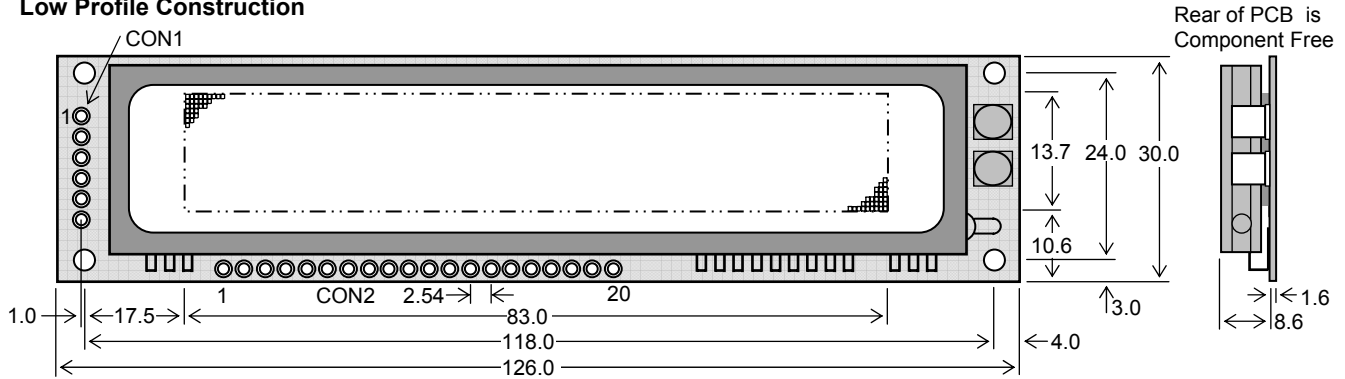


Dot Graphic VFD Module

GU128x18F-K610A2

- 128 x 18 High Brightness Dot Graphic Display
- Single 5V DC Supply
- 2 ASCII Fonts (5 x 7 and 10 x 14)
- Mixed Graphics and Text Display
- CMOS Asynchronous Serial Interface
- SPI Clock Serial Interface and 12 I/O Pins
- Variable Active Writing Area
- Low Profile Construction

The module includes the VFD glass, VF drivers and microcontroller with refresh RAM, character generation, interface logic and patented transformerless DC/DC converter. The Async. serial interface accepts baud rates up to 38,400 with or without parity. The module features a low profile design with numerous custom options available including special fonts, application specific commands and key scanning.



Dimensions in mm & subject to tolerances. Mounting holes 3.5mm dia.

ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Condition
Power Supply Voltage	VDD	5.0VDC +/- 10%	GND=0V
Power Supply Current	IDD	300 mA typ.	VDD=5VDC
SPI Clock Serial High Input	VIH	3.0VDC min.	VDD=5VDC
SPI Clock Serial Low Input	VIL	0.8VDC max.	VDD=5VDC
Logic High Input	VIH	2.0VDC min.	VDD=5VDC
Logic Low Input	VIL	0.8VDC max.	VDD=5VDC
Logic High Output	VOH	2.4VDC min.	IOH=-2.0mA
Logic Low Output	VOL	0.5VDC max.	IOH=2.0mA

OPTICAL & ENVIRONMENTAL SPECIFICATION

Parameter	Value
Display Area (X x Ymm)	83.05 x 13.69
Dot Size/Pitch (XxY mm)	0.5 x 0.6 / 0.65 x 0.77
Luminance	700 cd/m ² (200 fL) Typ.
Colour of Illumination	Blue-Green (505nm)
Operating Temperature	-30°C to +80°C
Storage Temperature	-40°C to +85°C
Operating Humidity	20 to 85% RH @ 25°C

Optical filters can provide violet, red, yellow, blue & green output.

SOFTWARE COMMANDS

Command Name	Hex
Set Display Mode	10+
XON Handshake	11
Set I/O RS232, SPI, C0-3, D0-7	12+
XOFF Handshake	13
Set Active Area(lxH,txH,rxH,bxH)	14+
Position Cursor (lxH, tyH)	15+
Set Luminance (00H-1FH)	16+
Inverse Active Area	17
Fill Active Area	18
Outline Active Area	19
Write Graphic Bytes (len,nn..)	1A+
Extended Commands	1B+
Write ASCII Characters	20-7F

DISPLAY MODE SETTINGS (10H)

Bit	Function
1	0=Font 5x7 1=Font 10x14
2	0=Normal Font 1=Inverse Font
3	0=Cursor Increment 1=Dec.
4	0=Cursor Move Hor. 1=Vertical
5	0=Graphic Write Hor. 1=Vertical
6,7	Write mode 00=Overwrite 01=AND, 10=OR, 11=XOR

CHARACTER FONT 10 x 14

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
20		!	"	#	\$	%	&	'	()	*	+	,	-	.	/
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{	}	~		▄

CHARACTER FONT 5 x 7

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
20		!	"	#	\$	%	&	'	()	*	+	,	-	.	/
30	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
40	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
50	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
60	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
70	p	q	r	s	t	u	v	w	x	y	z	{	}	~		▄

CON1

Pin	Signal	Function
1	EIN	CMOS Host Busy
2	EOUT	CMOS Module Busy
3	TXD	CMOS Transmit
4	GND	0V
5	RXD	CMOS Receive
6	VDD	5V

Link EIN and EOUT for XON/XOFF
Default: 19200, N, 8, 1

CON2

Pin	Signal	Function
1	GND	0V
2	/SS	Slave Select
3	RES	Reset Input
4	MOSI	SPI Receive
5	MISO	SPI Transmit
6	SCK	SPI Clock
7	GND	0V
8	VDD	5V
9-12	C3-C0	User I/O
13-20	D0-D7	User I/O

All I/O at Logic Level Voltages

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