Step Brightness Adjust.
- Maximum Power consumption as low as 5W.
- Wide Voltage Input 4.5 - 20V.
- On board Light Sensor.

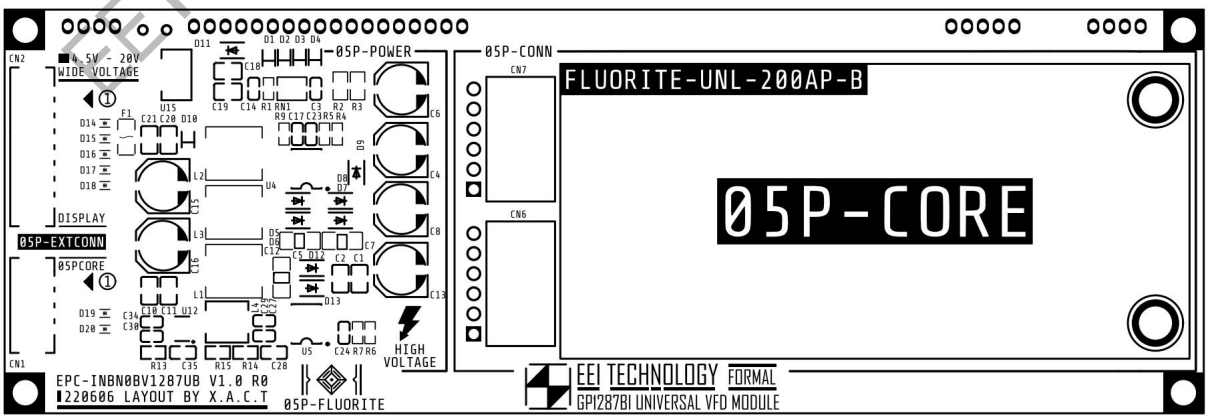
Applications

- Audio equipment.
- industrial equipment
- Instrumentation.
- Alarm CLOCK
- Car Radio

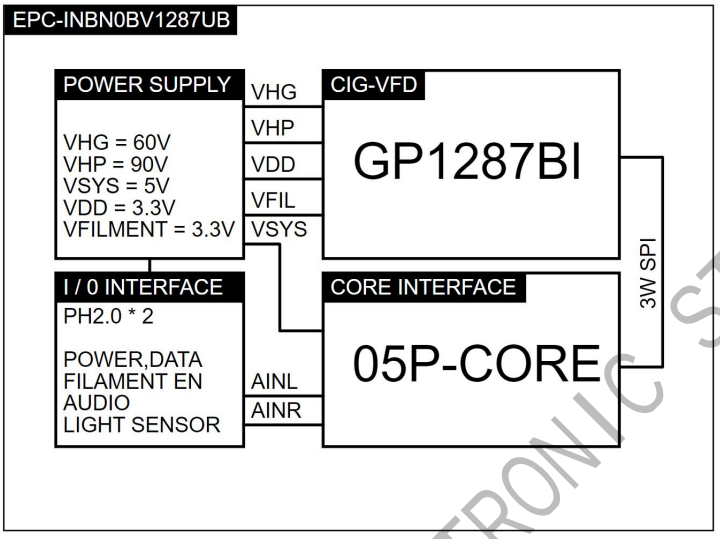
MODULE DIAGRAM (TOP)



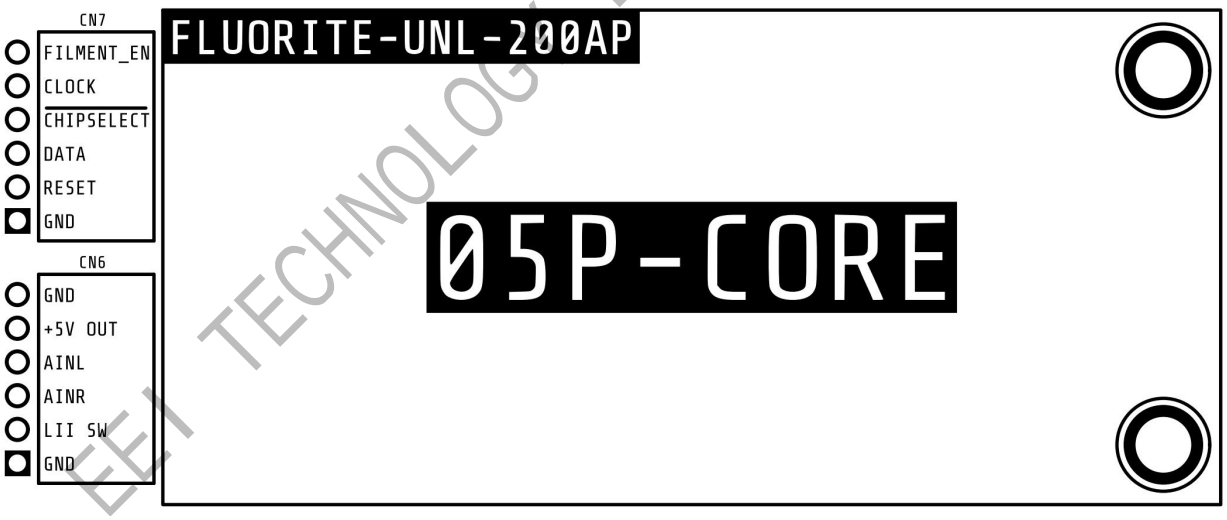
MODULE DIAGRAM (BOTTOM)



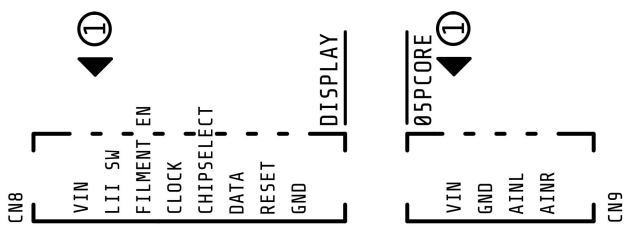
Function DIAGRAM



Interface DIAGRAM(05P-CORE)



Interface DIAGRAM(EXT-CONN)



Pin Function

Pin		I/O	Description
Name	NO.		
FILMENT_EN	1	INPUT	The VFD Filament Enable,high active.
CLOCK	2	INPUT	SPI clock input.
CHIPSELECT	3	INPUT	SPI chip select,low active.
DATA	4	INPUT	SPI data input,LSB First.
RESET	5	INPUT	VFD Reset,low active.
GND	6	--	Ground.
GND	7	--	Ground.
+5V OUT	8	OUTPUT	+5V Power supply output.
AINL	9	I/O	Audio Left Channel signal.
AINR	10	I/O	Audio Right Channel signal.
LII_SW	11	I/O	Light Sensor Pin,GL5506 Pull down.
GND	12	--	Ground.

Absolute Maximum Ratings

*Exceeding absolute maximum ratings can cause permanent damage to the module

Item	Min	Max	Unit
DC005 Power input	-0.3	24	V
TYPE-C Power input	-0.3	24	V
CLOCK, CHIPSELECT, DATA, RESET to GND	-0.3	5.5	V
FILMENT_EN to GND	-0.3	6	V
Storage Temperature	-40	80	C
Onboard +5V Power supply output current	--	800	mA
LII_SW Current	--	20	mA

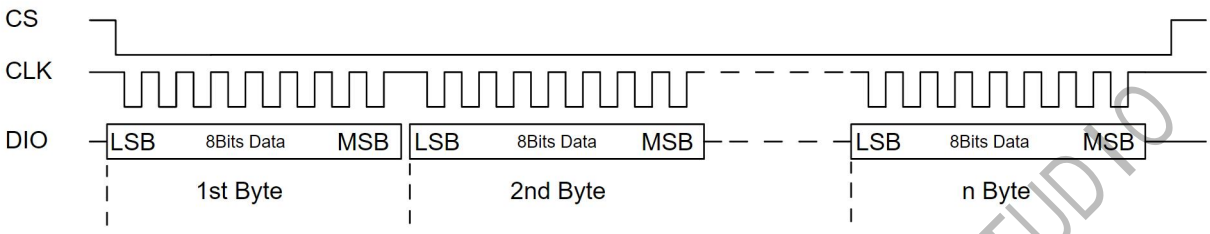
Recommended Operating Conditions

Item	Min	Max	Unit
DC005 Power input	4.5	20	V
TYPE-C Power input	4.5	20	V
CLOCK, CHIPSELECT, DATA, RESET to GND	3.3	5	V
FILMENT_EN to GND	3.3	5	V
Storage Temperature	-20	70	C

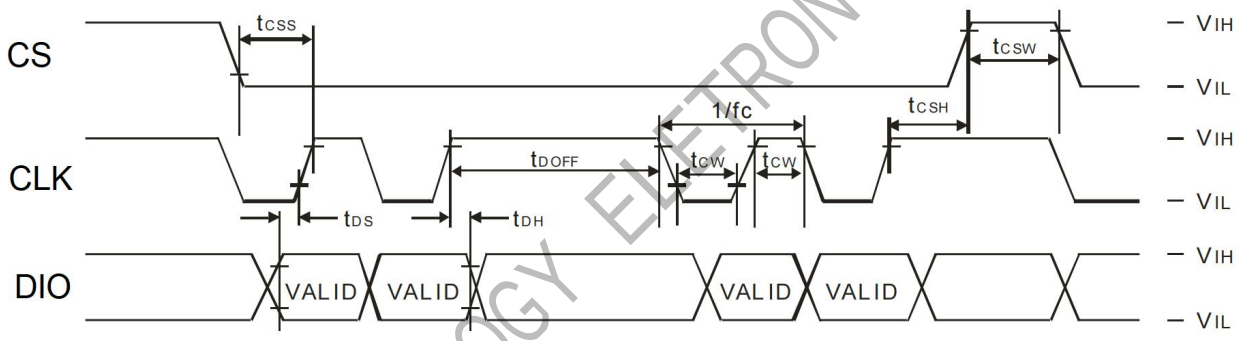
Electrical Characteristics

Parameter		Test Conditions	Min	Typ	Max	Unit
DISPLAY POWER SUPPLY						
I_{STDBY1}	VIN Standby Current	VIN = 5V, FILMENT_EN = 0V	--	8.5	12	mA
I_{STDBY2}	VIN Standby Current	VIN = 5V, FILMENT_EN = 3.3V, ALL Clear	--	360	380	mA
I_{ON}	VIN POWER ON Current	VIN = 5V, FILMENT_EN = 3.3V, ALL Light, DIMMING Set 1023	--	1200	1500	mA
SYSTEM POWER SUPPLY						
V_{SYS}	SYS POWER	VIN = 5V, Open Load	4.95	5	5.25	V
I_{MAX}	MAX Output Current	VIN = 5V	--	--	600	mA
UVLO						
V_{UVP}	UVLO Voltage		3.2	3.3	--	V
LOGIC LEVEL						
V_{IL} max	Logic Low Threshold		--	--	0.6	V
V_{IH} min	Logic High Threshold		2.3	--	--	V
FILAMENT ENABLE CONTROL						
V_{IL} max	EN Low Threshold		--	--	0.3	V
V_{IH} min	EN High Threshold		2	--	--	V
R_{EN}	EN Pull- down Resistance		--	10	--	KOhm
DATA INTERFACE						
F_{CLK}	CLK Frequency		--	--	4.167	MHz
T_{PR}	Power on Reset Time		1	--	--	ms
T_{RW}	Reset Hold Time		100	--	--	us
T_{RTH}	Reset Wait Time		1	--	--	ms
LIGHT SENSOR						
R_{BS}	Sensor Bright Resistance		4	--	7	Kohm
R_{DS}	Sensor Dark Resistance		--	--	500	Kohm
T_{RR}	Response Time (Rise)		--	30	--	ms
T_{RF}	Response Time (Fall)		--	30	--	ms
P_{DMAX}	Power Dissipation (max)		--	--	90	mW
ESD RATINGS						
V_{ESD}	Electrostatic discharge	Per human-body model	--	--	16	KV
		Air discharge	-15	--	15	KV
		Contact discharge	-8	--	8	KV

Serial Data Transmission Timing Chart

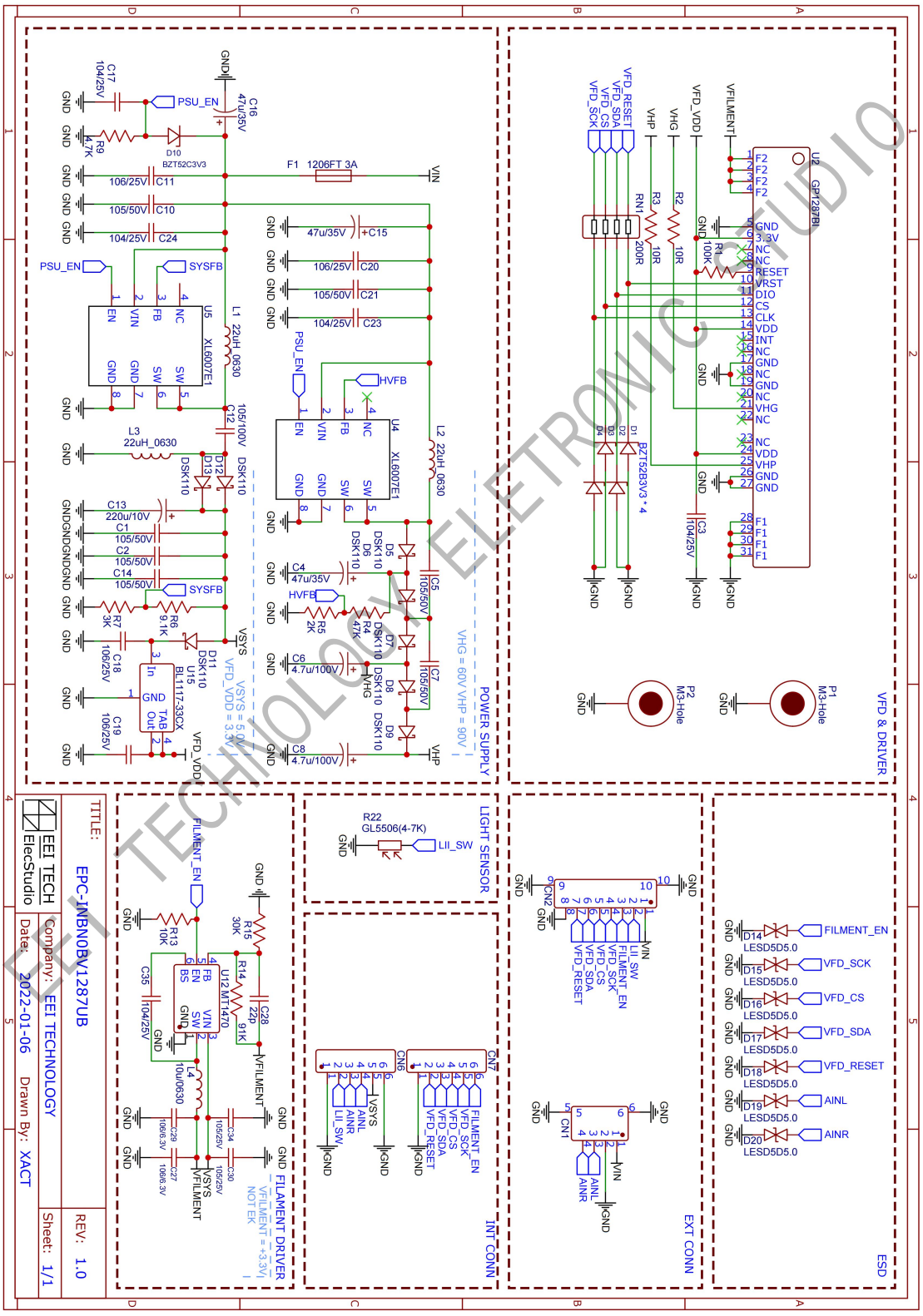


AC Characteristics

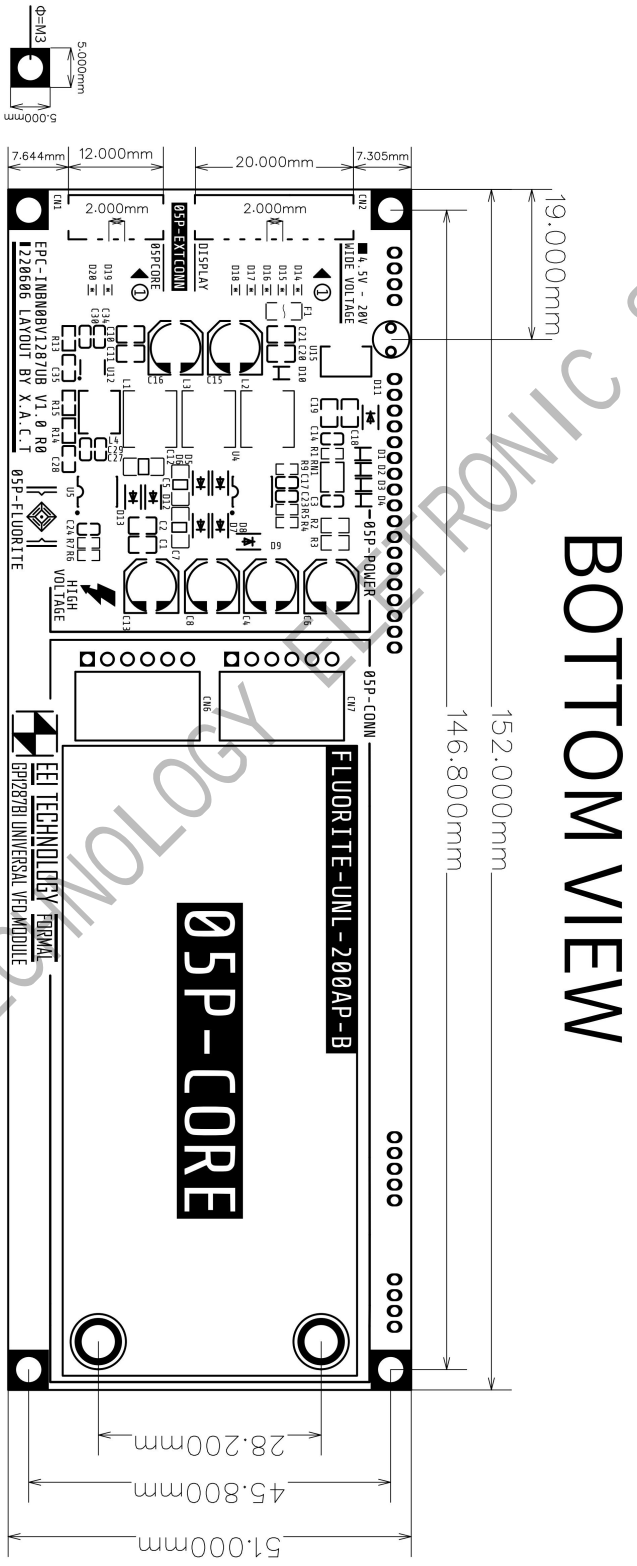


Item	Symbol	Condition	Min	Max	Unit
CLK Frequency	fc	--	--	4.167	MHz
CLK Pulse width	tCW	--	120	--	ns
DIO Setup Time	tDS	--	60	--	ns
DIO Hold Time	tDH	--	60	--	ns
CS Setup Time	tCSS	--	240	--	ns
CS Hold Time	tCSH	Oscillation state	120	--	ns
CS Wait Time	tCSW	--	120	--	ns
Data Processing Time	tDOFF	Oscillation state	360	--	ns
Data Wait Time	tRSOFF	--	--	--	

Module Schematic



Module Outline DIAGRAM



05P-CORE Board Outline DIAGRAM