

COG (Chip on Glass) LCD Modules



COG(Chip-On-Glass) is an advanced packaging technology that connects ICs and substrates and it is the Flip-chip mounting directly on the glass , so it was called COG (Chip on Glass).

The COG with benefits of light weight, simplify the process and can meet Fine Pitch requirements.

We offer graphic type LCD Modules in resolution of 128x32 ,128x64 to 160x160 and COG LCD character types including size of 16x2, 20x2 formats.

Display Format	Model No.	Outline Dimension (mm)	View Area (mm)	Dot Size (mm)	Interface	Controller IC	Download Flyer
128x32	BO12832C	49X28X4	46X18.5	0.306X0.47	SPI	UC1701X	
128x64	BO12864E5	80X54	70.7X38.8	0.48X0.48	Parallel	ST7567S	
128x64	BO12864G	76X50	72X39	0.48X0.48	I2C	ST7588T	
128x64	BO12864M	56.6X44.2x7.65	50.6X31	0.334X0.403	Parallel/SPI/I2C	UC1601x	
160X160	BO160160A	50x55x5	42X42	0.18x0.20	SPI	ST7529	

BO12832C

Feature

1. COG package
2. Built-in controller UC1701X
3. +3.3V power supply
4. 1/33 duty cycle
5. On chip LCD booster
6. Backlight : LED White
7. Normal temperature operating range



Mechanical Data

Item	Standard Value	Unit
Module Dimension	49.0 x 28.0 x 4.0	mm
Viewing Area	46.0 x 18.5	mm
Dot Size	0.306 x 0.470	mm
Dot Pitch	0.336 x 0.500	mm

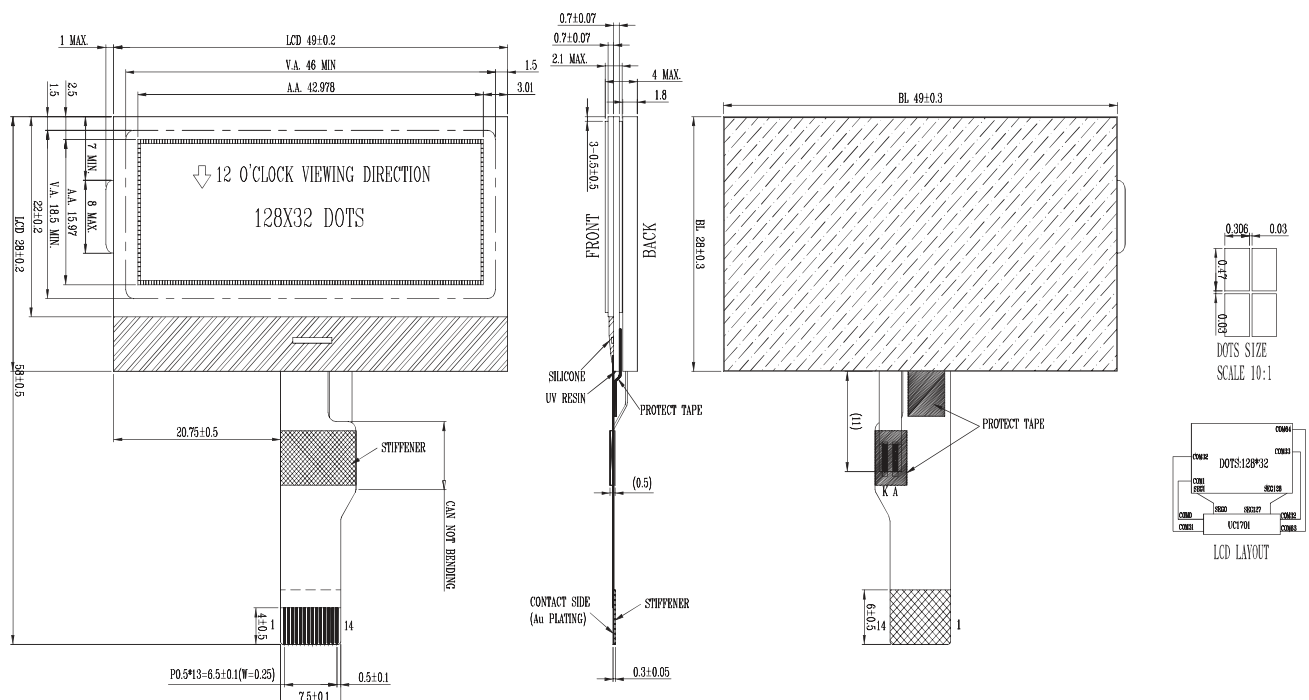
Pin Assignment

Pin	Symbol	Pin	Symbol
1	VLCD	11	/RST
2	VB1+	12	/CS0
3	VB1-	13	A
4	VB0-	14	K
5	VB0+		
6	VSS		
7	VDD		
8	SDA		
9	SCK		
10	CD		

Electronic Characteristics

Item	Symbol	Condition	Typ.	Unit
Input Voltage	VDD	Vdd=+3.3V	3.3	V
Supply Current	IDD	Vdd=+3.3V	0.5	mA
LCD Driving Voltage	VLCD	25°C	8.0	V
LED Forward Voltage	VF	25°C	3.0	V
LED Forward Current	IF	25°C	60	mA

Dimension



BO12864E5



Feature

1. COG package
2. Built-in controller ST7567S
3. +3.3V single power supply
4. 1/64 duty cycle
5. On chip LCD booster
6. Option: LED edge backlight

Mechanical Data

Item	Standard Value	Unit
Module Dimension	80.0 x 54.0	mm
View Area	70.7 x 38.8	mm
Dot Size	0.48 x 0.48	mm
Dot Pitch	0.52 x 0.52	mm



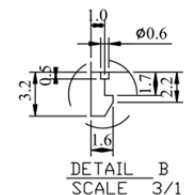
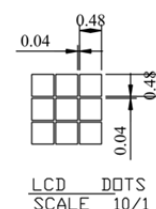
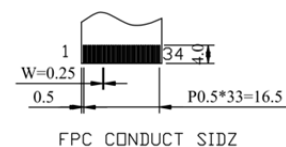
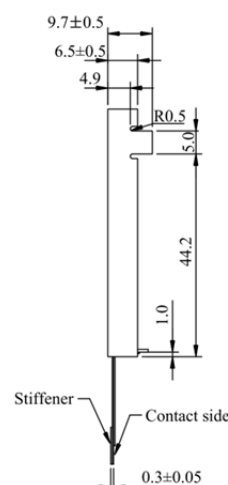
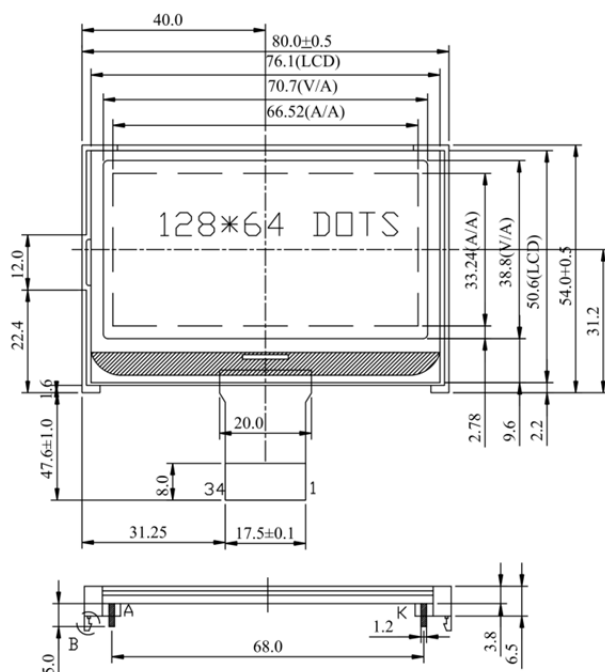
Pin Assignment

Pin	Symbol	Pin	Symbol
1	/CS1	19	V0
2	/RES	20	XV0
3	A0	21~24	NC
4	/WR(RW)	25	VG
5	/RD(E)	26~30	NC
6~13	D0~D7	31	C86
14	VDD	32	PSB
15	VSS	33	SI2
16~18	NC	34	NC

Electronic Characteristics

Item	Symbol	Condition	Typical Value	Unit
Input Voltage	VDD		3.3	V
Supply Current	IDD		0.5	mA
LCD Forward Voltage	VLCD	25°C	10.2	V
LED Forward Voltage (white)	VF	25°C	3.2	V
LED Forward Current (white)	IF	25°C	120	mA

Dimension





1. COG package
2. Built-in controller ST7588T
3. +2.4~ +3.3V single power supply
4. 1/64 duty cycle
5. On chip LCD booster
6. Option: LED edge B/L
7. I2C interface

Item	Standard Value	Unit
Module Dimension	76.0 x 50.0	mm
Viewing Area	72.0 x 39	mm
Dot Size	0.48 x 0.48	mm
Dot Pitch	0.52 x 0.52	mm

Pin	Symbol	Function
1	Vo	LCD supply voltage
2	C4P	For voltage booster circuit capacitor connection pin for voltage converter
3	C2N	
4	C2P	
5	C1P	
6	C1N	
7	C5P	
8	C3P	
9	C3N	DC-DC voltage converter
10	VOUT	
11	VDD	Power supply (+3.0V)
12	VSS	Ground
13	SDA	I2C input data
14	SCL	I2C input clock
15	/RESET	Reset : L=Enable H=Disable
16	NC	No connection

Item	Symbol	Condition	Typical Value	Unit
Input Voltage	Vdd	Vdd = 3.0V	3.3	V
Supply Current	Idd	Vdd = 3.0V	0.5	mA
LCD Driving Voltage	V _{LCD}	25°C	9.2	V

Technical drawing of a 128x64 dot matrix display module. The drawing includes a top view showing the display area with dimensions (103.8mm x 52mm), pin pitch (0.5mm), and various mounting and connector dimensions. A side view shows the module's profile with a height of 8.3mm and a stiffener on the conductive side.

BO12864M

Feature

1. COG package
2. Built-in controller UC1601x
3. +3.3V power supply
4. 1/65 duty cycle
5. On chip LCD booster
6. Option LED (White, Yellow Green)
7. Normal temperature operating range



Mechanical Data

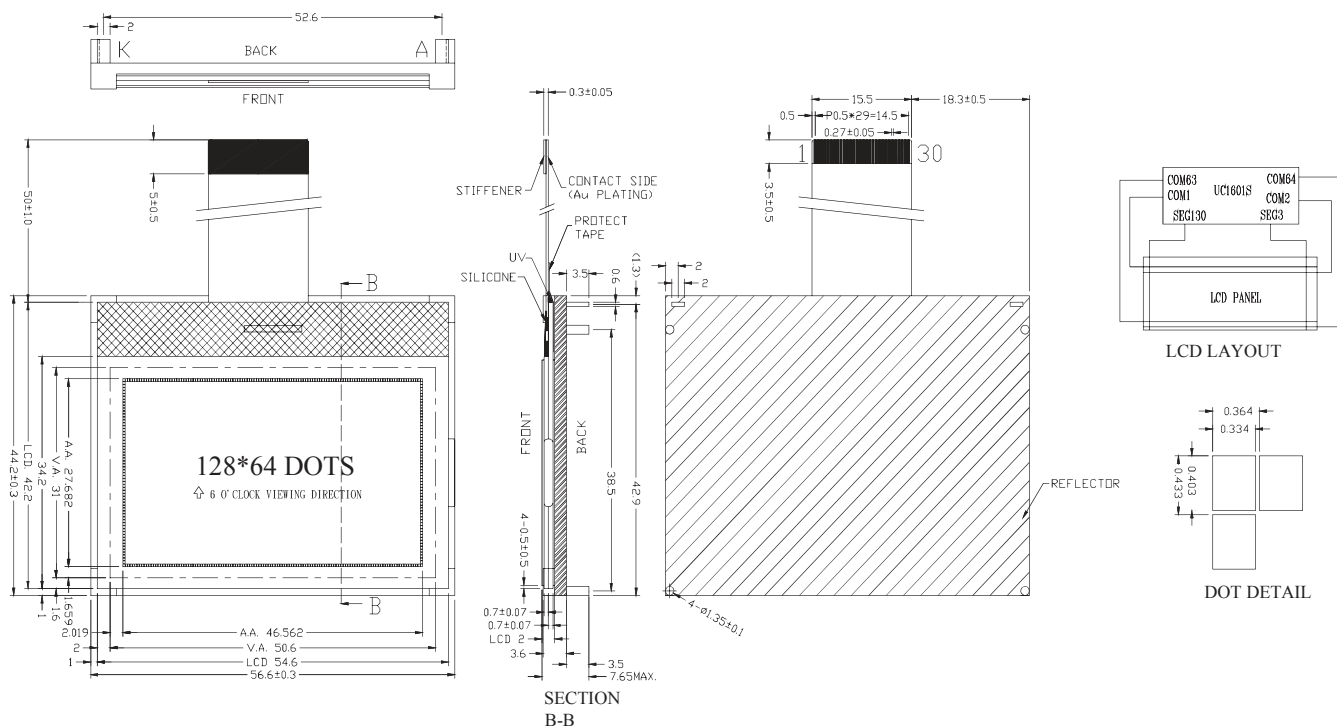
Item	Standard Value	Unit
Module Dimension	56.6 x 44.2 x 7.65	mm
Viewing Area	50.6 x 31.0	mm
Dot Size	0.334 x 0.403	mm
Dot Pitch	0.364 x 0.433	mm

Pin Assignment

Pin	Symbol	Pin	Symbol
1~4	NC	13	BM0
5	VLCD	14~21	D7~D0
6	VB0+	22	WR1
7	VB0-	23	WR0
8	VB1-	24	CD
9	VB1+	25	/RST
10	VSS	26	/CS0
11	VDD	27~30	NS
12	BM1		

Electronic Characteristics

Item	Symbol	Condition	Typ.	Unit
Input Voltage	VDD	Vdd=+3.3V	3.3	V
Supply Current	IDD	Vdd=+3.3V	0.8	mA
LCD Driving Voltage	VLCD	25°C	9.5	V
LED Forward Voltage	VF	25°C	3.0	V
LED Forward Current	IF	25°C	80	mA



BO160160A

Feature

1. COG package
2. Built-in controller ST7529
3. +3.3V power supply
4. 1/160 duty cycle
5. On chip LCD booster
6. Backlight : LED Blue
7. Wide temperature operating range



Mechanical Data

Item	Standard Value	Unit
Module Dimension	50.0 x 55.0 x 5.00	mm
Viewing Area	42.0 x 42.0	mm
Dot Size	0.18 x 0.20	mm
Dot Pitch	0.20 x 0.22	mm

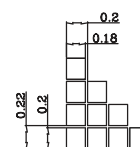
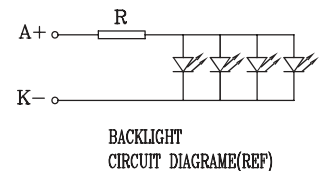
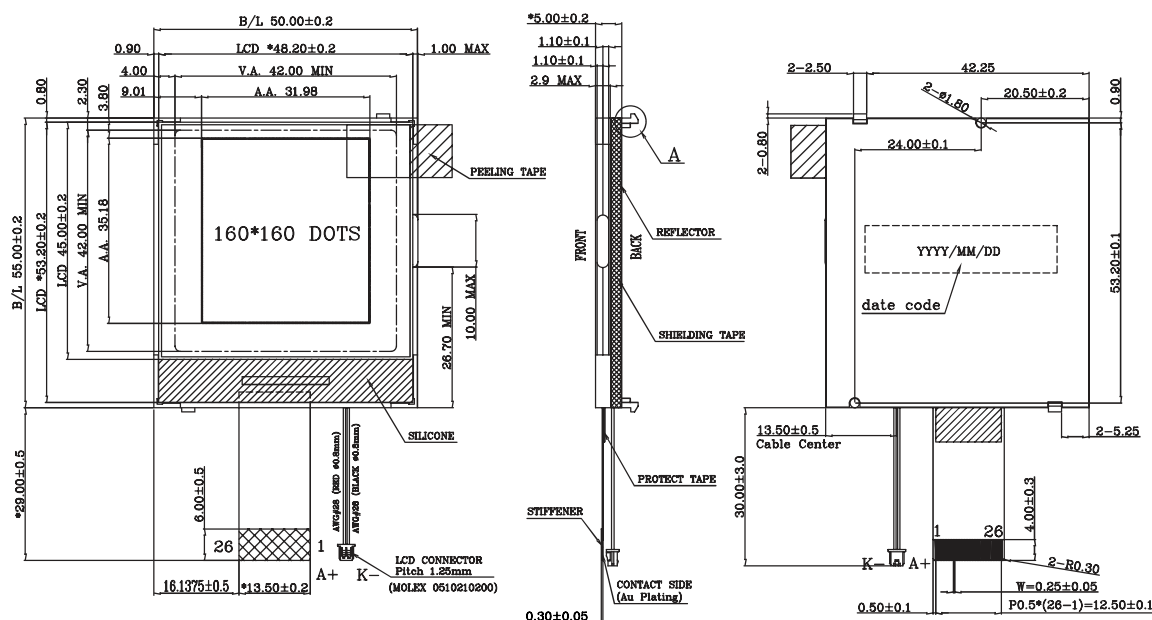
Pin Assignment

Pin	Symbol	Pin	Symbol
1	A0	12	C3P
2	/RST	13	C1N
3	SI	14	C1P
4	SCL	15	C2P
5	XCD	16	C2N
6	VDD	17	C4P
7	VSS	18	C2N
8	VDD	19	C6P
9	C7P	20	VLCDIN
10	C1N	21	VLCDOUT
11	C5P	22~26	V4~V1

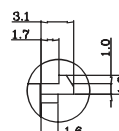
Electronic Characteristics

Item	Symbol	Condition	Typ.	Unit
Input Voltage	VDD	Vdd=+3.3V	3.3	V
Supply Current	IDD	Vdd=+3.3V	1.2	mA
LCD Driving Voltage	VLCD	25°C	14.5	V
LED Forward Voltage	VF	25°C	3.3	V
LED Forward Current	IF	25°C	60	mA

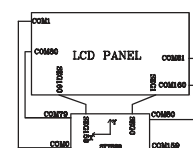
Dimension



DOTS DETAIL



DETAIL A



LCD LAYOUT DIAGRAM