COG9649-01

Graphic 96x49dots

Part number list

BO9649A□□□□$

Feature

1.Bulit-in controller S1D15606D00B
2.Bulit-in oscillation and voltage regulator
3.+3V single power supply
4.SPI interface
5.No backlight option

Pin Assignment

Pin	Symbol	Pin	Symbol
1	V5	11	CAP3-
2	V4	12	Vout
3	V3	13	Vss
4	V2	14	SI
5	V1	15	SCL
6	VDD	16	A0
7	CAP2+	17	/RES
8	CAP2-	18	/CS1
9	CAP1-		
10	CAP1+		

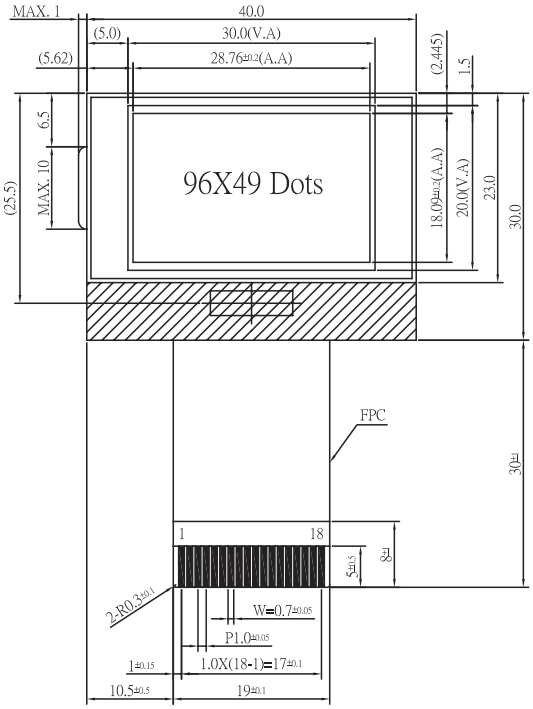
Mechanical Data

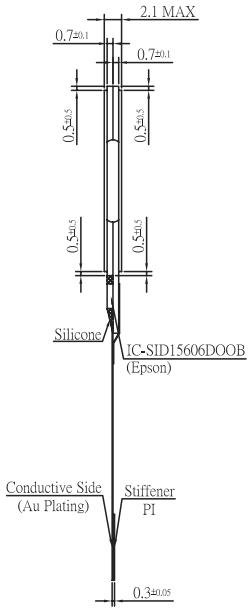
Item	Standard Value	Unit
Module Dimension	40.0 x 30.0	mm
Active Area	28.76 x 18.09	mm
Dot Pitch	0.30 x 0.37	mm
Dot Size	0.26 x 0.33	mm

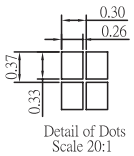
Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	8.0	V

Mechanical Drawing







COB9832-01

Graphic 98x32dots

Part number list

BG9832B□□□□$

Feature

1.Bulit-in controller SED1520Daa
2.No bulit-in oscillation (Need external clock)
3.+5V single power supply
4. 6800/8080 interface
5.(Option) +3V power supply with negative voltage

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	+ 5V(+3V option)
3	Vo	Contrast adjustment
4	Ao	H --> Data L --> Instruction
5	/CS1	L --> Chip1 enable
6	/CS2	L --> Chip 2 enable
7	CL	External clock 2KHZ
8	RD/E	RD for 80 serial; /E for 68 serial
9	WR,R/W	WR for 80 serial; R/W for 68 serial
10~17	DB0~7	Data bus line
18	RES	L: 80 series, H: 68 series
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

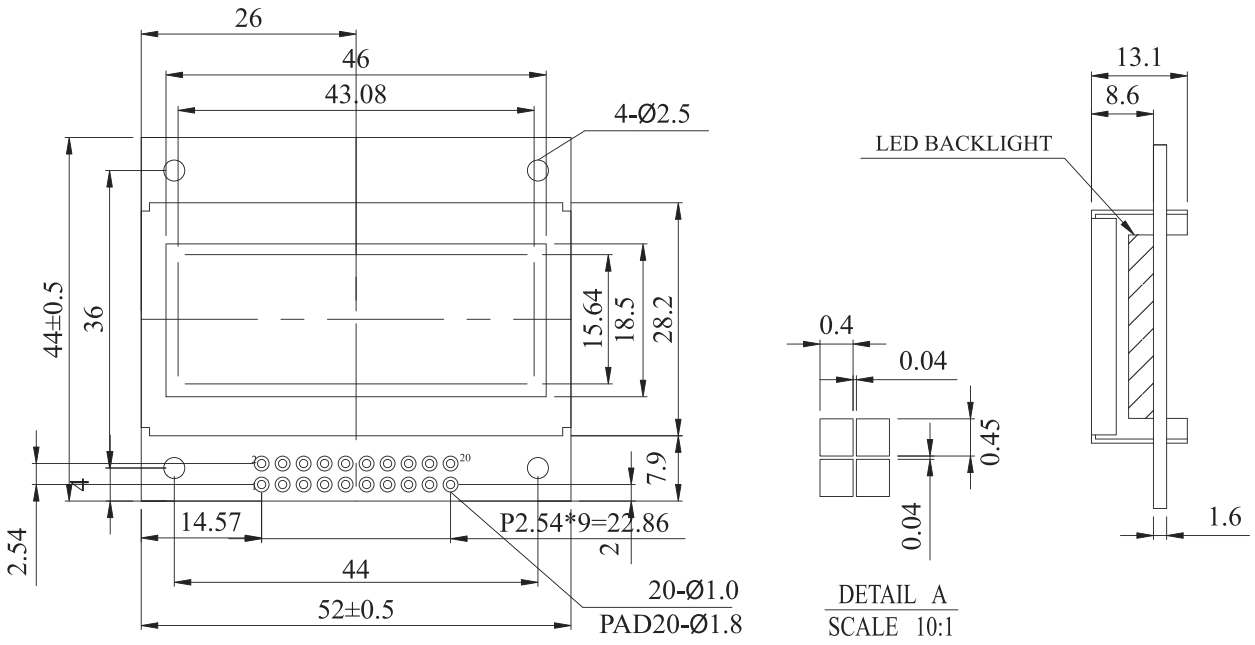
Mechanical Data

Item	Standard Value	Unit
Module Dimension	52.0 x 44.0	mm
Active Area	43.08 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.40 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	6.5	V

Mechanical Drawing



COB9832-02

Graphic 98x32dots

Part number list

BG9832C□□□□$

Feature

1.Bulit-in controller SED1520Daa
2.No bulit-in oscillation (Need external clock)
3.+5V single power supply
4. 6800/8080 interface
5.(Option) +3V power supply with negative voltage

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	+ 5V(+3V option)
3	Vo	Contrast adjustment
4	Ao	H --> Data L --> Instruction
5	/CS1	L --> Chip1 enable
6	/CS2	L --> Chip 2 enable
7	CL	External clock 2KHZ
8	RD/E	RD for 80 serial; /E for 68 serial
9	WR,R/W	WR for 80 serial; R/W for 68 serial
10~17	DB0~7	Data bus line
18	RES	L: 80 series, H: 68 series
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

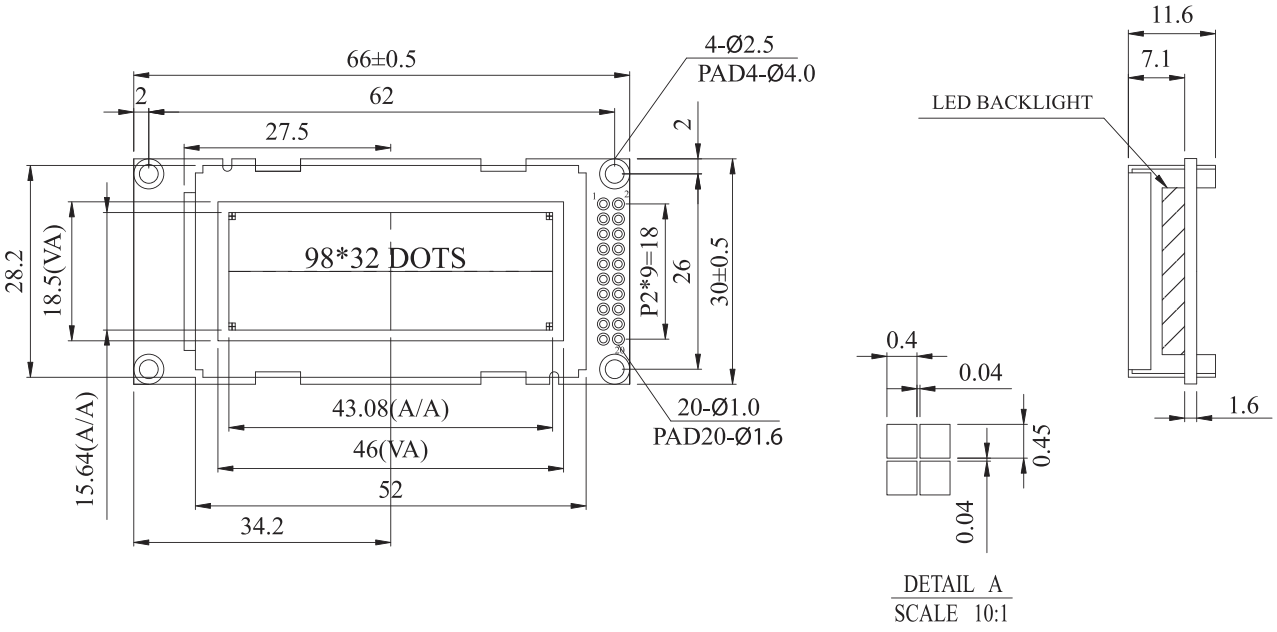
Mechanical Data

Item	Standard Value	Unit
Module Dimension	66.0 x 30.0	mm
Active Area	43.08 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.40 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	6.5	V

Mechanical Drawing



COG9864-01

Graphic 98x64dots

Part number list

BO9664B□□□□$

Feature

1.Bulit-in controller ST7548i
2.Bulit-in oscillation and voltage regulator
3.+3V single power supply
4.I2C interface
5.FSTN Transflective type
6.(Option) EL / LED backlight

Pin Assignment

Pin	Symbol	Function
1	Vlcd	LCD power supply
2	Vss1	Logic power GND
3	Vss2	Logic power GND
4	SCL	I2C bus serial clock signal input
5	SDA	I2C bus data line
6	RES	Device reset signal
7	Vdd2	Logic power V+
8	Vdd1	Logic power V+

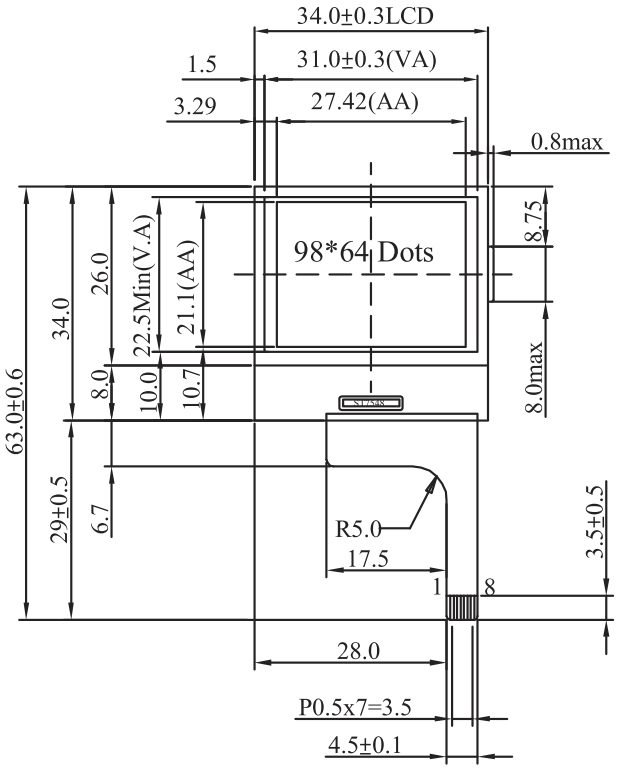
Mechanical Data

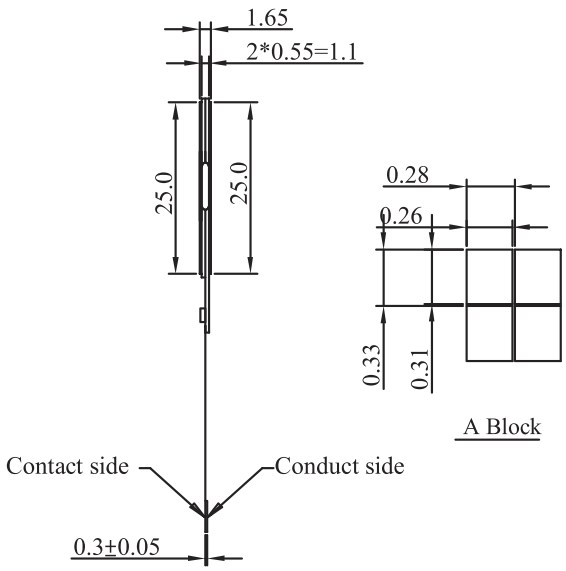
Item	Standard Value	Unit
Module Dimension	34.0 x 34.0	mm
Active Area	27.42 x 21.10	mm
Dot Pitch	0.28 x 0.33	mm
Dot Size	0.26 x 0.31	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	11.9	V

Mechanical Drawing





COG9864-02

Graphic 98x64dots

Part number list

BO9664A□□□□$

Feature

1.Bulit-in controller SSD1815
2.Bulit-in oscillation and voltage regulator
3.+3V single power supply
4.6800 / 8080 interface
5.FSTN Transflective type

Pin Assignment

Pin	Symbol	Pin	Symbol	Pin	Symbol
1	VDD	11	Cap1N	21	DB2
2	C86	12	Cap1P	22	DB1
3	VSS	13	Vap3N	23	DB0
4	VL6	14	Vee	24	E(RD)
5	VL5	15	Vss	25	R/W(WR)
6	VL4	16	DB7	26	DC
7	VL3	17	DB6	27	RES
8	VL2	18	DB5	28	CS
9	Cap2P	19	DB4	29	NC
10	Cap2N	20	DB3	30	NC

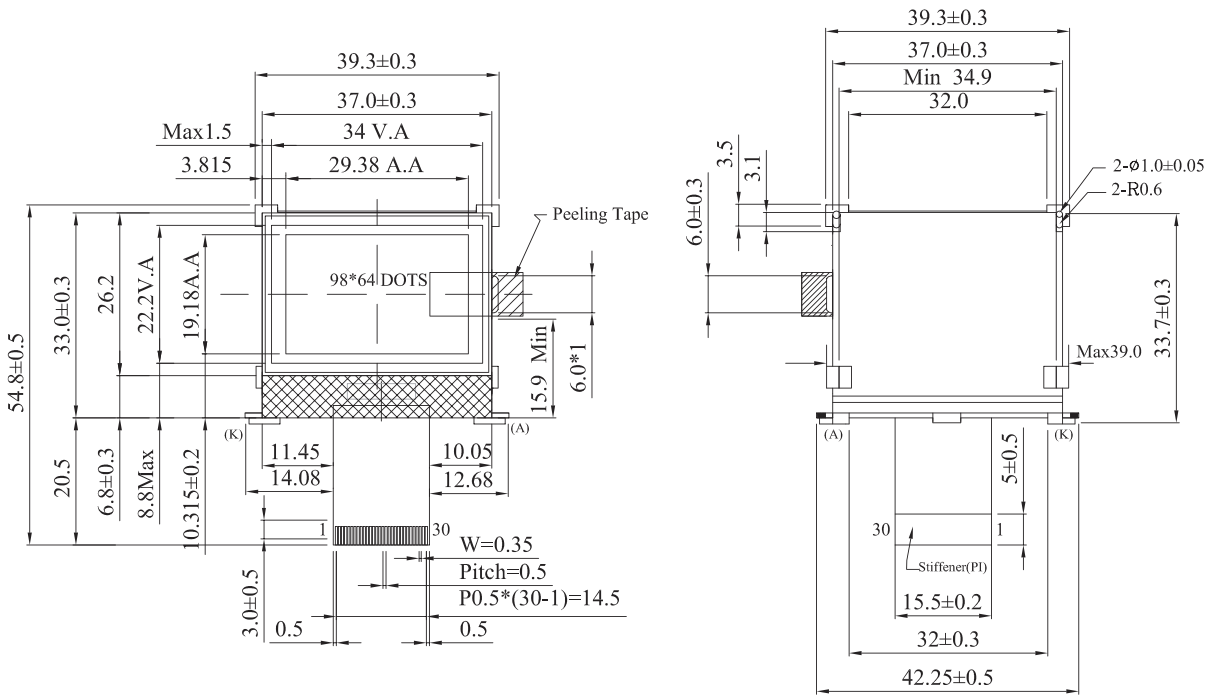
Mechanical Data

Item	Standard Value	Unit
Module Dimension	42.25 x 34.7	mm
Active Area	29.38 x 19.18	mm
Dot Pitch	0.30 x 0.30	mm
Dot Size	0.28 x 0.28	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	9.6	V

Mechanical Drawing



COB12232-01

Graphic 122x32dots

Part number list

WG12232I-□□□-□□#

Feature

1.Built-in controller SBN1661G or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.FFC
6.White LED backlight not available

Pin Assignment

Pin No.	Symbol	Description
1	V_{LED}	Power supply for B/L -
2	V_{SS}	Ground
3	V_{DD}	Power supply for logic
4	V_O	Contrast Adjustment
5	A0	Data/ Instruction select signal
6	E1	Enable signal
7	E2	Enable signal
8	DB0	Data bus line
9	DB1	Data bus line
10	DB2	Data bus line
11	DB3	Data bus line
12	DB4	Data bus line
13	DB5	Data bus line
14	DB6	Data bus line
15	DB7	Data bus line
16	R/W	Read/Write select signal

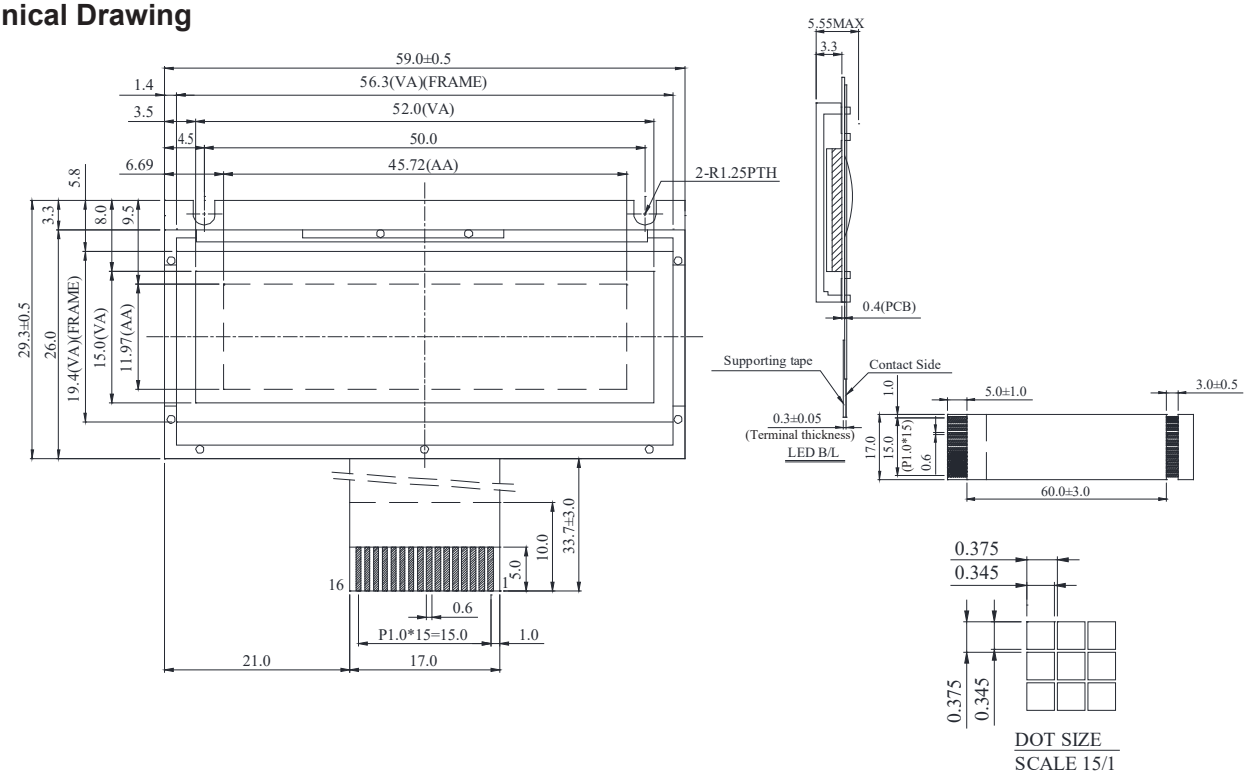
Mechanical Data

Item	Standard Value	Unit
Module Dimension	59.0 x 29.3	mm
Active Area	45.72 x 11.97	mm
Mounting Hole	50.0	mm
Dot Pitch	0.375 x 0.375	mm
Dot Size	0.345 x 0.345	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	4.80	V

Mechanical Drawing



COB12232-02

Graphic 122x32dots

Part number list

WG12232N-□□□-□□#

Feature

1.Built-in controller ST7920
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 / SPI interface
5.Built-in Chinese font
6.White LED backlight not available
7.(Option) +3V power supply with negative voltage

Pin Assignment

Pin No.	Symbol	Description
1	V_{LED}	Power supply for B/L -
2	V_{SS}	Ground
3	V_{DD}	Power supply for logic
4	V_O	Contrast Adjustment
5	RS	Data/ Instruction select signal
6	E	Enable signal
7	Vout	Positive Voltage output
8	DB0	Data bus line
9	DB1	Data bus line
10	DB2	Data bus line
11	DB3	Data bus line
12	DB4	Data bus line
13	DB5	Data bus line
14	DB6	Data bus line
15	DB7	Data bus line
16	R/W	Read/Write select signal

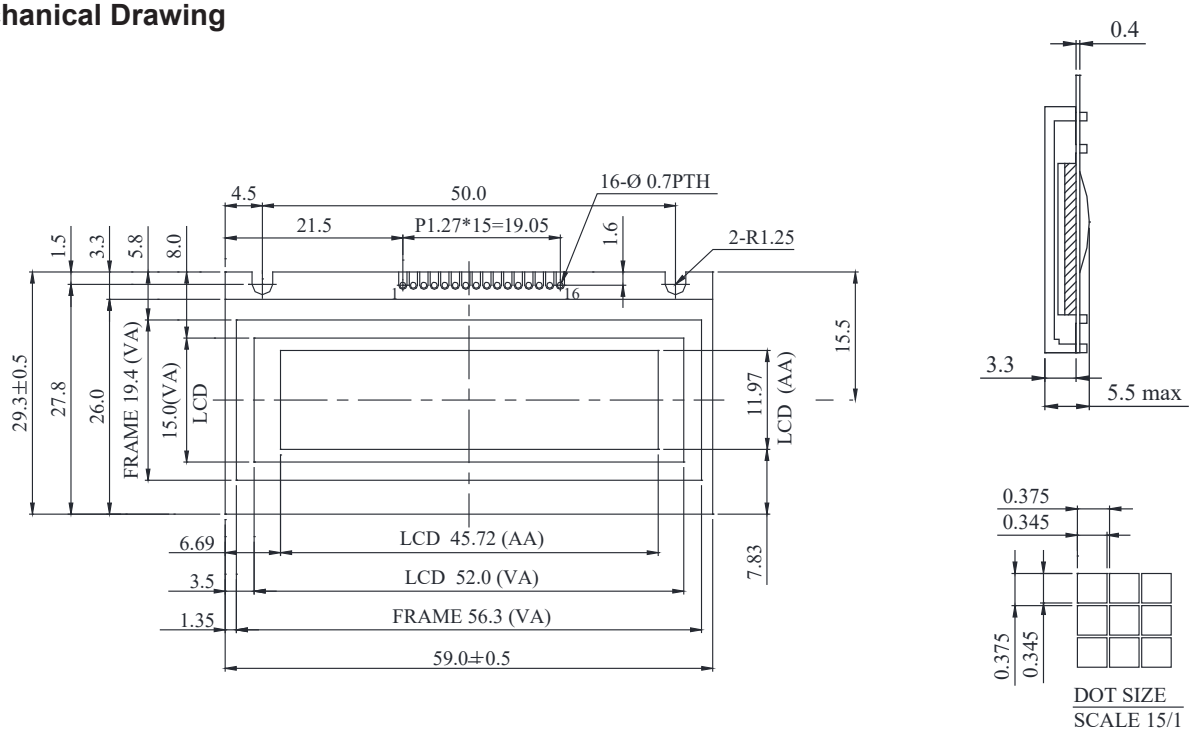
Mechanical Data

Item	Standard Value	Unit
Module Dimension	59.0 x 29.3	mm
Active Area	45.72 x 11.97	mm
Mounting Hole	50.0	mm
Dot Pitch	0.375 x 0.375	mm
Dot Size	0.345 x 0.345	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	4.35	V

Mechanical Drawing



COB12232-03

Graphic 122x32dots

Part number list

WG12232D-□□□-□□#

WG12232D1-□□□-□□#

Pin Assignment

Pin No.	Symbol	Description
1	V_{LED}	Power supply for B/L -
2	V_{SS}	Ground
3	V_{DD}	Power supply for logic
4	V_O	Contrast Adjustment
5	A0	Data/ Instruction select signal
6	E1	Enable signal
7	E2	Enable signal
8	DB0	Data bus line
9	DB1	Data bus line
10	DB2	Data bus line
11	DB3	Data bus line
12	DB4	Data bus line
13	DB5	Data bus line
14	DB6	Data bus line
15	DB7	Data bus line
16	R/W	Read/Write select signal
17	V_{EE}	Negative Voltage Output
18	NC	No connection

Feature

1.Built-in controller SBN1661G or equivalent
2.Bulit-in oscillation
3.+5V single power supply
3.6800 interface
4.Pin pitch 2.0mm version:WG12232D1
5.White LED backlight not available

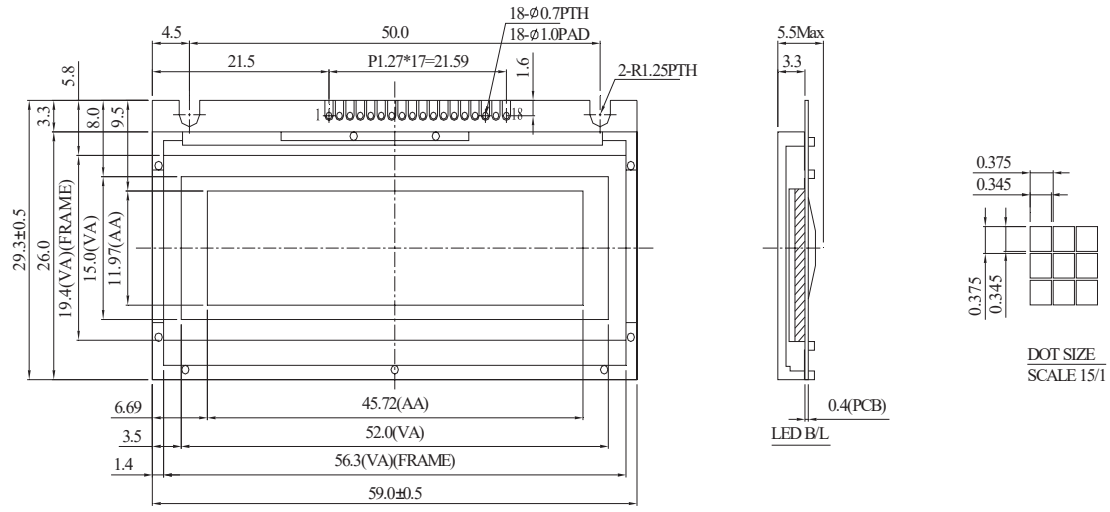
Mechanical Data

Item	Standard Value	Unit
Module Dimension	59.0 x 29.3	mm
Active Area	45.72 x 11.97	mm
Mounting Hole	50.0	mm
Dot Pitch	0.375 x 0.375	mm
Dot Size	0.345 x 0.345	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.35	V

Mechanical Drawing



COB12232-04

Graphic 122x32dots

Part number list

WG12232K-□□□-□□#

Feature

1.Built-in controller SBN1661G or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.White LED backlight not available

Pin Assignment

Pin No.	Symbol	Description
1	NC	No connection
2	V_{SS}	Ground
3	V_{DD}	Power supply for logic
4	V_O	Contrast Adjustment
5	A0	Data/ Instruction select signal
6	E1	Enable signal
7	E2	Enable signal
8	DB0	Data bus line
9	DB1	Data bus line
10	DB2	Data bus line
11	DB3	Data bus line
12	DB4	Data bus line
13	DB5	Data bus line
14	DB6	Data bus line
15	DB7	Data bus line
16	R/W	Read/Write select signal
17	V_{EE}	Negative Voltage Output
18	A	Power supply for B/L +

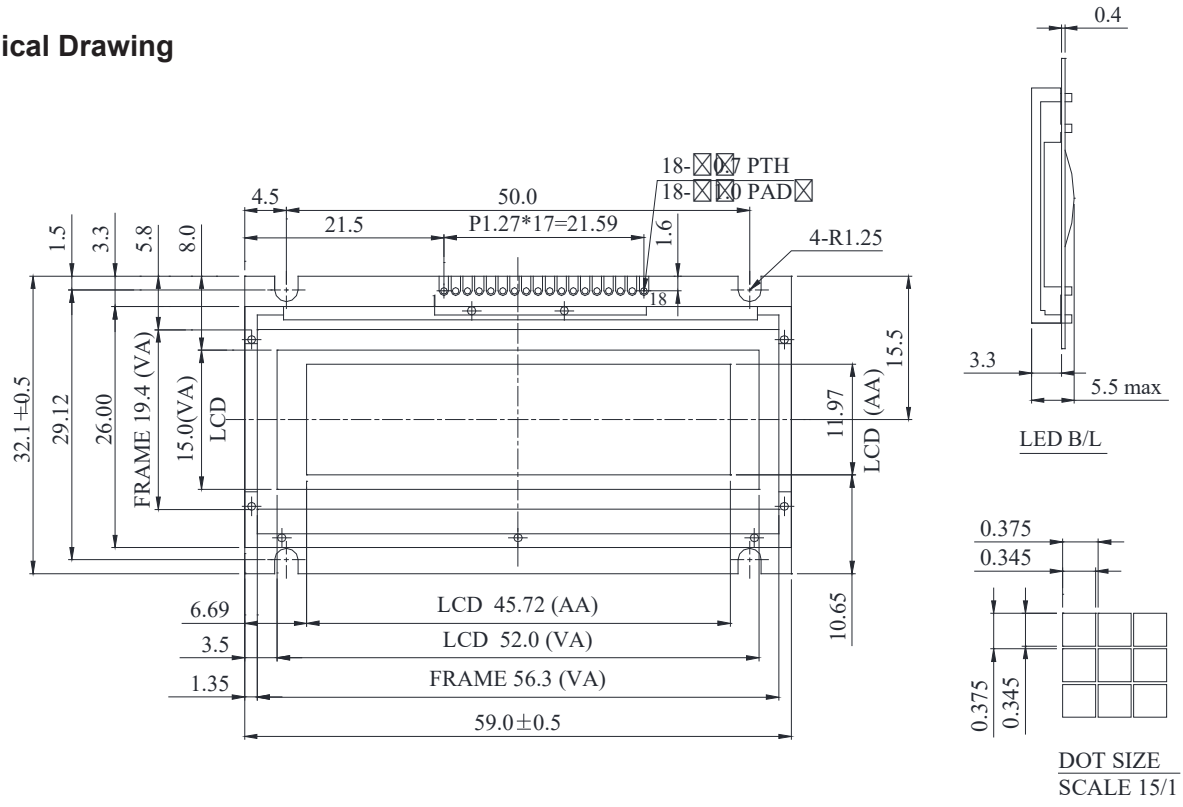
Mechanical Data

Item	Standard Value	Unit
Module Dimension	59.0 x 32.1	mm
Active Area	45.72 x 11.97	mm
Mounting Hole	50.0 x 29.12	mm
Dot Pitch	0.375 x 0.375	mm
Dot Size	0.345 x 0.345	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.70	V

Mechanical Drawing



COB12232-05

Graphic 122x32dots

Part number list

WG12232B-□□□-□□#

Feature

1.Built-in controller SBN1661G or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.FFC
6.There is 1mm gap between upper 16lines and and lower 16lines.

Pin Assignment

Pin No.	Symbol	Description
1	V_{DD}	Power supply for logic
2	V_{SS}	Ground
3	V_O	Contrast Adjustment
4	RES	Controller reset signal, Active Low
5	E1	Enable signal
6	E2	Enable signal
7	R/W	Read/Write select signal
8	A0	Data/ Instruction select signal
9	DB0	Data bus line
10	DB1	Data bus line
11	DB2	Data bus line
12	DB3	Data bus line
13	DB4	Data bus line
14	DB5	Data bus line
15	DB6	Data bus line
16	DB7	Data bus line
17	A	Power supply for B/L +
18	K	Power supply for B/L -

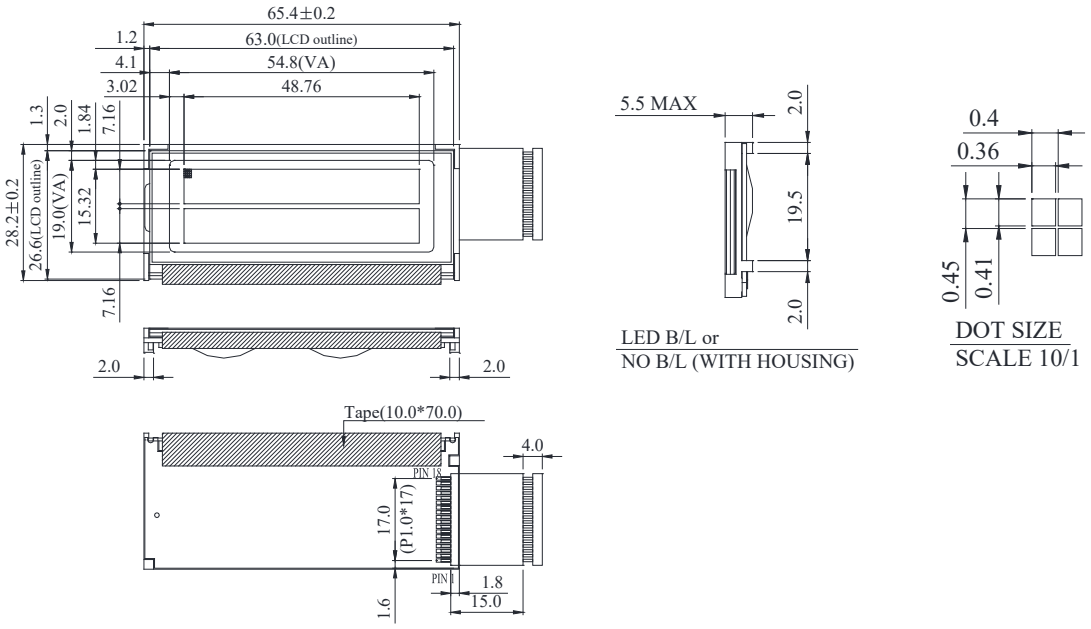
Mechanical Data

Item	Standard Value	Unit
Module Dimension	65.4 x 28.2	mm
Active Area	48.76 x 15.32	mm
Dot Pitch	0.40 x 0.45	mm
Dot Size	0.36 x 0.41	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.70	V

Mechanical Drawing



COB12232-06

Graphic 122x32dots

Part number list

WG12232G-□□□-□□#

Feature

1.Built-in controller SBN1661G or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.FFC

Pin Assignment

Pin No.	Symbol	Description
1	V_{DD}	Power supply for logic
2	V_{SS}	Ground
3	V_O	Contrast Adjustment
4	RES	Controller reset signal, Active Low
5	E1	Enable signal
6	E2	Enable signal
7	R/W	Read/Write select signal
8	A0	Data/ Instruction select signal
9	DB0	Data bus line
10	DB1	Data bus line
11	DB2	Data bus line
12	DB3	Data bus line
13	DB4	Data bus line
14	DB5	Data bus line
15	DB6	Data bus line
16	DB7	Data bus line
17	A	Power supply for B/L +
18	K	Power supply for B/L -

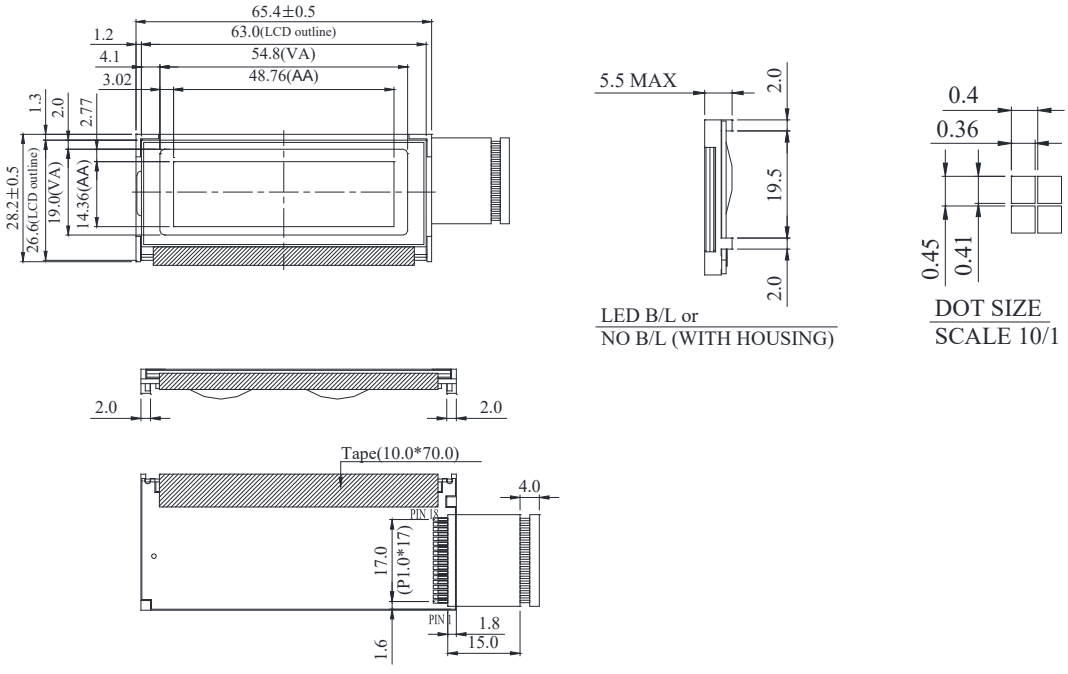
Mechanical Data

Item	Standard Value	Unit
Module Dimension	65.4 x 28.2	mm
Active Area	48.76 x 14.36	mm
Dot Pitch	0.40 x 0.45	mm
Dot Size	0.36 x 0.41	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.70	V

Mechanical Drawing



COB12232-07

Graphic 122x32dots

Part number list

WG12232BP1-□□□-□□#

Feature

1.Built-in controller SBN1661G or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5. 2.54mm Pin socket
6.White LED backlight not available
7.(Option) +3V power supply with negative voltage

Pin Assignment

Pin No.	Symbol	Description
1	V_{DD}	Power supply for logic
2	V_{SS}	Ground
3	V_O	Contrast Adjustment
4	RES	Controller reset signal, Active Low
5	E1	Enable signal
6	E2	Enable signal
7	R/W	Read/Write select signal
8	A0	Data/ Instruction select signal
9	DB0	Data bus line
10	DB1	Data bus line
11	DB2	Data bus line
12	DB3	Data bus line
13	DB4	Data bus line
14	DB5	Data bus line
15	DB6	Data bus line
16	DB7	Data bus line
17	A	Power supply for B/L +
18	K	Power supply for B/L -

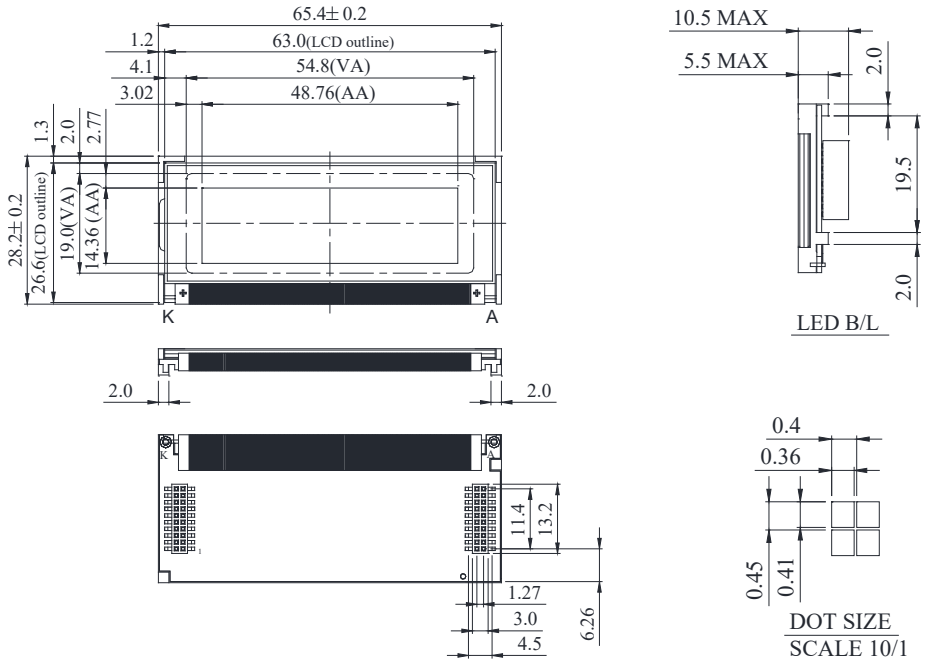
Mechanical Data

Item	Standard Value	Unit
Module Dimension	65.4 x 28.2	mm
Active Area	48.76 x 14.36	mm
Dot Pitch	0.4 x 0.45	mm
Dot Size	0.36 x 0.41	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.70	V

Mechanical Drawing



COB12232-08

Graphic 122x32dots

Part number list

WG12232M-□□□-□□#

Feature

1.Built-in controller ST7920
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 / SPI interface
5.Built-in Chinese font
6.FFC
7.There is 1mm gap between upper 16lines and and lower 16lines.

Pin Assignment

Pin No.	Symbol	Description
1	V_{DD}	Power supply for logic
2	V_{SS}	Ground
3	V_O	Contrast Adjustment
4	RES	Controller reset signal, Active Low
5	E1	Enable signal
6	E2	Enable signal
7	R/W	Read/Write select signal
8	A0	Data/ Instruction select signal
9	DB0	Data bus line
10	DB1	Data bus line
11	DB2	Data bus line
12	DB3	Data bus line
13	DB4	Data bus line
14	DB5	Data bus line
15	DB6	Data bus line
16	DB7	Data bus line
17	A	Power supply for B/L +
18	K	Power supply for B/L -

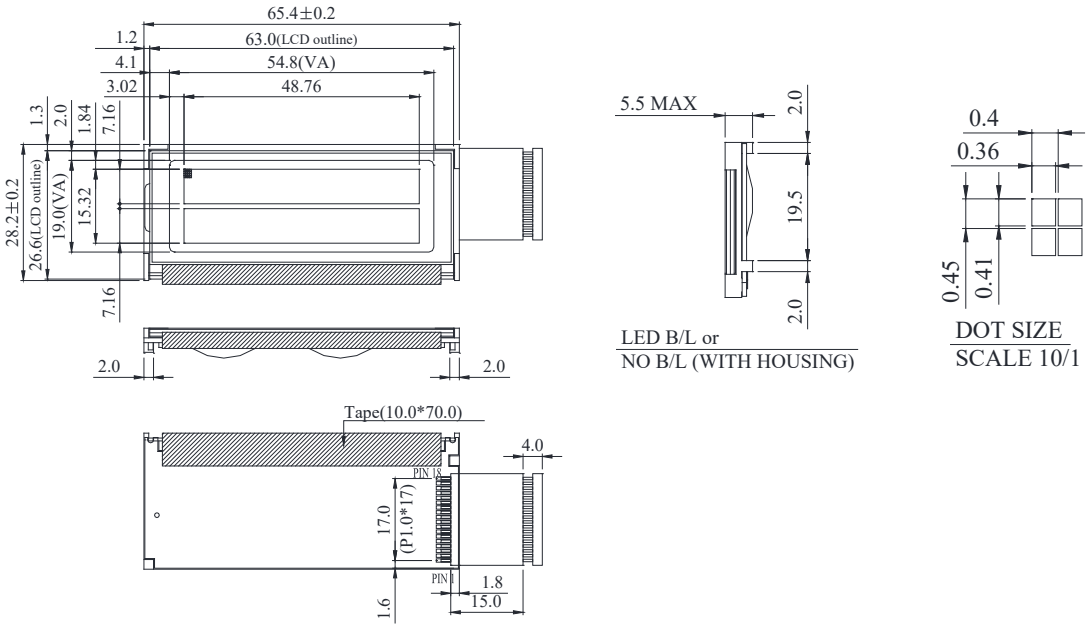
Mechanical Data

Item	Standard Value	Unit
Module Dimension	65.4 x 28.2	mm
Active Area	48.76 x 15.32	mm
Dot Pitch	0.40 x 0.45	mm
Dot Size	0.36 x 0.41	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.70	V

Mechanical Drawing



COB12232-09

Graphic 122x32dots

Part number list

BG12232B□□□□#

Feature

1.Built-in controller SBN1661G or equivalent
2.No bulit-in oscillation (Need external clock)
3.+3V /+5V single power supply
4.Need negative voltage for Vo
5. 6800/8080 interface
6.FFC

Pin Assignment

Pin	Symbol	Function
1	Ao	H: Data L: Instruction
2	CS2	L: Enable chip2
3	CS1	L: Enable chip1
4	CL	External clock input 2Khz
5	RD/ E	RD for 80 serial, E for 68 serial
6	WR(R/W)	WR for 80 serial, R/W for 68 serial
7	Vss	Power supply GND
8~15	DB0 ~ 7	Data bus line
16	Vdd	Power supply(+3V~+5V)
17	RES	H: 68 serial, L: 80 serial
18	Vo	Contrast Adjustment

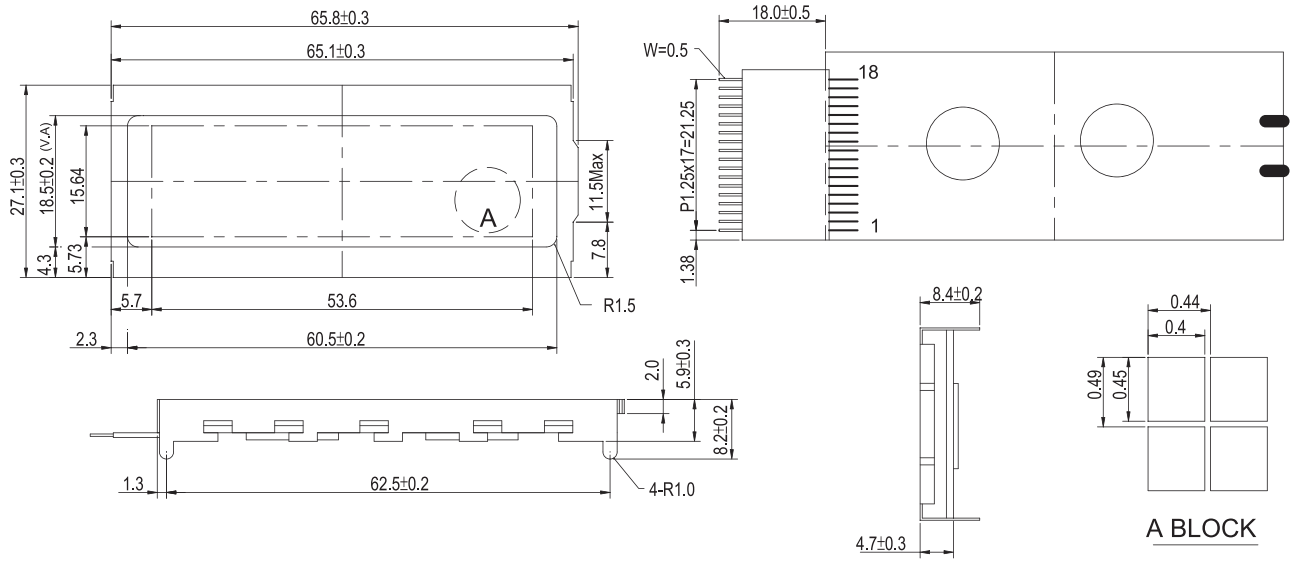
Mechanical Data

Item	Standard Value	Unit
Module Dimension	65.8 x 27.1	mm
Active Area	53.64 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.4 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	8.5	V

Mechanical Drawing



COB12232-10

Graphic 122x32dots

Part number list

SG12232S□□□-□□-□□-□

Feature

1.Bulit-in controller SED1520 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5. FFC

Pin Assignment

Pin No.	Symbol	Description
1	A0	Data/ Instruction select signal
2	E1	Chip select signal (IC1)
3	E2	Chip select signal (IC2)
4	NC	No Connection
5	NC	No Connection
6	R/W	Read/Write select signal
7	Vss	Ground
8~15	DB0~DB7	Data bus line
16	VDD	Power supply for logic
17	/RES	Reset Signal
18	Vo	Contrast Adjustment
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (-)

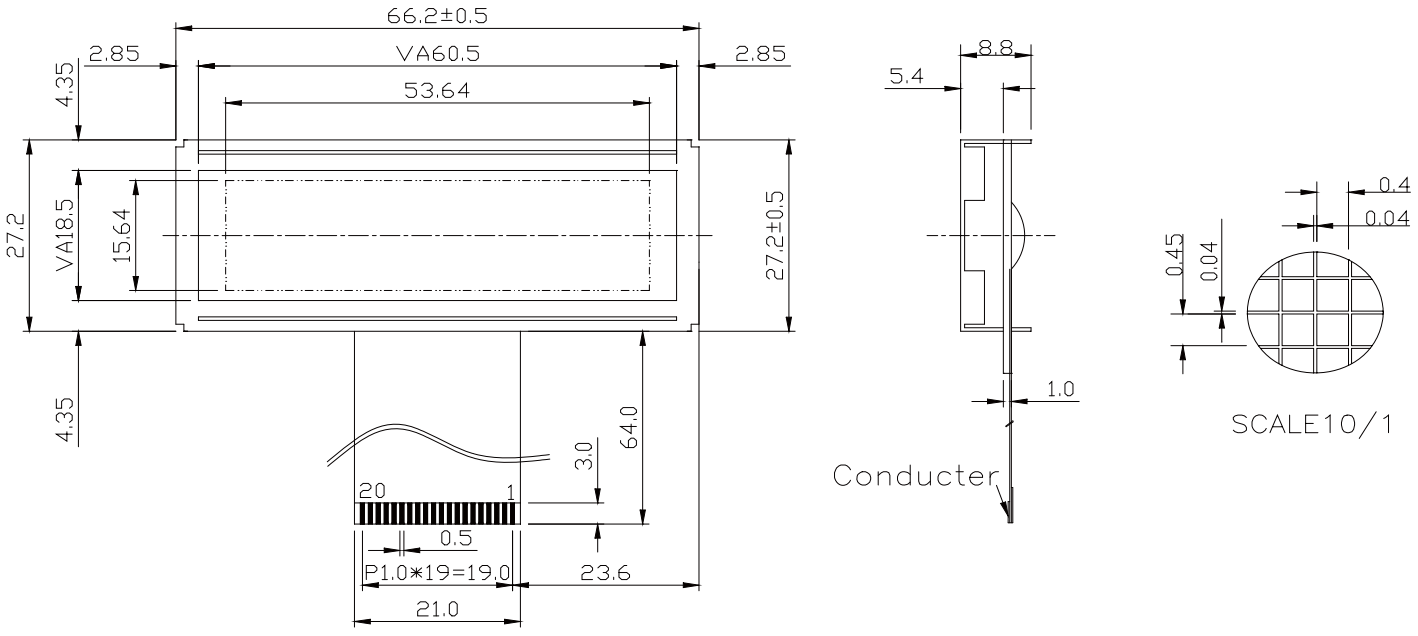
Mechanical Data

Item	Standard Value	Unit
Module Dimension	66.2 x 27.2	mm
Active Area	53.64 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.40 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	4.8	V

Mechanical Drawing



COB12232-11

Graphic 122x32dots

Part number list

SG12232Q□□□-□□-□□-□

Feature

1.Bulit-in controller SED1520 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5. FPC

Pin Assignment

Pin No.	Symbol	Description
1	Vss	Ground
2	VDD	Power supply for logic
3	Vo	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	R/W	Read/Write select signal
6	E1	Chip select signal (IC1)
7	E2	Chip select signal (IC2)
8	K	Power supply for B/L (-)
9~16	DB0~DB7	Data bus line

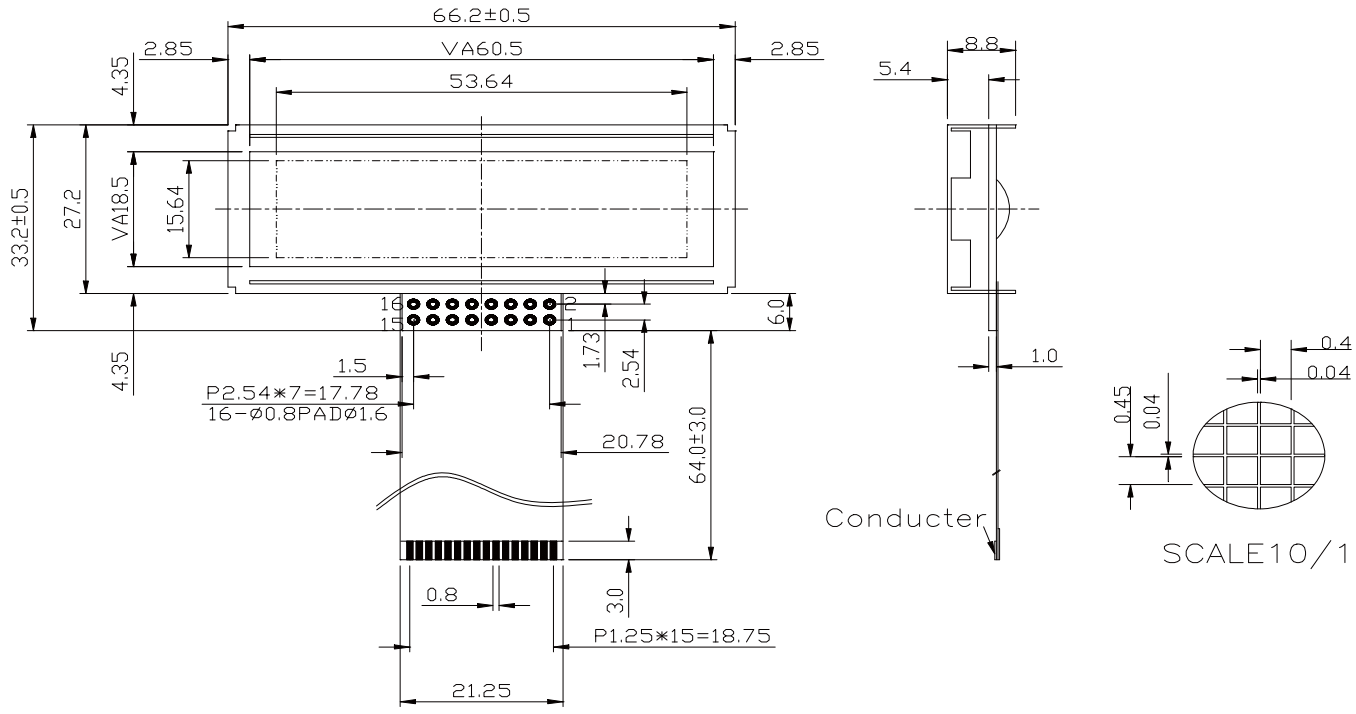
Mechanical Data

Item	Standard Value	Unit
Module Dimension	66.2 x 33.2	mm
Active Area	53.64 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.40 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	4.8	V

Mechanical Drawing



COB12232-12

Graphic 122x32dots

Part number list

BG12232E1□□□□□$

Feature

1.Built-in controller SBN1661G or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.Pin Header

Pin Assignment

Pin	Symbol	Function
1	Vss	Ground
2	Vdd	+5V
3	VO	Operating voltage for LCD
4	AO	H : Data L : Instruction
5	R/W	R/W for 68 serial
6	E1	Data latch for Chip1
7~14	DB0~DB7	Data bus line
15	E2	Data latch for Chip2
16	RES	Reset
17	A	Power Supply for B/L (+)
18	K	Power Supply for B/L (-)

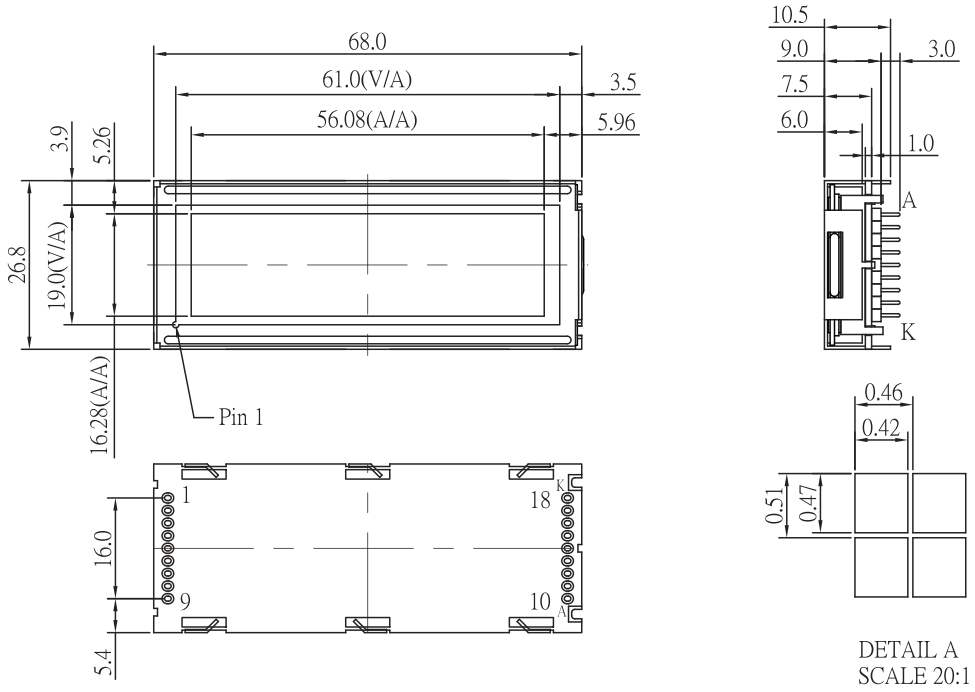
Mechanical Data

Item	Standard Value	Unit
Module Dimension	68.0 x 26.8	mm
Active Area	56.08 x 16.28	mm
Dot Pitch	0.46 x 0.51	mm
Dot Size	0.42 x 0.47	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.8	V

Mechanical Drawing



COB12232-13

Graphic 122x32dots

Part number list

WG12232O-□□□-□□#

Feature

1.Built-in controller SBN1661G or equivalent
2.Bulit-in oscillation (Option :No oscillation)
3.+5V single power supply
4. 6800 / 8080 interface
5.White LED backlight not available
6.(Option) +3V power supply with negative voltage

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{dd}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	E1	Enable signal
6	E2	Enable signal
7	NC/CL	No connection / External clock 2KHz
8	NC/E	No connection / Enable signal
9	R/W	Read/Write select signal
10	DB0	Data bus line
11	DB1	Data bus line
12	DB2	Data bus line
13	DB3	Data bus line
14	DB4	Data bus line
15	DB5	Data bus line
16	DB6	Data bus line
17	DB7	Data bus line
18	/RST	Controller reset signal, Active Low

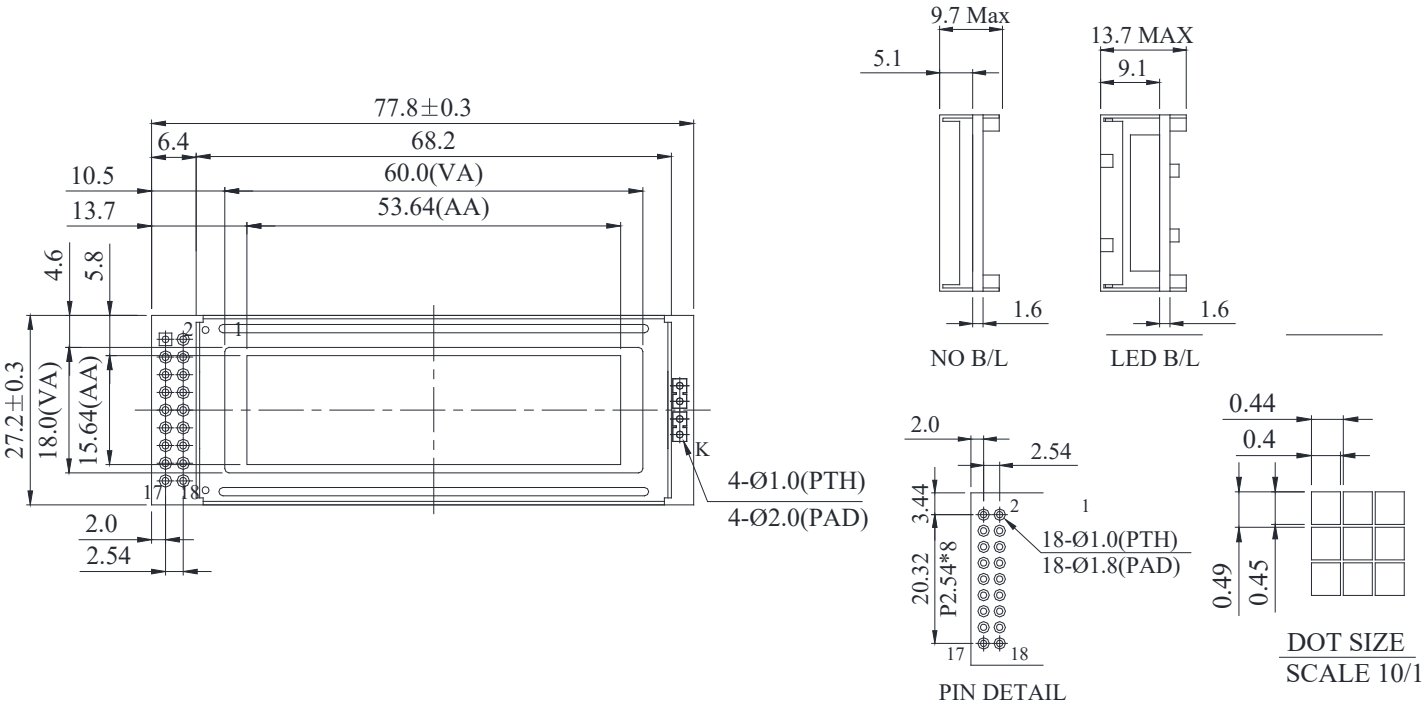
Mechanical Data

Item	Standard Value	Unit
Module Dimension	77.8 x 27.2	mm
Active Area	53.64 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.40 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	4.45	V

Mechanical Drawing



COB12232-14

Graphic 122x32dots

Part number list

WG12232E-□□□-□□#

BG12232D□□□□$

Feature

1.Bulit-in controller SBN1661G or equivalent
2.No bulit-in oscillation (Need external clock)
3.+5V single power supply
4. 6800/8080 interface
5.(Option) +3V power supply with negative voltage

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	+ 5V(+3V option)
3	Vo	Contrast adjustment
4	Ao	H --> Data L --> Instruction
5	/CS1	L --> Chip1 enable
6	/CS2	L --> Chip 2 enable
7	CL	External clock 2KHZ
8	RD/E	RD for 80 serial; /E for 68 serial
9	WR,R/W	WR for 80 serial; R/W for 68 serial
10~17	DB0~7	Data bus line
18	RES	L: 80 serial, H: 68 serial
19	A/Vee	Power supply for B/L (+)/ Negative voltage output
20	K	Power supply for B/L (GND)

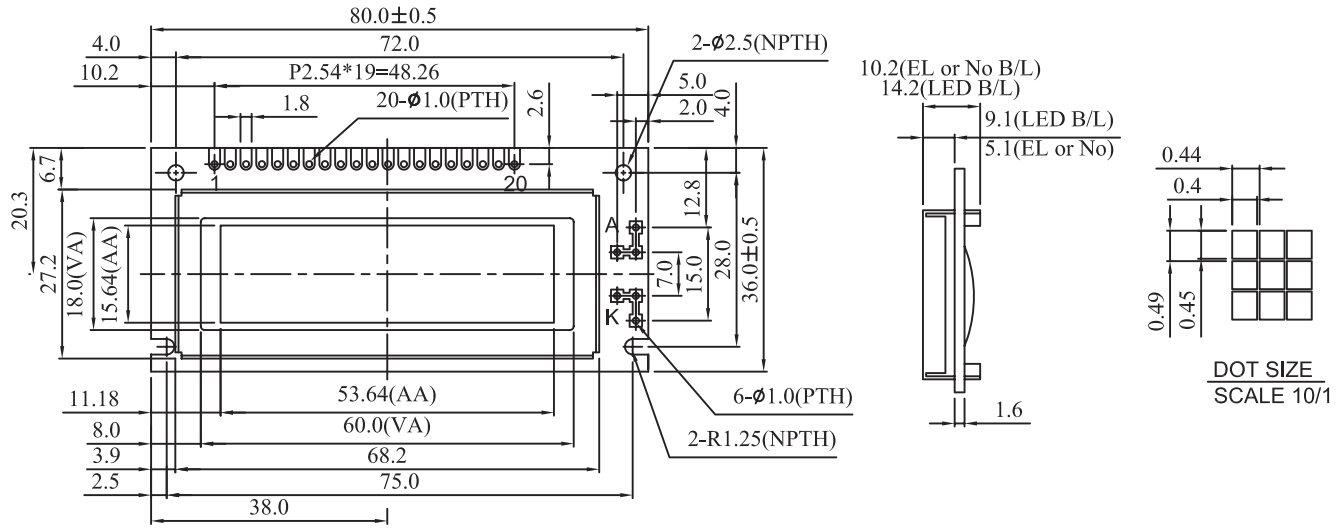
Mechanical Data

Item	Standard Value	Unit
Module Dimension	82.0 x 36.0	mm
Active Area	63.64 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.40 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.8	V

Mechanical Drawing



COB12232-15

Graphic 122x32dots

Part number list

WG12232J-□□□-□□#

BG12232D1□□□□$

Feature

1.Bulit-in controller SBN1661G or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.(Option) +3V power supply with negative voltage

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	+ 5V(+3V option)
3	Vo	Contrast adjustment
4	Ao	H --> Data L --> Instruction
5	E1	Data latch for chip 1
6	E2	Data latch for chip2
7	NC	No connection
8	NC	No connection
9	R/W	H:read , L:write
10~17	DB0~7	Data bus line
18	/RES	Reset signal
19	A/Vee	Power supply for B/L (+)/ Negative voltage output
20	K	Power supply for B/L (GND)

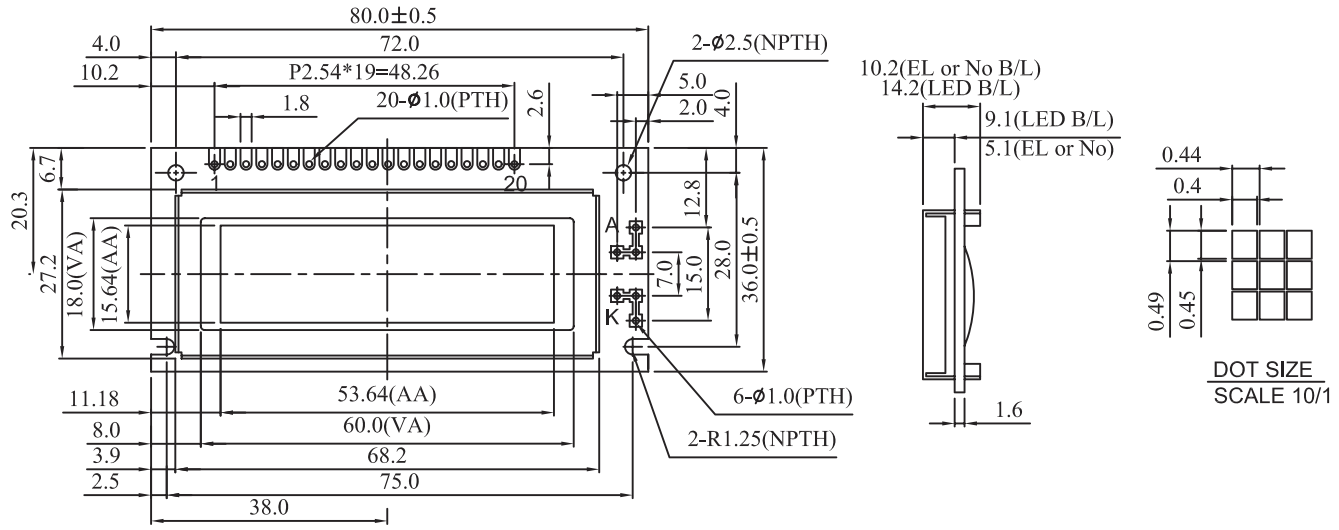
Mechanical Data

Item	Standard Value	Unit
Module Dimension	82.0 x 36.0	mm
Active Area	63.64 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.40 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	4.8	V

Mechanical Drawing



COB12232-16

Graphic 122x32dots

Part number list

WG12232A-□□□-□□#

BG12232A□□□□$

SG12232A□□□-□□-□□-□

Feature

1.Bulit-in controller SBN1661G or equivalent
2.No bulit-in oscillation (Need external clock)
3.+5V single power supply
4. 6800/8080 interface
5.(Option) +3V power supply with negative voltage

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	+ 5V(+3V option)
3	Vo	Contrast adjustment
4	Ao	H --> Data L --> Instruction
5	/CS1	L --> Chip1 enable
6	/CS2	L --> Chip 2 enable
7	CL	External clock 2KHZ
8	RD/E	RD for 80 serial; /E for 68 serial
9	WR,R/W	WR for 80 serial; R/W for 68 serial
10~17	DB0~7	Data bus line
18	RES	L: 80 serial, H: 68 serial
19	A/Vee	Power supply for B/L (+)/ Negative voltage output
20	K	Power supply for B/L (GND)

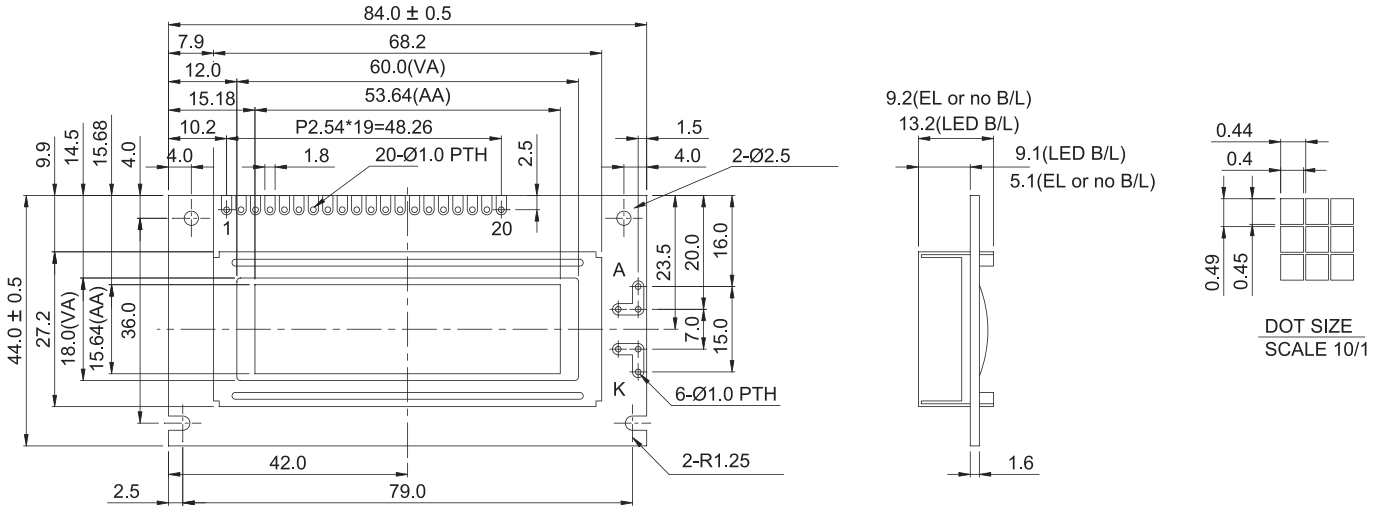
Mechanical Data

Item	Standard Value	Unit
Module Dimension	82.0 x 44.0	mm
Active Area	53.64 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.40 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.8	V

Mechanical Drawing



COB12232-17

Graphic 122x32dots

Part number list

WG12232C-□□□-□□#

BG12232A1□□□□$

SG12232M□□□-□□-□□-□

Feature

1.Bulit-in controller SBN1661G or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.(Option) +3V power supply with negative voltage

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	+ 5V(+3V option)
3	Vo	Contrast adjustment
4	Ao	H --> Data L --> Instruction
5	E1	Data latch for chip 1
6	E2	Data latch for chip2
7	NC	No connection
8	NC	No connection
9	R/W	H:read , L:write
10~17	DB0~7	Data bus line
18	/RES	Reset signal
19	A/Vee	Power supply for B/L (+)/ Negative voltage output
20	K	Power supply for B/L (GND)

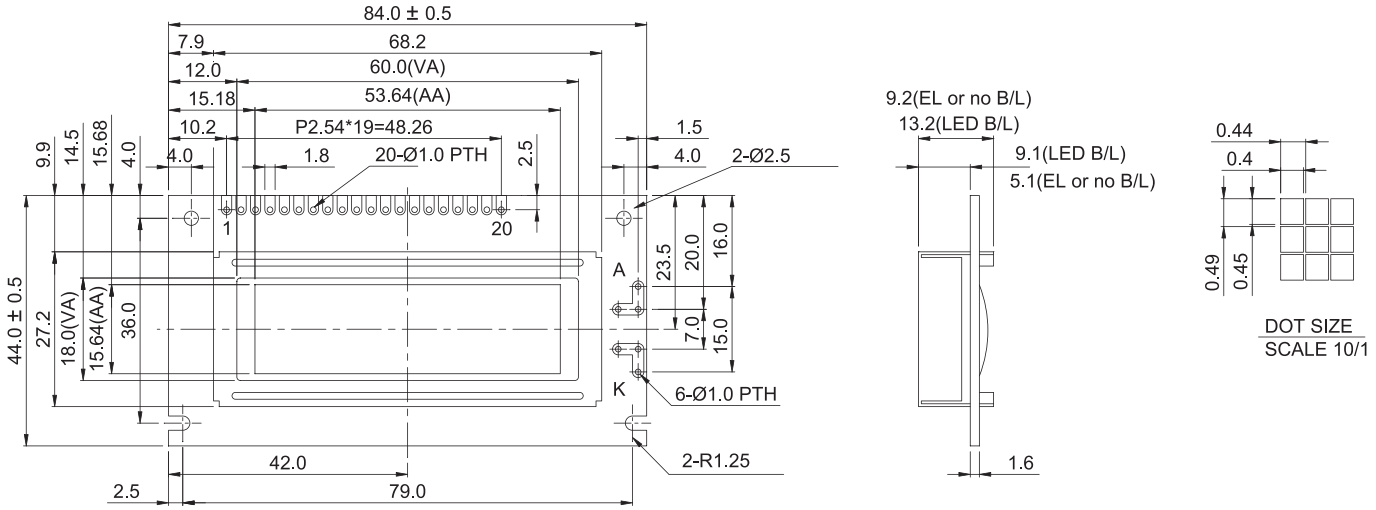
Mechanical Data

Item	Standard Value	Unit
Module Dimension	82.0 x 44.0	mm
Active Area	53.64 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.40 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.8	V

Mechanical Drawing



COB12232-18

Graphic 122x32dots

Part number list

SG12232D□□□-□□-□□-□

Feature

1.Bulit-in controller SED1520 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin No.	Symbol	Description
1	Vss	Ground
2	VDD	Power supply for logic
3	Vo	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	E1	Chip select signal (IC1)
6	E2	Chip select signal (IC2)
7~14	DB0~DB7	Data bus line

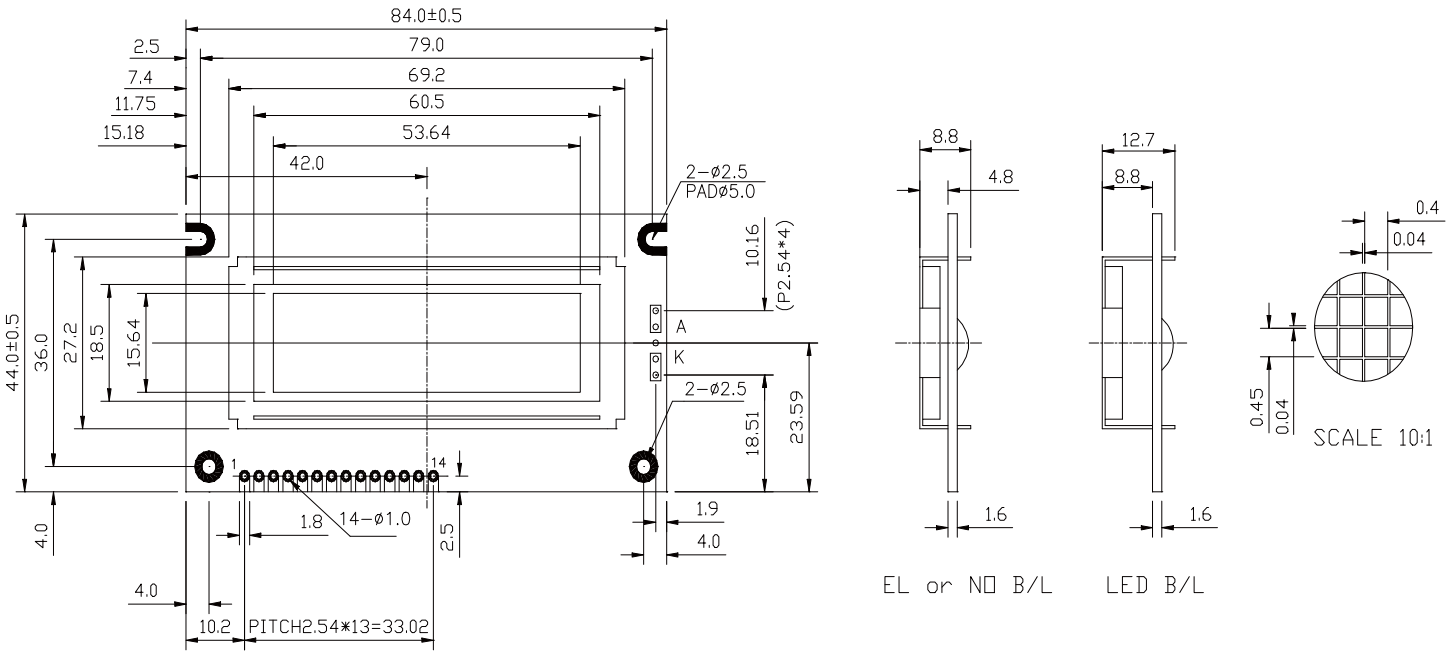
Mechanical Data

Item	Standard Value	Unit
Module Dimension	84.0 x 44.0	mm
Active Area	53.64 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.40 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	4.8	V

Mechanical Drawing



COB12232-19

Graphic 122x32dots

Part number list

WG12232L-□□□-□□#

Feature

1.Built-in controller ST7920
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 / SPI interface
5.Built-in Chinese font

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	RS	Data/ Instruction select signal
5	Vout	Positive Voltage output
6	NC	No connection
7	NC	No connection
8	E	Enable signal
9	R/W	Read/Write select signal
10	DB0	Data bus line
11	DB1	Data bus line
12	DB2	Data bus line
13	DB3	Data bus line
14	DB4	Data bus line
15	DB5	Data bus line
16	DB6	Data bus line
17	DB7	Data bus line
18	/RES	Controller reset signal, Active Low
19	A	Power supply for B/L +
20	K	Power supply for B/L -

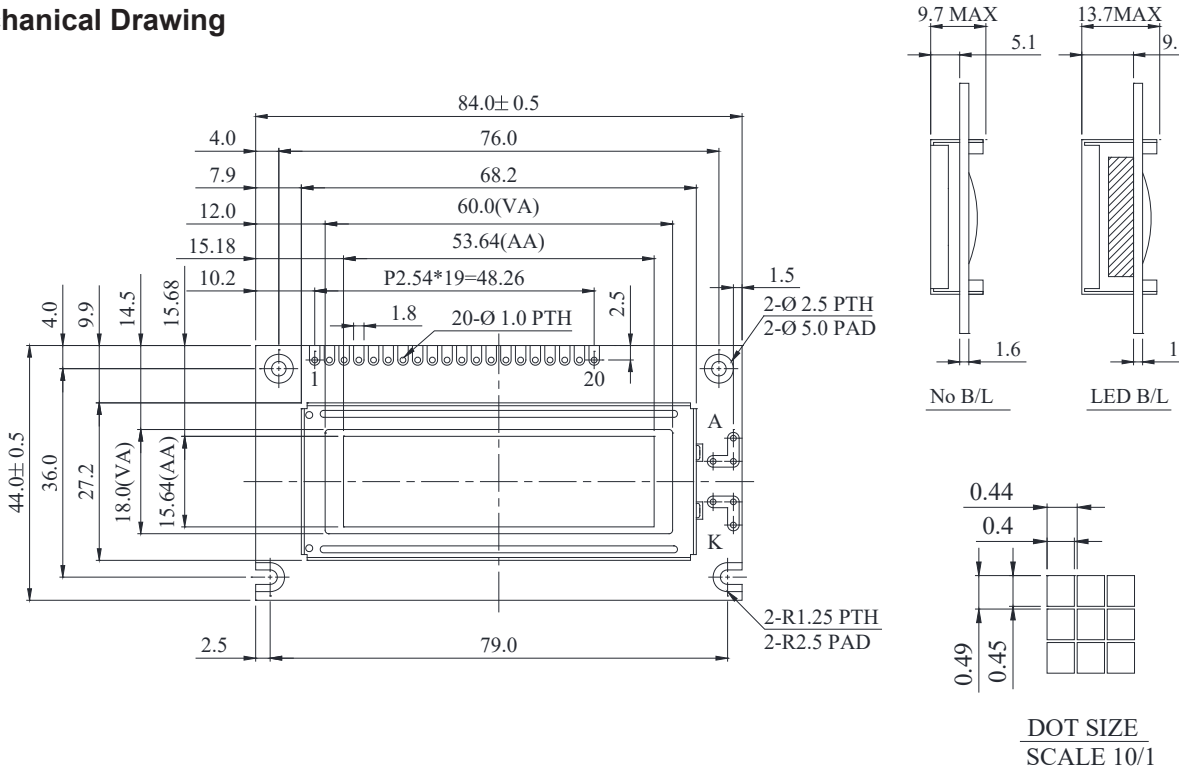
Mechanical Data

Item	Standard Value	Unit
Module Dimension	84.0 x 44.0	mm
Active Area	53.64 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.40 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.4	V

Mechanical Drawing



COB12232-20

Graphic 122x32dots

Part number list

SG12232C□□□-□□-□□-□

Feature

1.Bulit-in controller SED1520 or equivalent
2.No bulit-in oscillation (Need external clock)
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	CS1	Chip Select Signal for IC1
6	CS2	Chip Select Signal for IC2
7	CL	External clock 2KHZ
8	E	Enable Signal
9	R/W	Read/Write select signal
10~17	DB0~7	Data Bus Line
18	/RES	Reset Signal
19	A	Power supply for B/L +
20	K	Power supply for B/L -

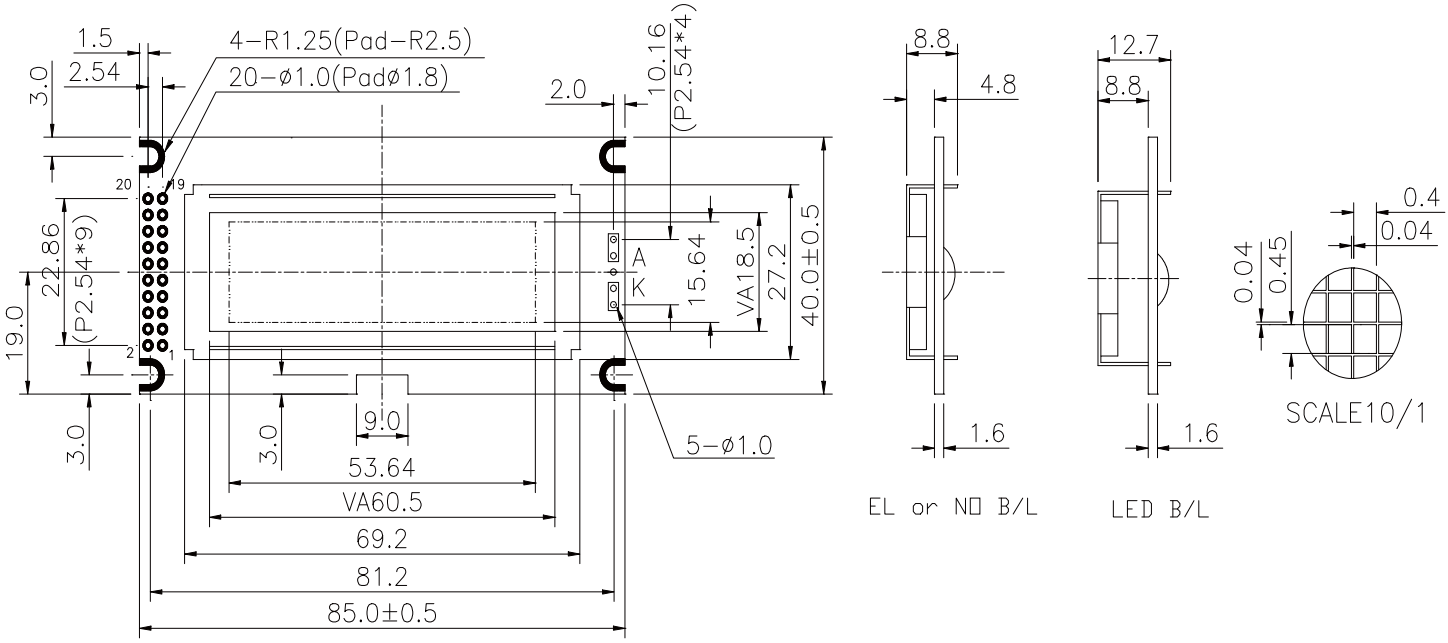
Mechanical Data

Item	Standard Value	Unit
Module Dimension	85.0 x 40.0	mm
Active Area	53.64 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.40 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	4.8	V

Mechanical Drawing



COB12232-21

Graphic 122x32dots

Part number list

SG12232N□□□-□□-□□-□

Feature

1.Bulit-in controller SED1520 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	CS1	Chip Select Signal for IC1
6	CS2	Chip Select Signal for IC2
7	NC	No connection
8	NC	No connection
9	R/W	Read/Write select signal
10~17	DB0~7	Data Bus Line
18	/RES	Reset Signal
19	A	Power supply for B/L +
20	K	Power supply for B/L -

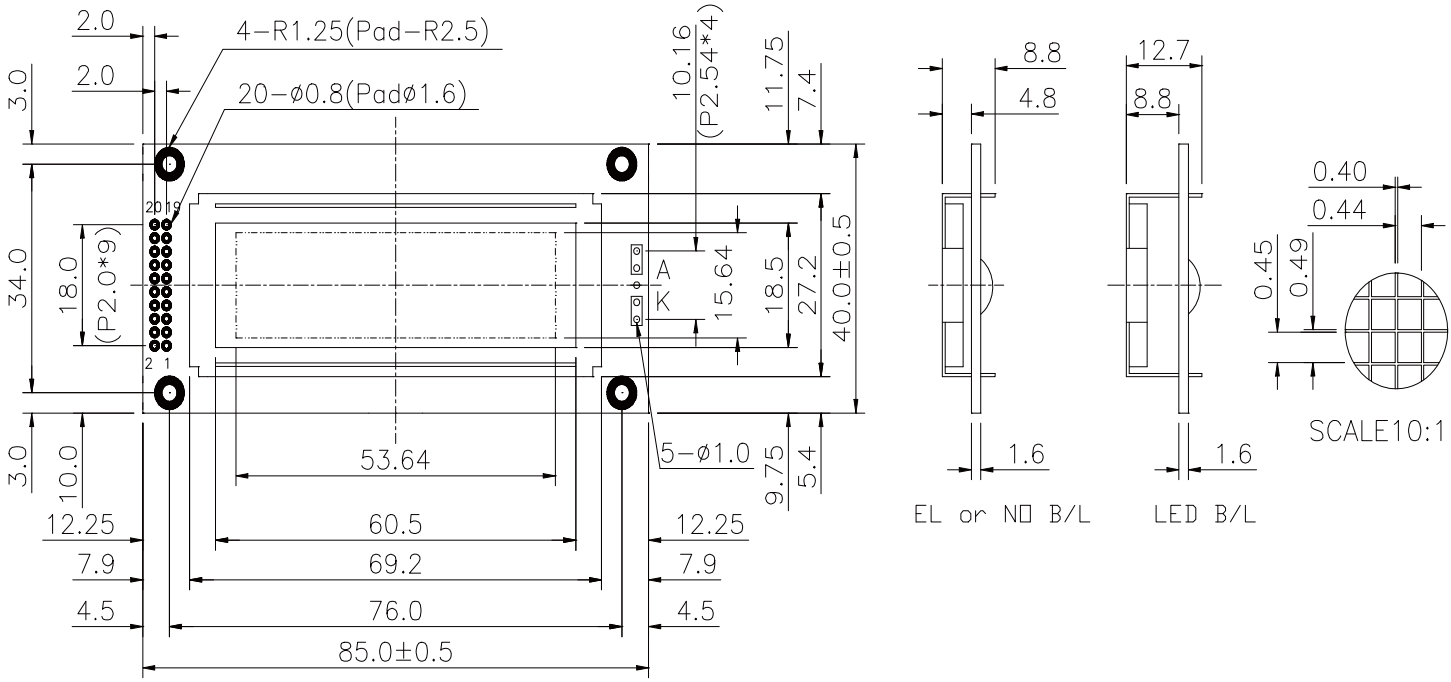
Mechanical Data

Item	Standard Value	Unit
Module Dimension	85.0 x 40.0	mm
Active Area	53.64 x 15.64	mm
Dot Pitch	0.44 x 0.49	mm
Dot Size	0.40 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.8	V

Mechanical Drawing



COB12232-22

Graphic 122x32dots

Part number list

SG12232P□□□-□□-□□-□

Feature

1.Bulit-in controller SED1520 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.RGB LED backlight

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	R/W	Read/Write select signal
6	CS1	Chip Select Signal for IC1
7	CS2	Chip Select Signal for IC2
8~15	DB0~7	Data Bus Line
16	/RES	Reset Signal
17	A	Power supply for B/L +
18	K1	Red LED power supply (-)
19	K2	Green LED power supply (-)
20	K3	Blue LED power supply (-)

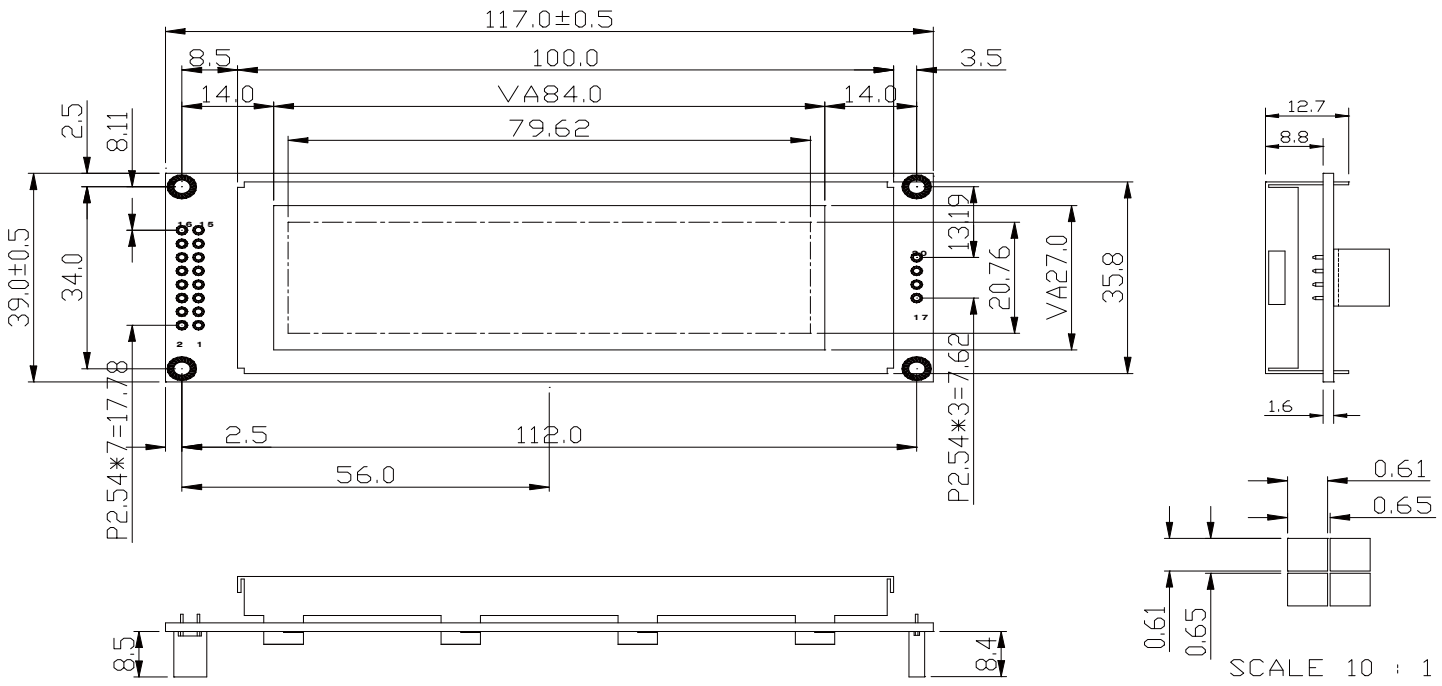
Mechanical Data

Item	Standard Value	Unit
Module Dimension	117.0 x 39.0	mm
Active Area	73.62 x 20.76	mm
Dot Pitch	0.65 x 0.65	mm
Dot Size	0.61 x 0.61	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.8	V

Mechanical Drawing



COB12832-01

Graphic 128x32dots

Part number list

SG12832A□□□-□□-□□-□

Feature

1.Bulit-in controller ST7920
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5. Built-in Chinese font

Pin Assignment

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	R/W	Read/Write select signal
	E	Enable Signal
7~14	DB0~7	Data Bus Line
15	A	Power supply for B/L +
16	K	Power supply for B/L -

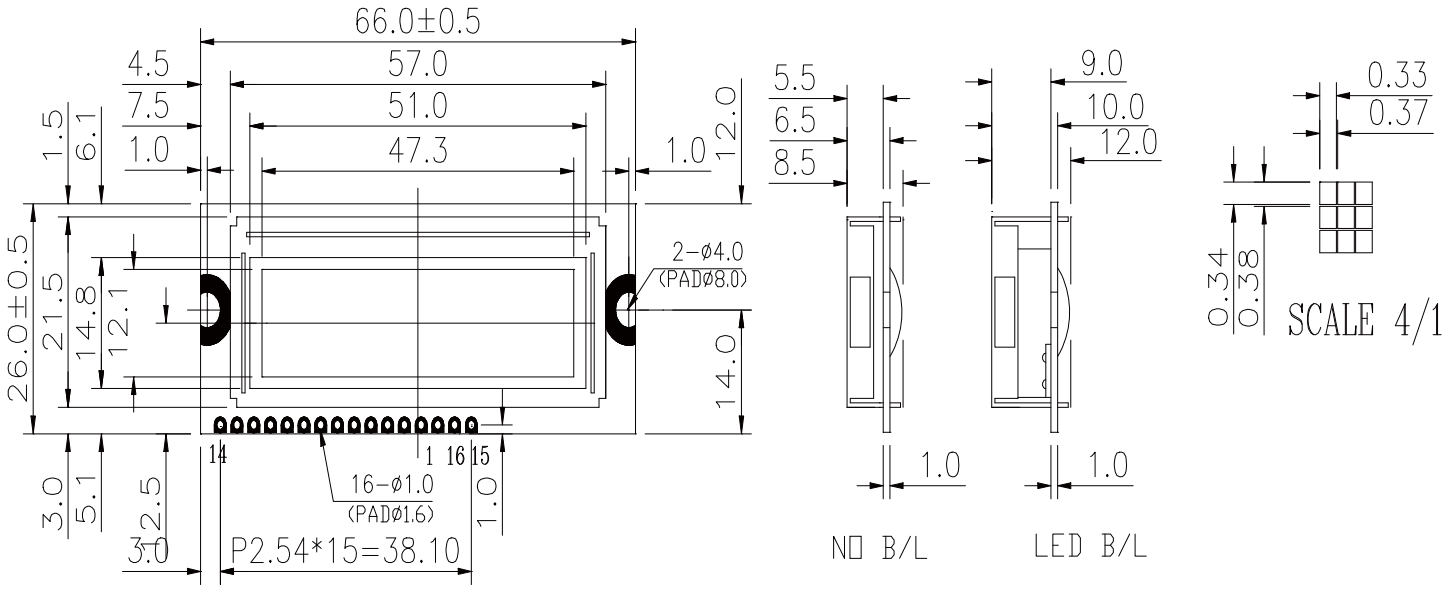
Mechanical Data

Item	Standard Value	Unit
Module Dimension	66.0 x 26.0	mm
Active Area	47.32 x 12.12	mm
Dot Pitch	0.37 x 0.38	mm
Dot Size	0.33 x 0.34	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.8	V

Mechanical Drawing



COB12832-02

Graphic 128x32dots

Part number list

BG12832C□□□□□$

Feature

1.Built-in controller NT7108 or equivalent
2.Bulit-in oscillation
3.+5V power supply and and negative voltage for LCD
4. 6800 interface

Pin Assignment

Pin	Symbol	Function
1	Vdd	Supply voltage for logic
2	Vss	GND
3	VLC	Supply voltage for LCD
4~11	DB0~7	Data bus line
12	CS	Chip select, active low
13	RST	Reset signal, active low
14	R/W	H: Read(MPU←Module) L :Write(MPU→Module)
15	D/I	H: Data , L: Instruction
16	E	Enable signal, active high
17	FGND	Frame ground
18	NC	No connection
19	LEDA	Power supply for B/L (+)
20	LEDB	Power supply for B/L (GND)

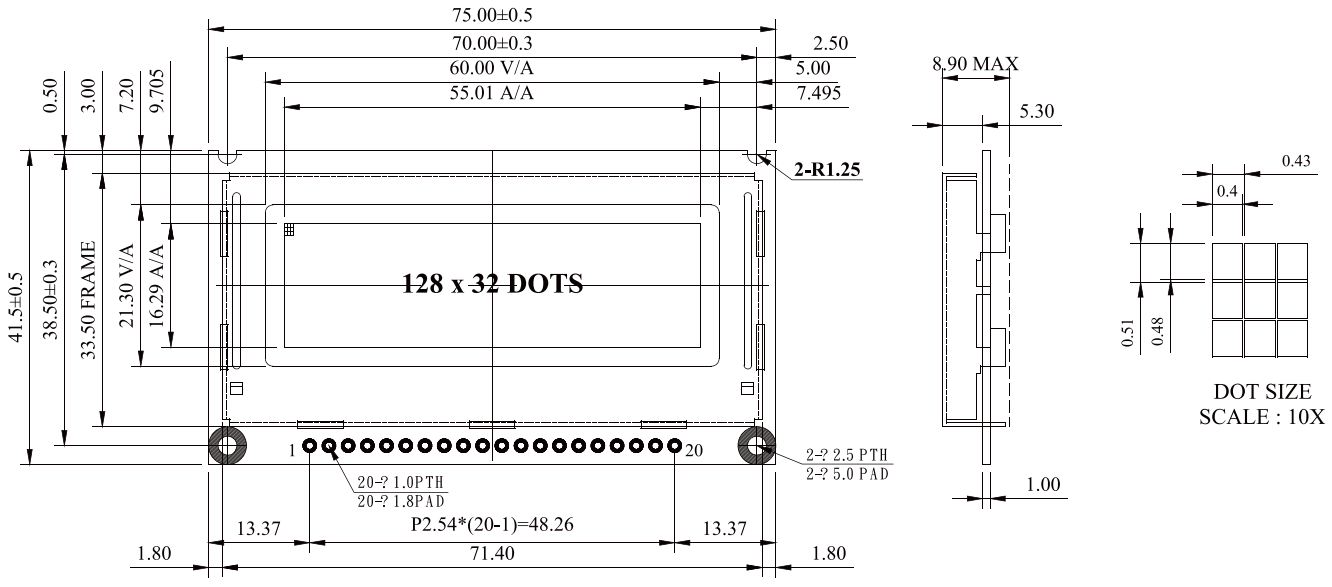
Mechanical Data

Item	Standard Value	Unit
Module Dimension	75.0 x 41.5	mm
Active Area	55.01 x 16.29	mm
Dot Pitch	0.43 x 0.51	mm
Dot Size	0.40 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	12.8	V

Mechanical Drawing



COB12832-03

Graphic 128x32dots

Part number list

SG12832C□□□-□□-□□-□

Feature

1.Bulit-in controller RW1065 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	CS1	Chip Select Signal for IC1
6	CS2	Chip Select Signal for IC2
7	NC	No connection
8	E	Enable Signal
9	R/W	Read/Write select signal
10~17	DB0~7	Data Bus Line
18	/RES	Reset Signal
19	A	Power supply for B/L +
20	K	Power supply for B/L -

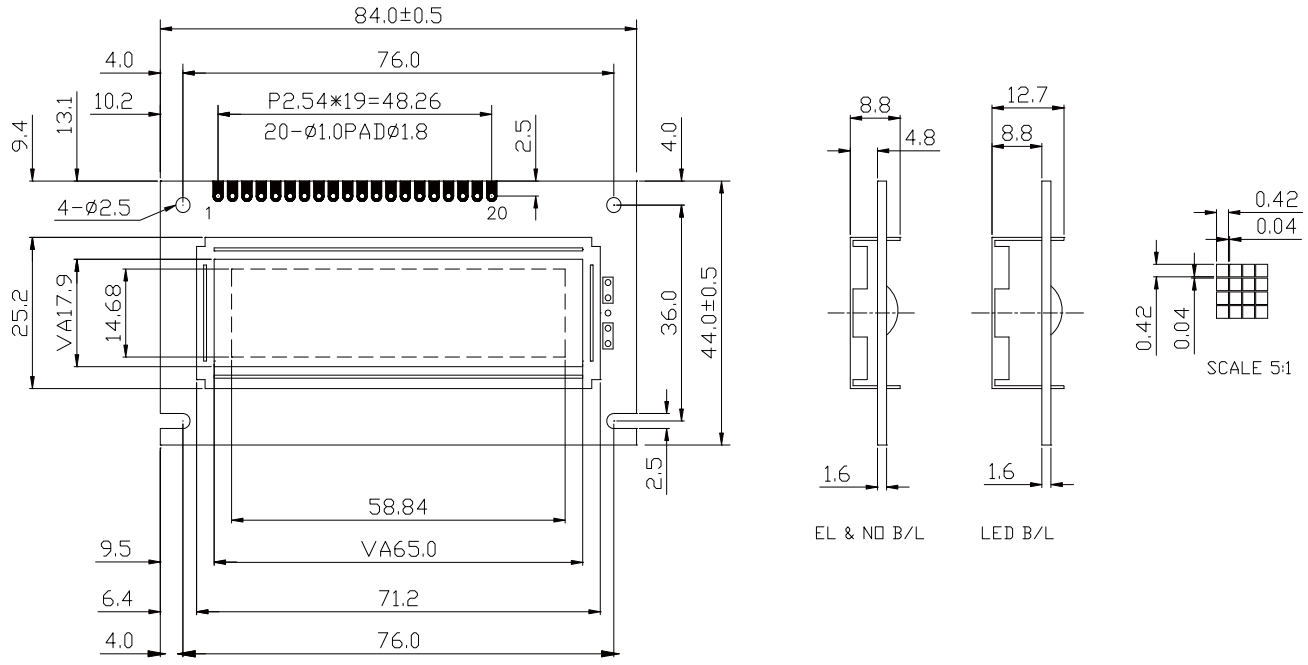
Mechanical Data

Item	Standard Value	Unit
Module Dimension	84.0 x 44.0	mm
Active Area	58.84 x 14.68	mm
Dot Pitch	0.46 x 0.46	mm
Dot Size	0.42 x 0.42	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.8	V

Mechanical Drawing



COG12832-01

Graphic 128x32dots

Part number list

BO12832A□□□□$

Feature

1.Bulit-in controller PCF8531
2.Bulit-in oscillation and voltage regulator
3.+3V / +5V single power supply
4.I2C interface
5.(Option) LED backlight

Pin Assignment

Pin	Symbol	Function
1	Vlcd	LCD Power supply
2	/RESET	Reset signal
3	Vdd	Power supply for logic
4	SDA	Serial data input
5	Vss	Power supply logic GND
6	SCL	Serial colock line input

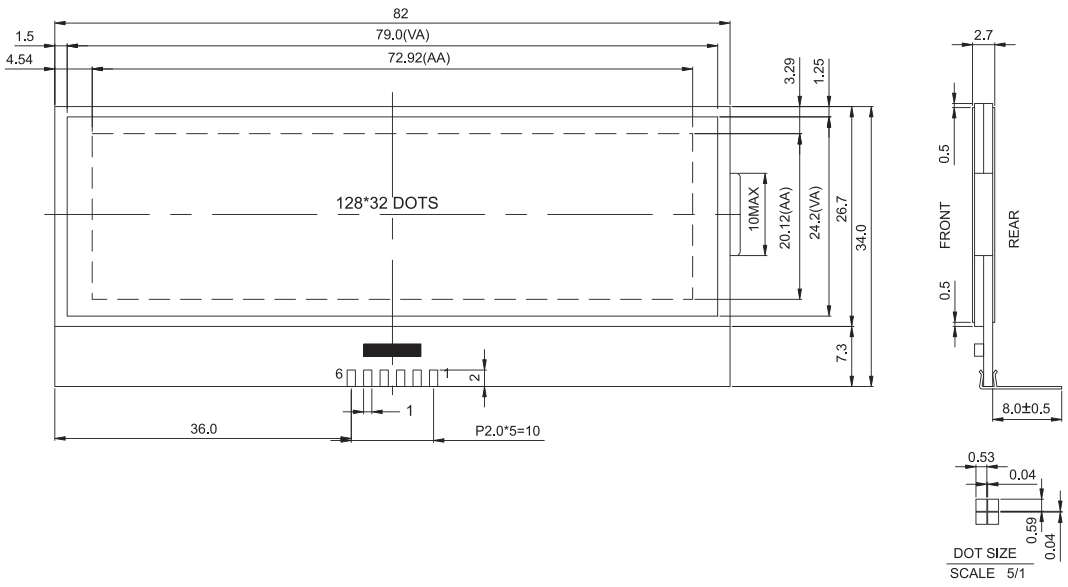
Mechanical Data

Item	Standard Value	Unit
Module Dimension	82.0 x 34.0	mm
Active Area	72.92 x 20.12	mm
Dot Pitch	0.57 x 0.63	mm
Dot Size	0.53 x 0.59	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	6.0	V

Mechanical Drawing



COB12864-01

Graphic 128x64dots

Part number list

BG12864H□□□□□$
WG12864E-□□□-□□#
WG12864EP1-□□□-□□#

Feature

1.Built-in controller NT7108 or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface
5.EL backlgiht with inverter
6.(Option) +3V single power supply
7.(Option) LED backlight model WG12864EP1
Outline 55.0x47.0mm

Pin Assignment

Pin	Symbol	Function
1	Vss	Power supply GND
2	Vdd	+5V(+3V option)
3	Vo	Contrast adjustment
4	D/I	Data/ Instruction
5	R/W	Data read/write
6	E	Enable signal
7~14	DB0~7	Data bus line
15	CS1	Chip enable (segment 1 - 64)
16	CS2	Chip enable (segment 65 - 128)
17	/RST	Reset signal
18	Vee	Negative voltage output
19	BL+	EL backlight power on/off
20	NC	No connection

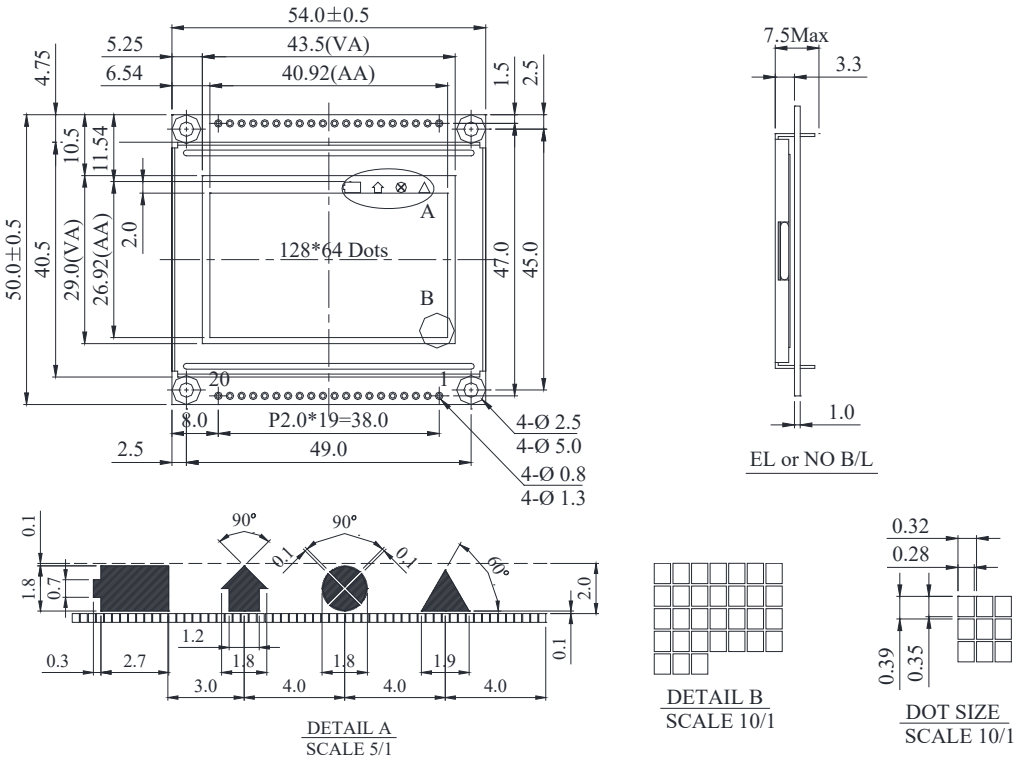
Mechanical Data

Item	Standard Value	Unit
Module Dimension	54.0 x 50.0	mm
Active Area	40.92 x 26.92	mm
Dot Pitch	0.32 x 0.39	mm
Dot Size	0.28 x 0.35	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	7.8	V

Mechanical Drawing



COB12864-02

Graphic 128x64dots

Part number list

BG12864J□□□□□$

Feature

1.Built-in controller SBN0064G or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface
5. Pin header

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	Power supply
3	VO	Operating voltage for LCD
4	/RST	Reset signal
5	D/I	Data/Instruction
6	R/W	Data read/write
7	E1	Enable signal for IC2 (segment 1~64)
8	E2	Enable signal for IC3 (segment 65~128)
9	CS1L	Chip selection for IC2 (segment 1~64)
10	CS1H	
11	CS2L	Chip selection for IC3 (segment 65~128)
12	CS2H	
13	VEE	Negative voltage output
14	NC	No connection
15~22	DB0~BD7	Data bus
23	A	Power supply for B/L (+)
24	K	Power supply for B/L (GND)

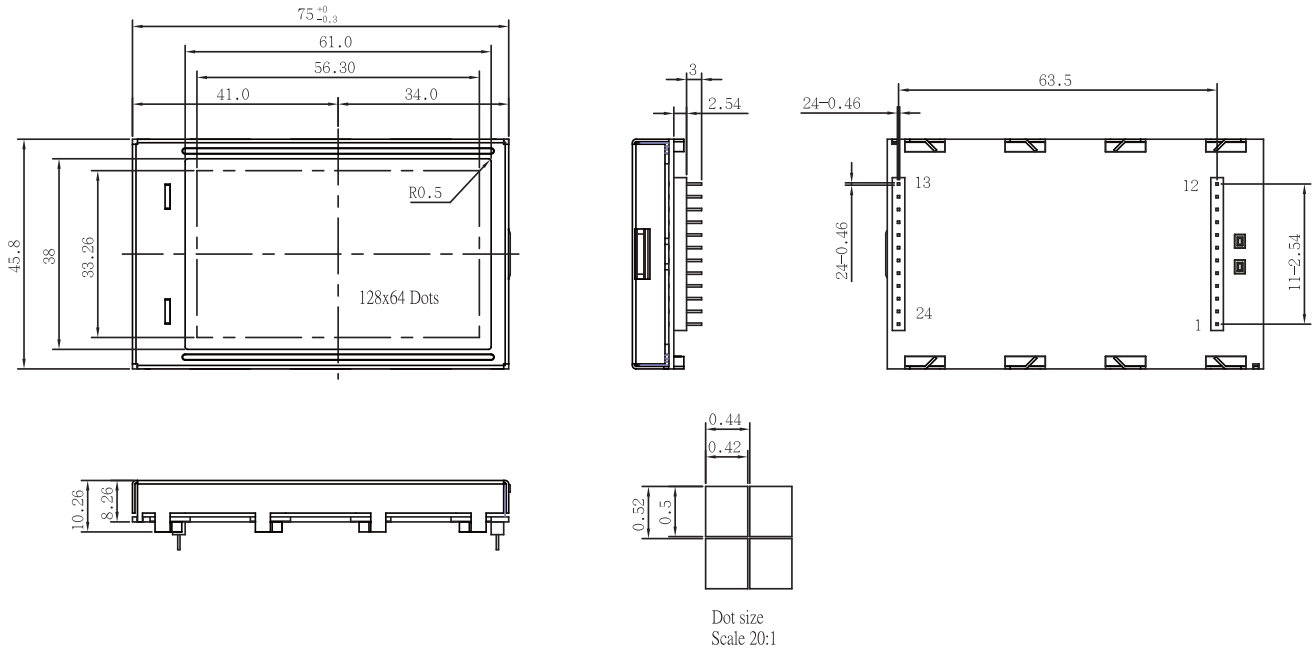
Mechanical Data

Item	Standard Value	Unit
Module Dimension	75.0 x 45.8	mm
Active Area	56.30 x 33.26	mm
Dot Pitch	0.44 x 0.52	mm
Dot Size	0.42 x 0.50	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	10.0	V

Mechanical Drawing



COB12864-03

Graphic 128x64dots

Part number list

WG12864B-□□□-□□#
BG12864E□□□□□$
SG12864H□□□-□□-□□-□

Feature

1.Built-in controller NT7108 or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface
5. (Option) +3V single power supply
6. (Option) Bulit-in Chinese font :WG12864S

Pin Assignment

Pin	Symbol	Function
1	Vdd	Power supply (+5V)
2	GND	Power supply(GND)
3	Vo	Contrast adjustment
4~11	DB0~7	Data bus line
12	/CS1	Chip select IC1
13	/CS2	Chip select IC2
14	/RST	Reset signal
15	R/W	Data read/write
16	D/I	Data / instruction
17	E	Enable signal
18	Vee	Negative voltage output
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

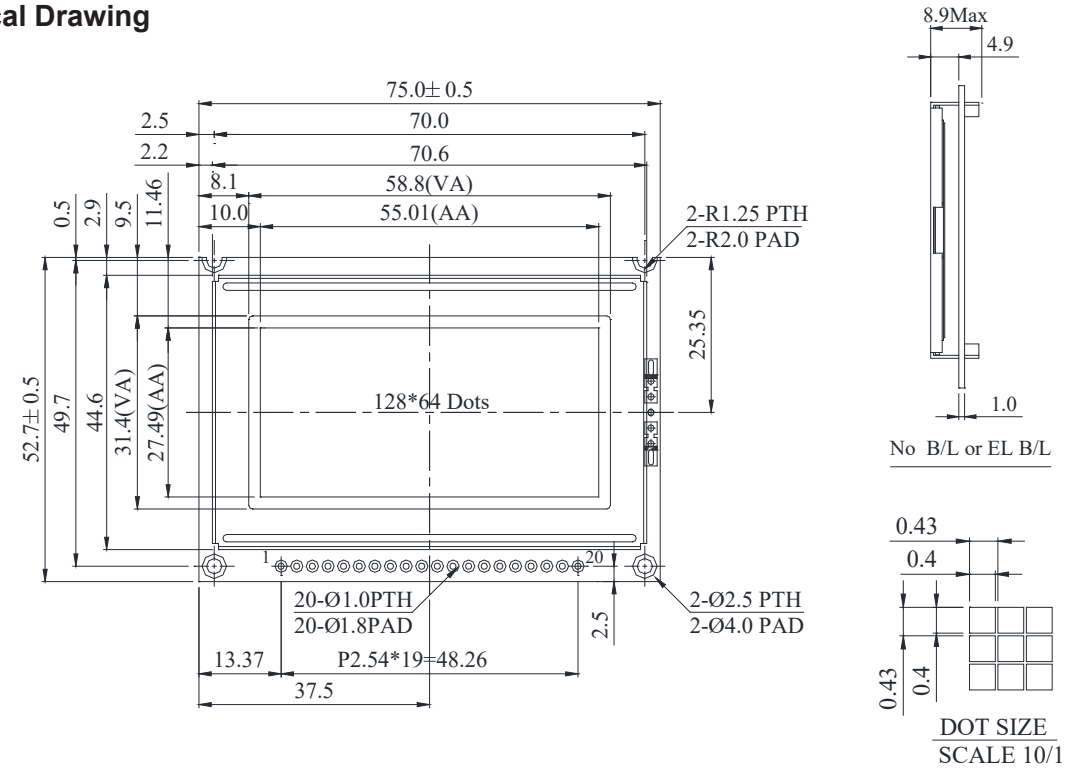
Mechanical Data

Item	Standard Value	Unit
Module Dimension	75.0 x 52.7	mm
Active Area	55.01 x 27.49	mm
Dot Pitch	0.43 x 0.43	mm
Dot Size	0.40 x 0.40	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	8.0	V

Mechanical Drawing



COB12864-04

Graphic 128x64dots

Part number list

WG12864C-□□□-□□#

BG12864C1□□□□□$

SG12864I□□□-□□-□□-□

Feature

1.Built-in controller NT7108 or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin	Symbol	Function
1	/CS1	Chip select for IC1
2	/CS2	Chip select for IC2
3	Vss	GND
4	Vdd	Power supply (+5V)
5	Vo	Contrast adjustment
6	D/I	Data / instruction
7	R/W	Data read/write
8	E	H -->L Enable signal
9~16	DB0~7	Data bus line
17	/RST	Reset signal
18	Vee	Negative voltage output
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

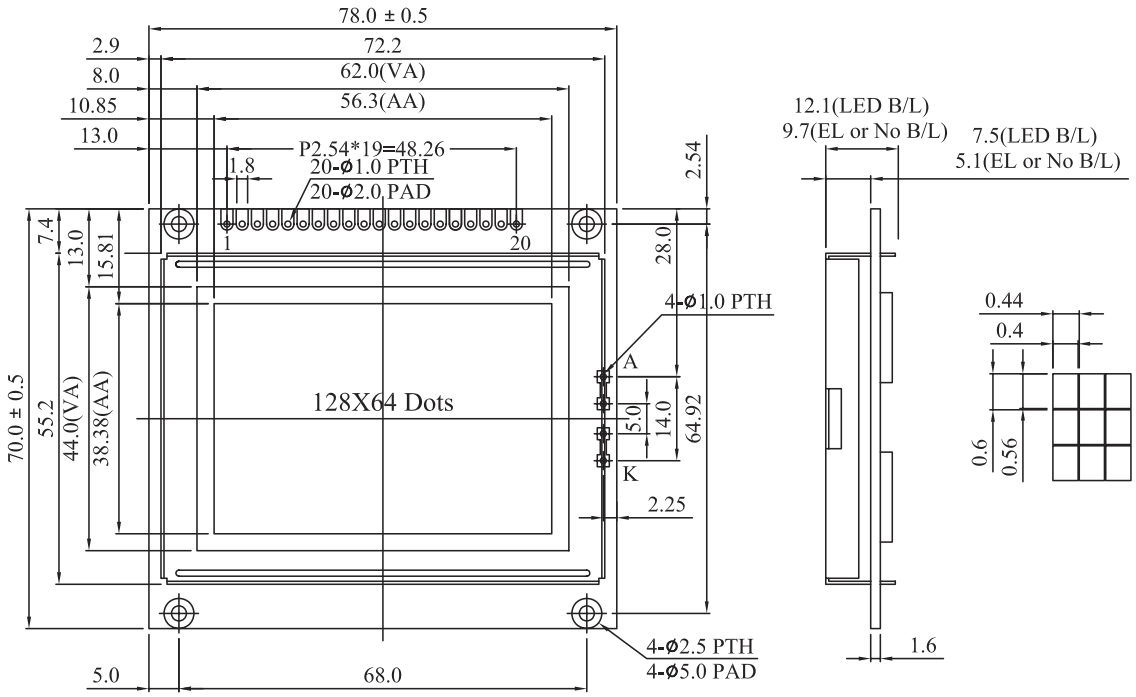
Mechanical Data

Item	Standard Value	Unit
Module Dimension	78.0 x 70.0	mm
Active Area	56.3 x 38.38	mm
Dot Pitch	0.44 x 0.60	mm
Dot Size	0.40 x 0.56	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	9.0	V

Mechanical Drawing



COB12864-05

Graphic 128x64dots

Part number list

WG12864D-□□□-□□#

BG12864D□□□□□$

SG12864J□□□-□□-□□-□

Feature

1.Built-in controller T6963C or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 8080 interface

Pin Assignment

Pin	Symbol	Function
1	FG/Vee	Frame ground / Negative voltage output
2	Vss	Power supply(GND)
3	Vdd	Power supply(+5V)
4	Vo	Contrast Adjustment
5	/WR	Data write
6	/RD	Data read
7	/CE	Chip enable
8	C/D	Command/data
9	/RST	Controller reset
10~17	DB0~7	Data bus line
18	FS	Font select(H: 6x8, L:8x8)
19	K	Power supply for B/L (GND)
20	A	Power supply for B/L (+)

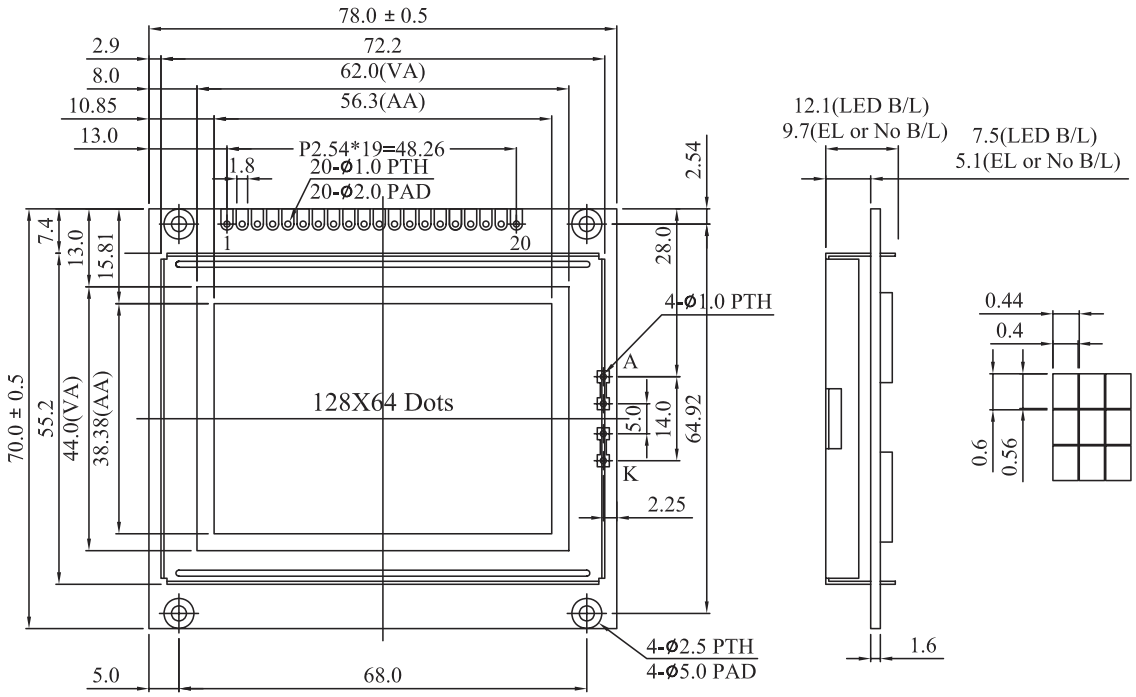
Mechanical Data

Item	Standard Value	Unit
Module Dimension	78.0 x 70.0	mm
Active Area	56.3 x 38.38	mm
Dot Pitch	0.44 x 0.60	mm
Dot Size	0.40 x 0.56	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	9.0	V

Mechanical Drawing



COB12864-06

Graphic 128x64dots

Part number list

SG12864G□□□-□□-□□-□

Feature

1.Built-in controller T6963C or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 8080 interface

Pin Assignment

Pin	Symbol	Function
1	FG/Vee	Frame ground / Negative voltage output
2	Vss	Power supply(GND)
3	Vdd	Power supply(+5V)
4	Vo	Contrast Adjustment
5	/WR	Data write
6	/RD	Data read
7	/CE	Chip enable
8	C/D	Command/data
9	/RST	Controller reset
10~17	DB0~7	Data bus line
18	FS	Font select(H: 6x8, L:8x8)
19	K	Power supply for B/L (GND)
20	A	Power supply for B/L (+)

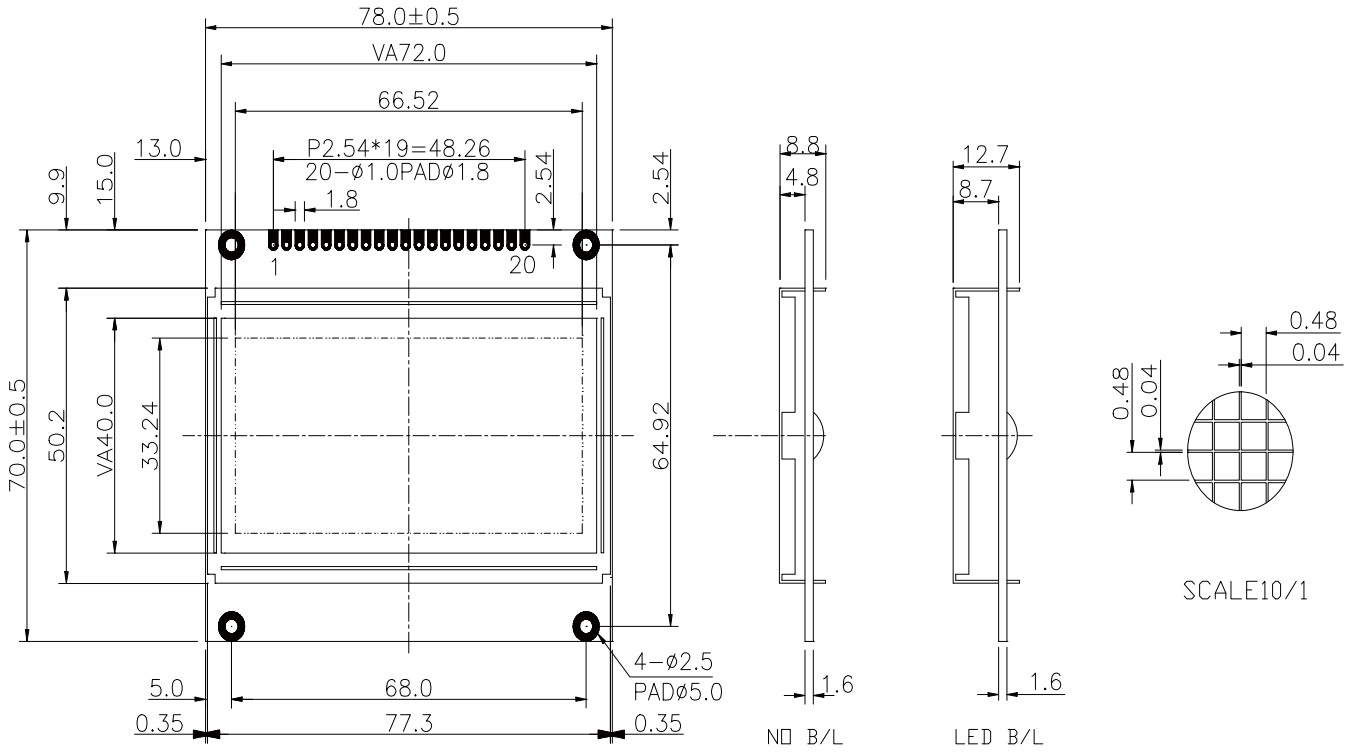
Mechanical Data

Item	Standard Value	Unit
Module Dimension	78.0 x 70.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	8.3	V

Mechanical Drawing



COB12864-07

Graphic 128x64dots

Part number list

WG12864I-□□□-□□#

BG12864C□□□□□$

SG12864C□□□-□□-□□-□

Feature

1.Built-in controller NT7108 or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	Power supply (+5V)
3	Vo	Contrast adjustment
4	D/I	Data/instruction
5	R/W	Data read/write
6	E	H -->L Enable signal
7~14	DB0~7	Data bus line
15	CS1	Chip select for IC1
16	CS2	Chip select for IC2
17	/RST	Reset
18	Vee	Negative voltage output
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

Mechanical Data

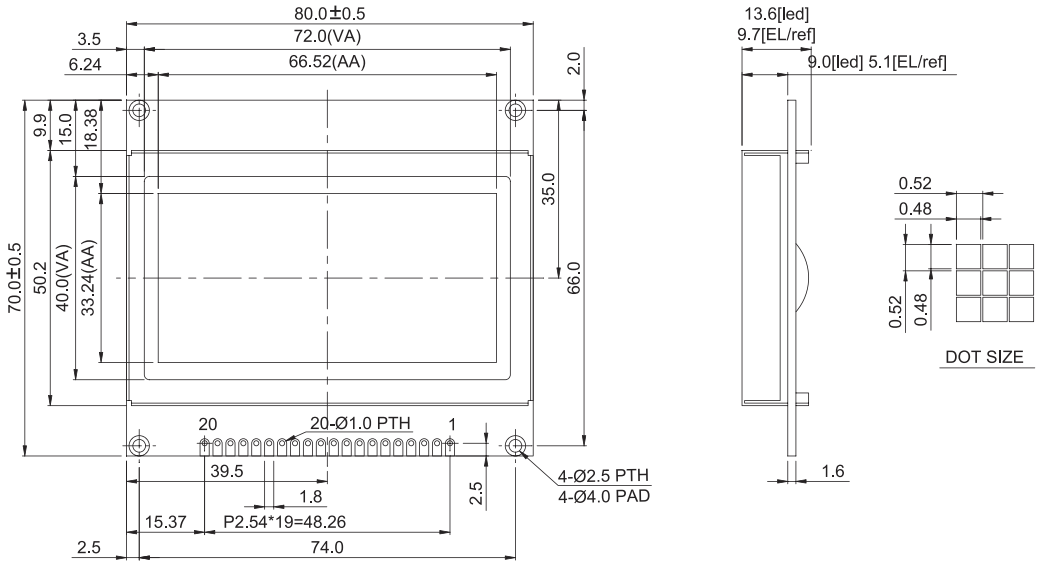
Item	Standard Value	Unit
Module Dimension	80.0 x 70.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	8.8	V

Mechanical Drawing

SG12864C : Outline 78x70mm (same mount hole)



COB12864-08

Graphic 128x64dots

Part number list

SG12864M□□□-□□-□□-□

Feature

1.Built-in controller KS0108 or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	Power supply (+5V)
3	Vo	Contrast adjustment
4	D/I	Data/instruction
5	R/W	Data read/write
6	E	H -->L Enable signal
7~14	DB0~7	Data bus line
15	CS1	Chip select for IC1
16	CS2	Chip select for IC2
17	/RST	Reset
18	Vee	Negative voltage output
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

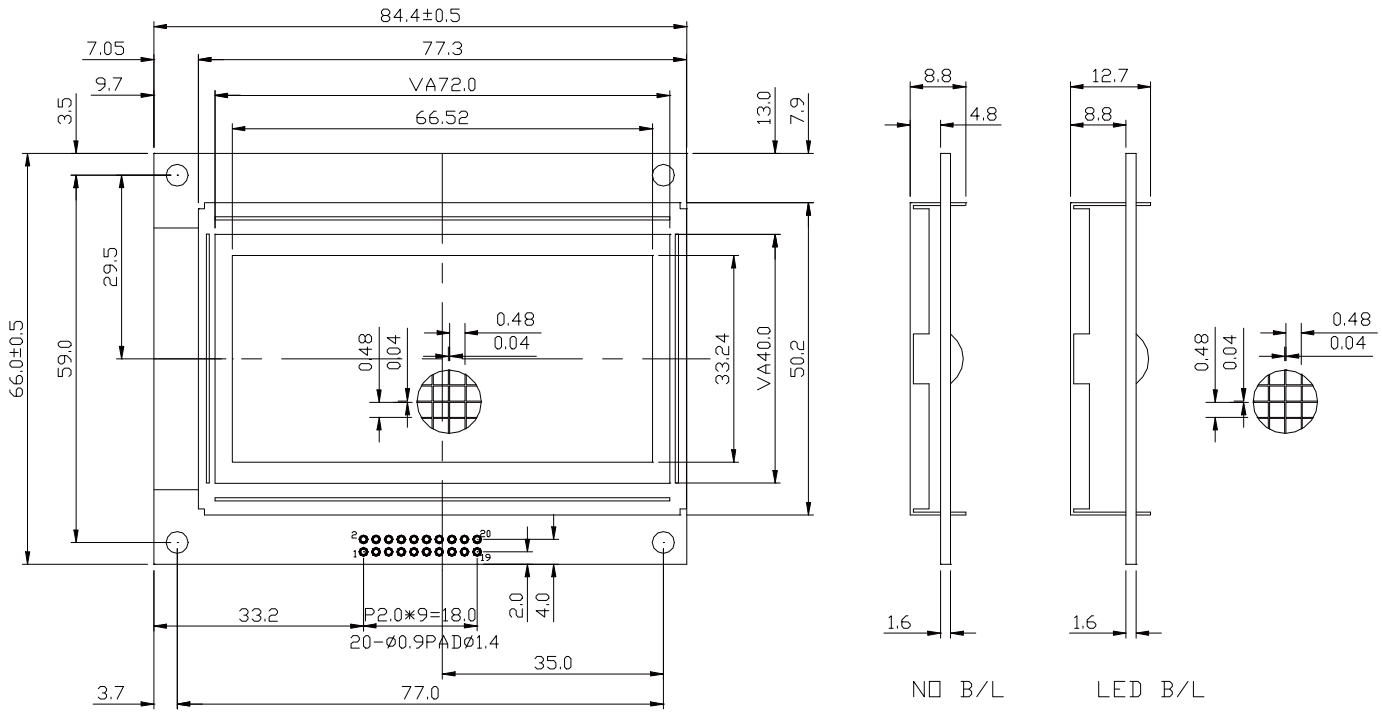
Mechanical Data

Item	Standard Value	Unit
Module Dimension	80.0 x 70.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	8.3	V

Mechanical Drawing



COB12864-09

Graphic 128x64dots

Part number list

BG12864F□□□□□$

SG12864F□□□-□□-□□-□

Feature

1.Built-in controller T6963C or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 8080 interface

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	Power supply(+5V)
3	Vo	Contrast adjustment
4	C/D	Command/data
5	/RD	Data read
6	/WR	Data write
7~14	DB0~7	Data bus line
15	/CE	Chip enable
16	/RST	Reset signal
17	Vee	Negative voltage output
18	MD2	Column No. selection (H:32 column, L: 40 columns)
19	FS	Font selection (H:6x8,L:8x8)
20	HLT	H: normal L: stop clock oscillation

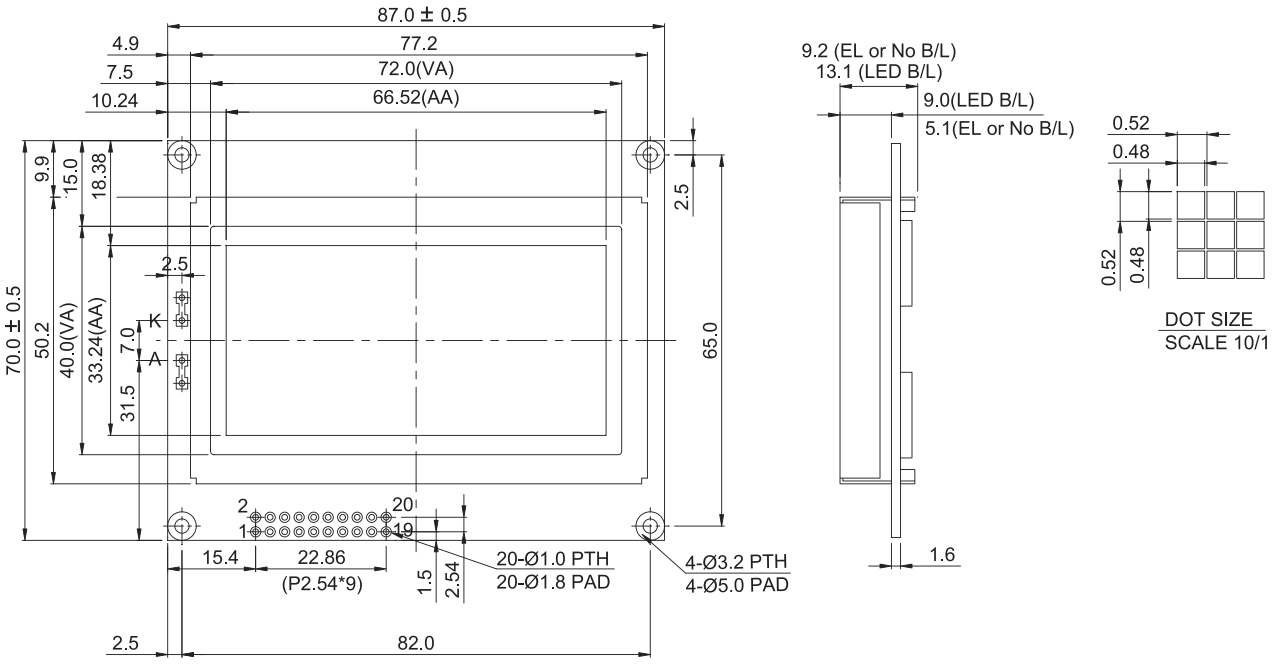
Mechanical Data

Item	Standard Value	Unit
Module Dimension	87.0 x 70.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	8.5	V

Mechanical Drawing



COB12864-10

Graphic 128x64dots

Part number list

SG12864B□□□-□□-□□-□

Feature

1.Built-in controller SBN0064G or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	Power supply (+5V)
3	Vo	Contrast adjustment
4	D/I	Data/instruction
5	R/W	Data read/write
6	E	H -->L Enable signal
7~14	DB0~7	Data bus line
15	CS1	Chip select for IC1
16	CS2	Chip select for IC2
17	/RST	Reset
18	Vee	Negative voltage output
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

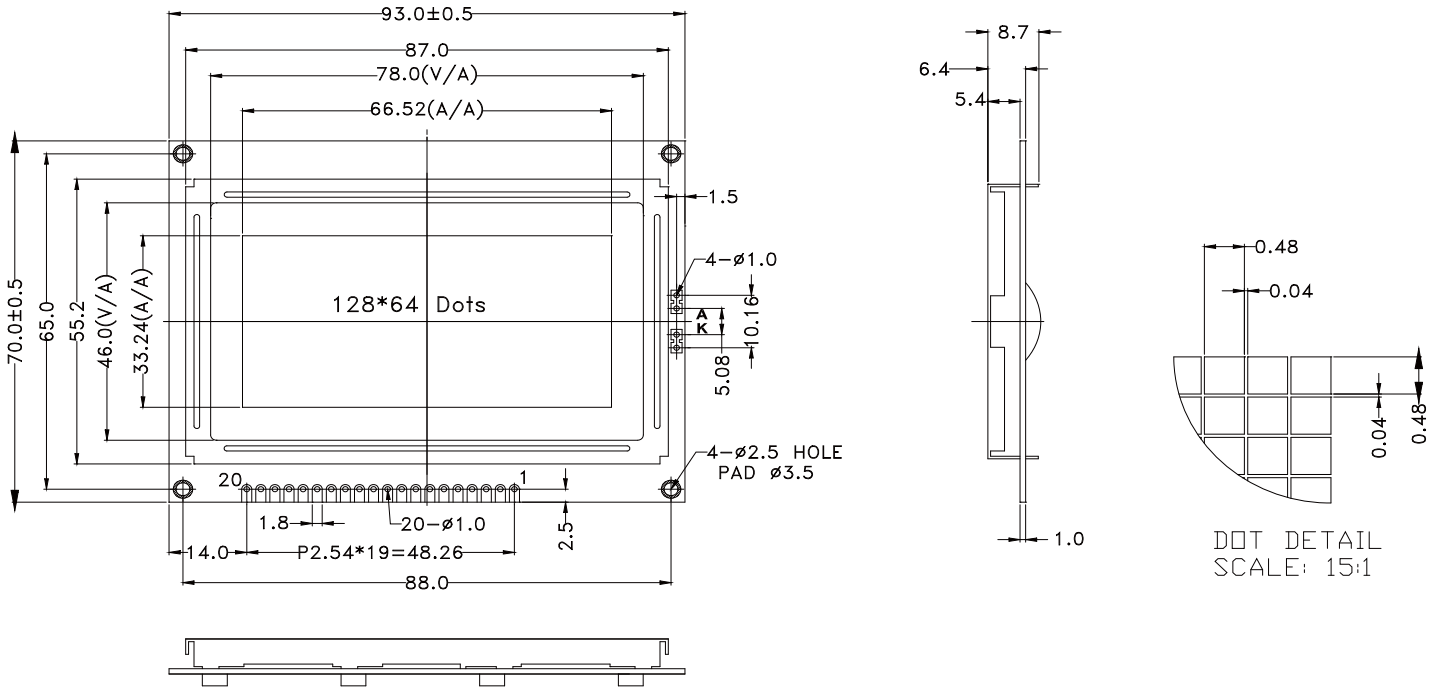
Mechanical Data

Item	Standard Value	Unit
Module Dimension	93.0 x 70.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	8.5	V

Mechanical Drawing



COB12864-11

Graphic 128x64dots

Part number list

SG12864D□□□-□□-□□-□

Feature

1.Built-in controller KS0108 or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	Power supply (+5V)
3	Vo	Contrast adjustment
4	D/I	Data/instruction
5	R/W	Data read/write
6	E	H -->L Enable signal
7~14	DB0~7	Data bus line
15	CS1	Chip select for IC1
16	CS2	Chip select for IC2
17	/RST	Reset
18	Vee	Negative voltage output
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

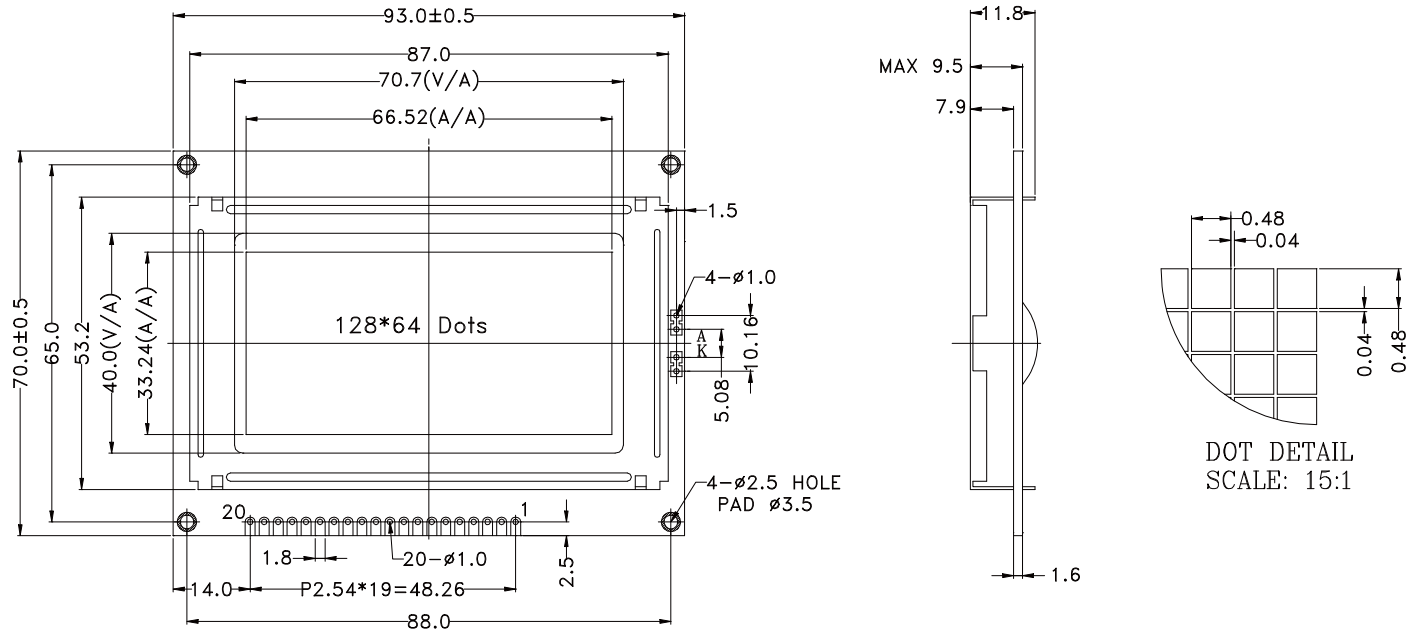
Mechanical Data

Item	Standard Value	Unit
Module Dimension	93.0 x 70.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	8.3	V

Mechanical Drawing



COB12864-12

Graphic 128x64dots

Part number list

WG12864A-□□□-□□#
BG12864A□□□□□$
SG12864A□□□-□□-□□-□

Feature

1.Built-in controller NT7108 or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface
5. (Option) +3V single power supply

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	Power supply (+5V)
3	Vo	Contrast adjustment
4	D/I	Data/instruction
5	R/W	Data read/write
6	E	H -->L Enable signal
7~14	DB0~7	Data bus line
15	CS1	Chip select for IC1
16	CS2	Chip select for IC2
17	/RST	Reset
18	Vee	Negative voltage output
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

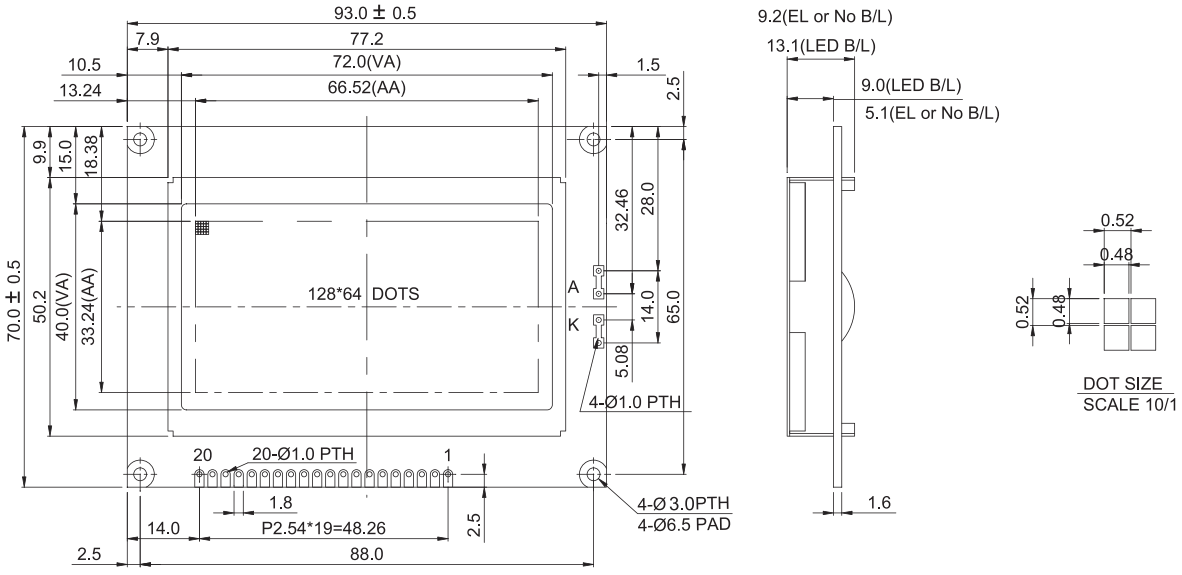
Mechanical Data

Item	Standard Value	Unit
Module Dimension	93.0 x 70.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	8.6	V

Mechanical Drawing



COB12864-13

Graphic 128x64dots

Part number list

WG12864J5-□□□-□□#
BG12864B□□□□□$
SG12864E□□□-□□-□□-□

Feature

1.Built-in controller ST7920
2.Bulit-in oscillation and positive voltage
3.+5V single power supply
4. 6800 / SPI interface
5.Built-in Chinese font
6. (Option) +3V single power supply

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	+ 5V(+3V option)
3	Vo	Contrast adjustment
4	RS	Register selection signal
5	R/W	Data read/write
6	E	H -> L Enable signal
7~14	DB0~7	Data bus line
15	A	Power supply for B/L (+)
16	K	Power supply for B/L (GND)
17	/RST	Reset LCD module
18	Vee	Positive voltage output

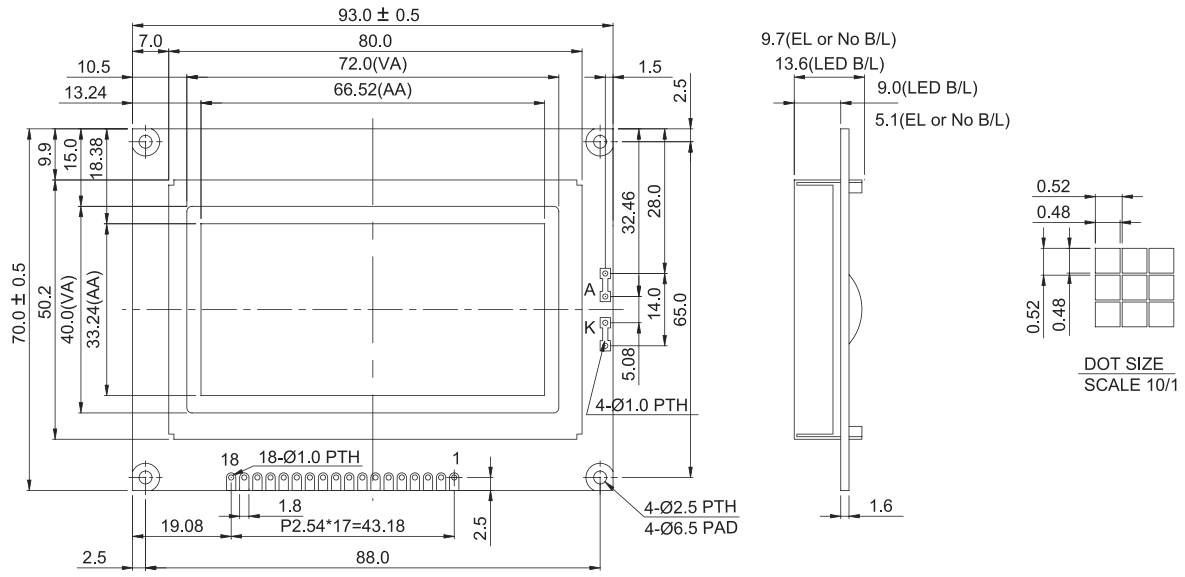
Mechanical Data

Item	Standard Value	Unit
Module Dimension	93.0 x 70.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	4.3	V

Mechanical Drawing



COB12864-14

Graphic 128x64dots

Part number list

BG12864A2□□□□□$

Feature

1.Built-in controller NT7108 or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface
5. RGB LED backlight
6. (Option) +3V single power supply

Pin Assignment

Pin	Symbol	Function
1	Vdd	+ 5V(+3V option)
2	Vss	GND
3	Vo	Contrast adjustment
4~11	DB0~7	Data bus line
12	CS1	Chip select for IC1
13	CS2	Chip select for IC2
14	/RST	Reset
15	R/W	Data read/write
16	D/I	Data/instruction
17	E	H -> L Enable signal
18	Vee	Negative voltage output(-4.8V)
19	A	Power supply for B/L (+)
20	K(R)	Power supply for B/L (GND)
21	K(G)	Power supply for B/L (GND)
22	K(B)	Power supply for B/L (GND)

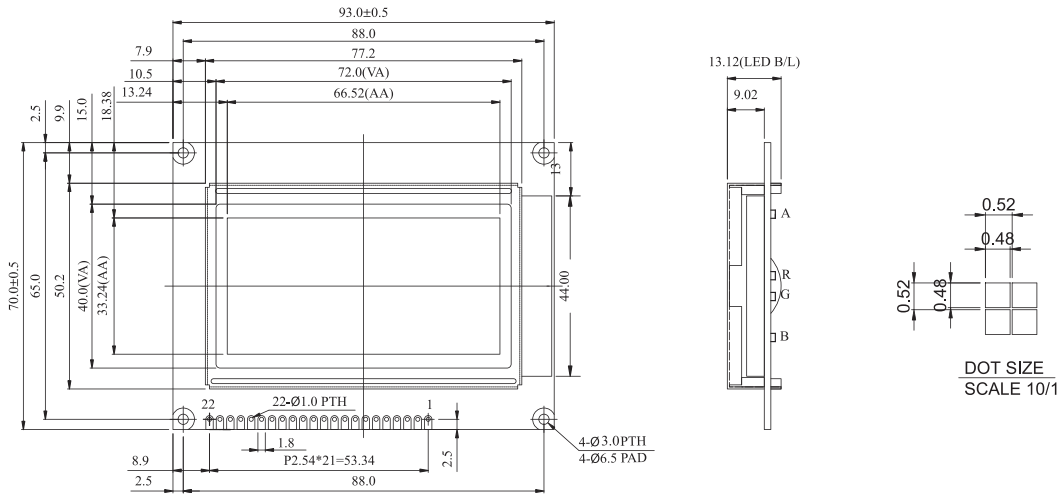
Mechanical Data

Item	Standard Value	Unit
Module Dimension	93.0 x 70.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	8.6	V

Mechanical Drawing



COB12864-15

Graphic 128x64dots

Part number list

WG12864M-□□□-□□#

Feature

1.Built-in controller NT7108 or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin	Symbol	Function
1	Vss	Ground
2	Vdd	Supply voltage for logic
3	VO	Operating voltage for LCD
4	D/I	H: Data , L: Instruction
5	R/W	H: Read(MPU←Module) , L :Write(MPU→Module)
6	E	Enable signal
7~14	DB0~DB7	Data bus line
15	CS1	Chip Select for IC1
16	CS2	Chip Select for IC2
17	/RST	Reset signal
18	Vee	Negative Voltage output
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

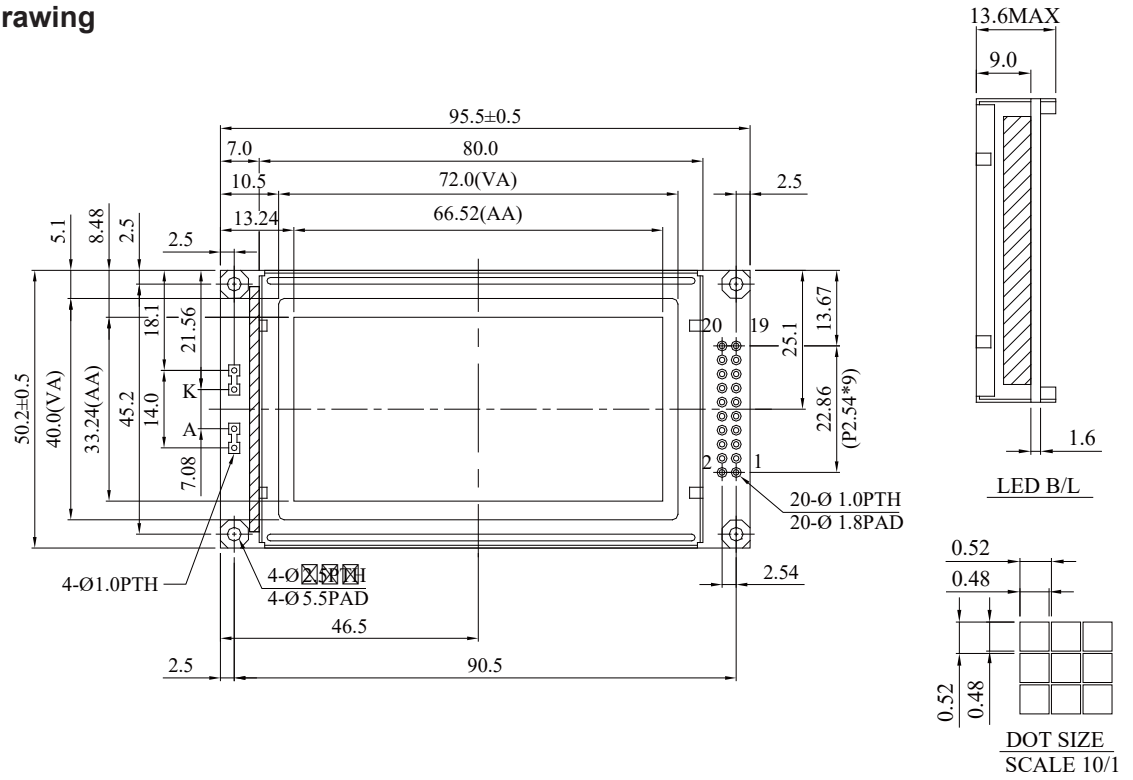
Mechanical Data

Item	Standard Value	Unit
Module Dimension	95.5 x 50.2	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	9.1	V

Mechanical Drawing



COB12864-16

Graphic 128x64dots

Part number list

BG12864K□□□□□$

Feature

1.Built-in controller NT7108 or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin	Symbol	Function
1	Vss	Ground
2	Vdd	Supply voltage for logic
3	VO	Operating voltage for LCD
4	D/I	H: Data , L: Instruction
5	R/W	H: Read(MPU←Module) , L :Write(MPU→Module)
6	E	Enable signal
7~14	DB0~DB7	Data bus line
15	CS1	Chip Select for IC1
16	CS2	Chip Select for IC2
17	/RST	Reset signal
18	Vee	Negative Voltage output
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

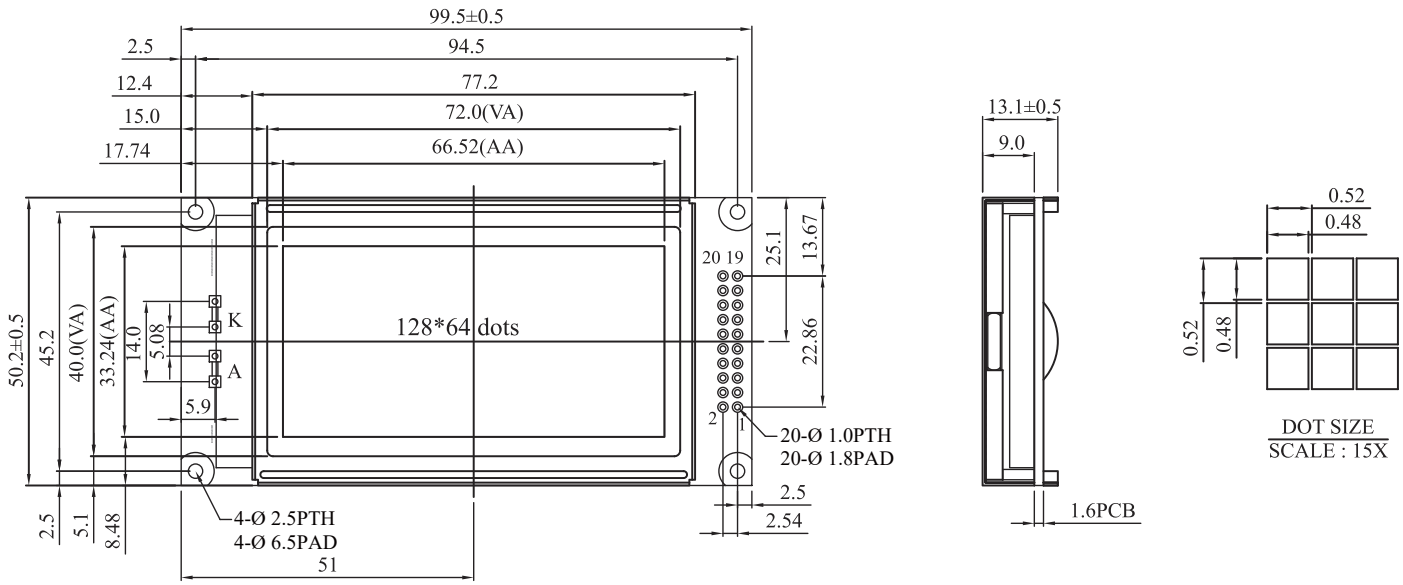
Mechanical Data

Item	Standard Value	Unit
Module Dimension	99.5 x 50.2	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	8.8	V

Mechanical Drawing



COB12864-17

Graphic 128x64dots

Part number list

WG12864K-□□□-□□#

Feature

1.Built-in controller NT7108 or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin	Symbol	Function
1	Vss	Ground
2	Vdd	Supply voltage for logic
3	VO	Operating voltage for LCD
4	D/I	H: Data , L: Instruction
5	R/W	H: Read(MPU←Module) , L :Write(MPU→Module)
6	E	Enable signal
7~14	DB0~DB7	Data bus line
15	CS1	Chip Select for IC1
16	CS2	Chip Select for IC2
17	/RST	Reset signal
18	Vee	Negative Voltage output
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

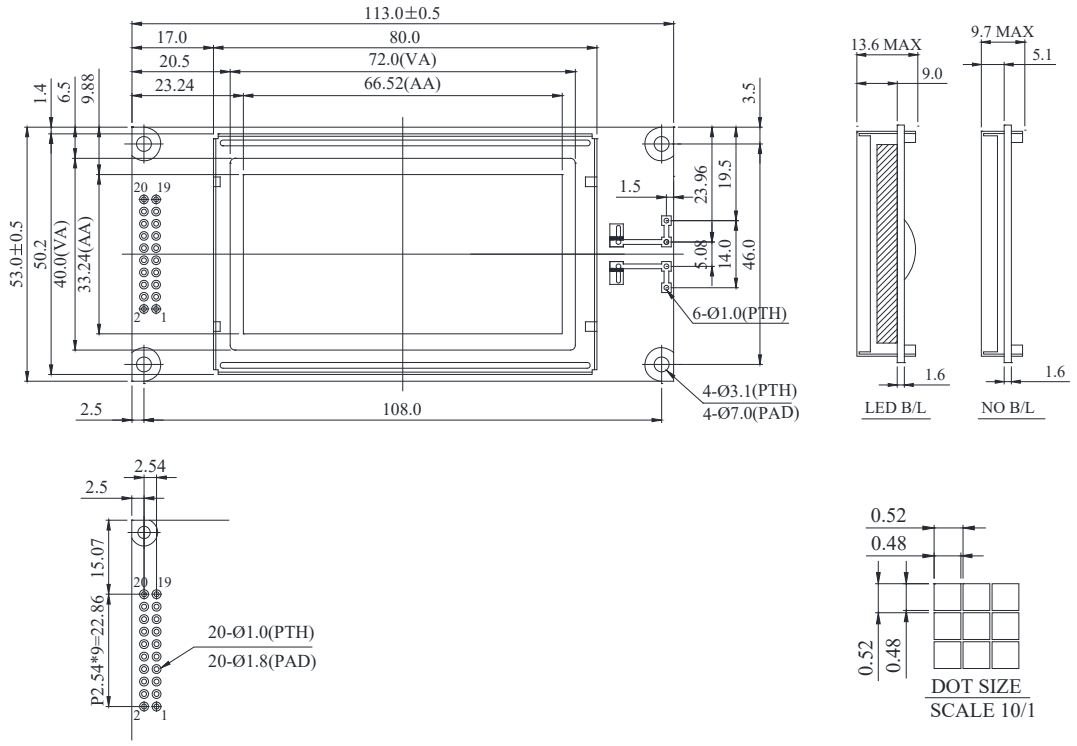
Mechanical Data

Item	Standard Value	Unit
Module Dimension	113.0 x 53.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	9.4	V

Mechanical Drawing



COG12864-01

Graphic 128x64dots

Part number list

BO12864H□□□□$

Feature

1.Bulit-in controller ST7565P
2.Bulit-in oscillation and voltage regulator
3.+3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin	Symbol	Function
1	VCC	Power supply for logic
2	GND	GND
3	/CS1	This is the chip select signal. Active Low
4	CS2	This is the chip select signal. Active High
5	/RES	Reset signal
6	A0	H: Indicates that D0 to D7 are display data. L: Indicates that D0 to D7 are control data..
7	RW/WR	6800 MPU interface :R/W signal 8080 MPU interface :WR signal
8	E/RD	6800 MPU interface :Enable signal 8080 MPU interface :RD signal
9~16	DB0~DB7	Data bus
17	C86	H: 6800 Series MPU interface. L: 8080 MPU interface.
18	P/S	P/S = “H”: Parallel data input. P/S = “L”: Serial data input.

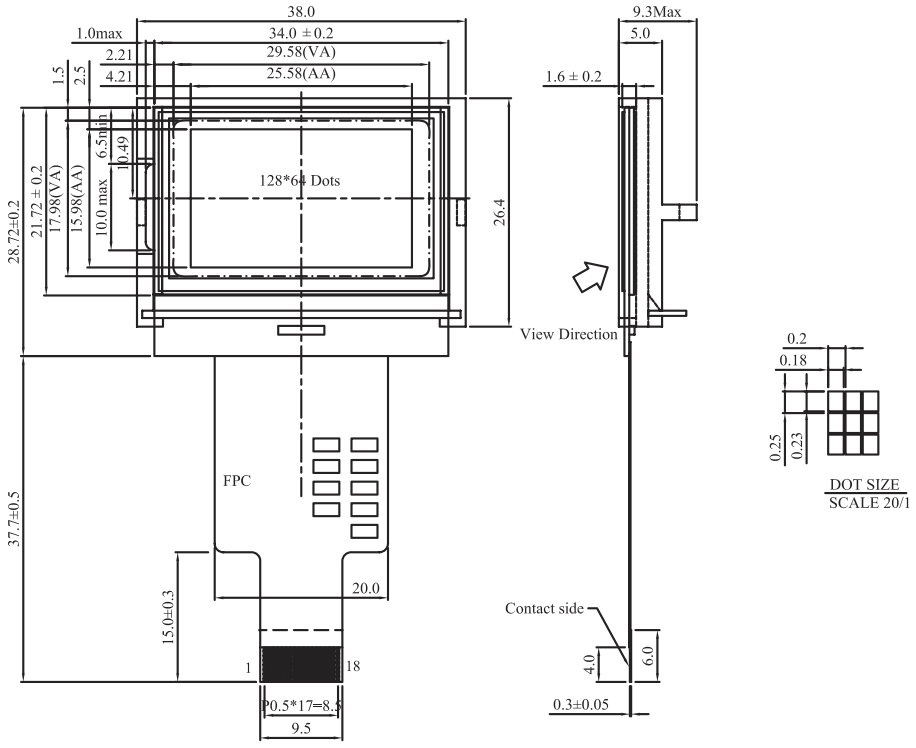
Mechanical Data

Item	Standard Value	Unit
Module Dimension	38.0 x 29.8	mm
Active Area	25.58 x 15.98	mm
Dot Pitch	0.20 x 0.25	mm
Dot Size	0.18 x 0.23	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	9.0	V

Mechanical Drawing



COG12864-02

Graphic 128x64dots

Part number list

WO12864C2-□□□-□□#

Feature

1.Bulit-in controller ST7565P
2.Bulit-in oscillation and voltage regulator
3.+3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	IRS	Selects the resistors for the V0 voltage level adjustment
2	/HPM	Control power supply for LCD "H": Normal mode, "L": High power mode
3	P/S	Selects the interface type: Serial or Parallel.
4	C86	Interface selection 6800/8080
5	VR	LCD Contrast Adjustment when IRS = "L"
6~10	V0~V4	Bias voltage levels for LCD driving
11	VRS	This is the internal-output VREG power supply for the LCD power supply voltage regulator.
12	CAP4+	DC/DC voltage converter.
13	CAP2-	DC/DC voltage converter.
14	CAP2+	DC/DC voltage converter.
15	CAP1+	#N/A
16	CAP1-	DC/DC voltage converter.
17	CAP3+	DC/DC voltage converter.
18	CAP5+	DC/DC voltage converter
19	Vout	Positive Voltage output
20	V_{SS}	Ground
21	V_{DD}	Power supply for logic
22~29	D7~D0	#N/A
30	/RD(E)	8080 family: Read signal, 6800 family: Enable clock
31	/WR(RW)	8080 family: Write signal, 6800 family: Read/Write signal
32	A0	Data/ Instruction select signal
33	/RES	Controller reset signal, Active Low
34	/CS1	This is the chip select signal.

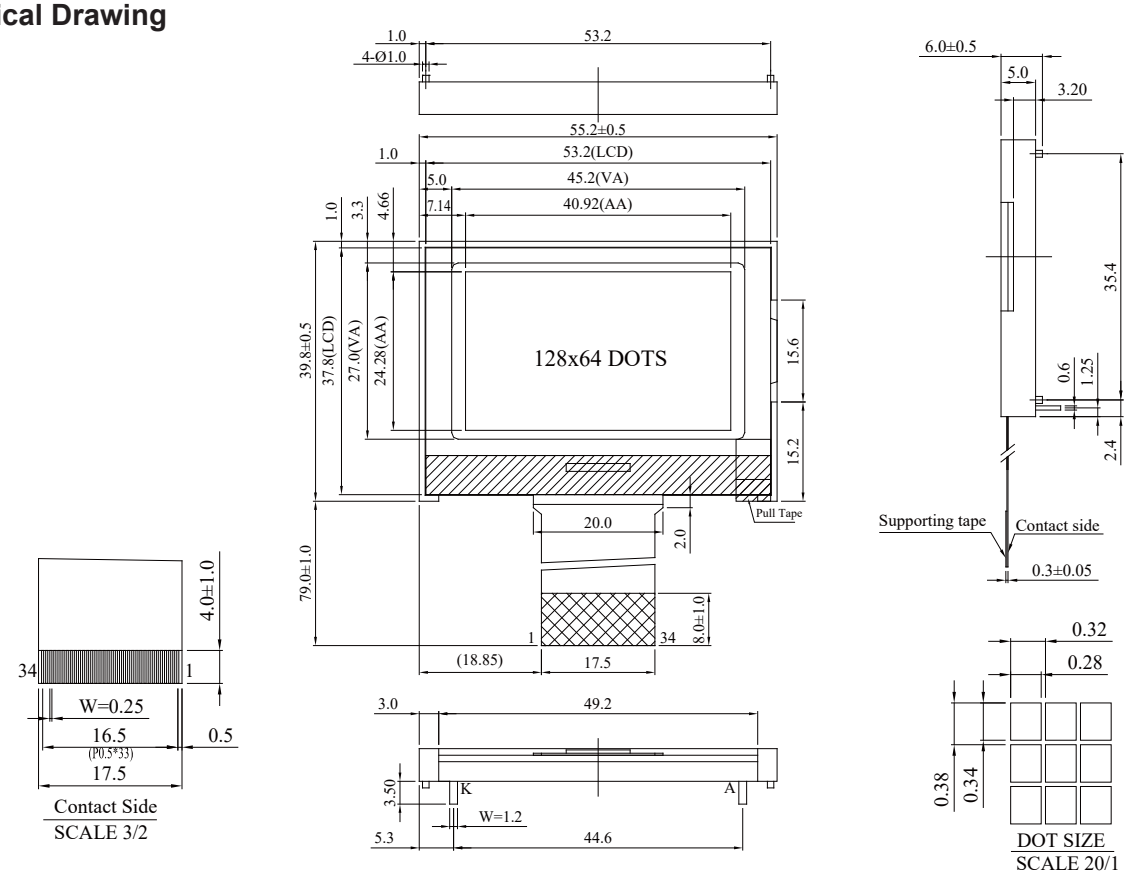
Mechanical Data

Item	Standard Value	Unit
Module Dimension	55.2 x 39.8	mm
Active Area	40.92 x 24.28	mm
Dot Pitch	0.32 x 0.38	mm
Dot Size	0.28 x 0.34	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25℃	VDD-VO	9.6	V

Mechanical Drawing



COG12864-03

Graphic 128x64dots

Part number list

BO12864D1□□□□$

Feature

1.Bulit-in controller ST7541
2.Bulit-in oscillation and voltage regulator
3.+3V single power supply
4.6800 interface
5. 4-Gray scale available

Pin Assignment

Pin	Symbol	Function
1	GND	Ground
2	VDD	Power supply(3V)
3	DB7	Data bus
4	DB6	Data bus
5	DB5	Data bus
6	DB4	Data bus
7	DB3	Data bus
8	DB2	Data bus
9	DB1	Data bus
10	DB0	Data bus
11	E	Enable signal
12	R/W	H : read L : write
13	A0	H : data L: Instruction
14	/RES	Reset H: Disable L: Enable
15	/CS	H: chip selected L: chip unselected
16	GND	Ground

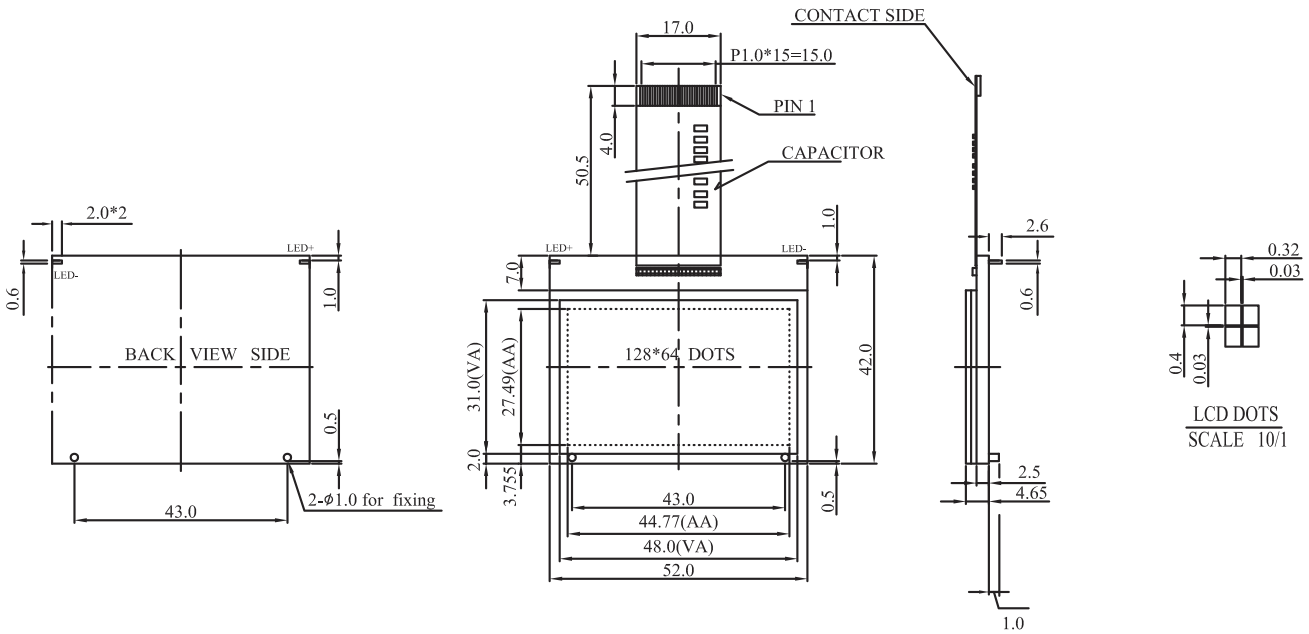
Mechanical Data

Item	Standard Value	Unit
Module Dimension	52.0 x 42.0	mm
Active Area	44.77 x 27.49	mm
Dot Pitch	0.35 x 0.43	mm
Dot Size	0.32 x 0.40	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	9.0	V

Mechanical Drawing



COG12864-04

Graphic 128x64dots

Part number list

BO12864I□□□□$

Feature

1.Bulit-in controller ST7565P
2.Bulit-in oscillation and voltage regulator
3.+3V single power supply
4.6800 / 8080 / SPI interface
5.ICON pattern include

Pin Assignment

Pin	Symbol	Function
1	VCC	Power supply for logic
2	GND	GND
3	/CS1	This is the chip select signal. Active Low
4	CS2	This is the chip select signal. Active High
5	/RES	Reset signal
6	A0	H: Indicates that D0 to D7 are display data. L: Indicates that D0 to D7 are control data..
7	RW/WR	6800 MPU interface :R/W signal 8080 MPU interface :WR signal
8	E/RD	6800 MPU interface :Enable signal 8080 MPU interface :RD signal
9~16	DB0~DB7	Data bus
17	C86	H: 6800 Series MPU interface. L: 8080 MPU interface.
18	P/S	P/S = “H”: Parallel data input. P/S = “L”: Serial data input.

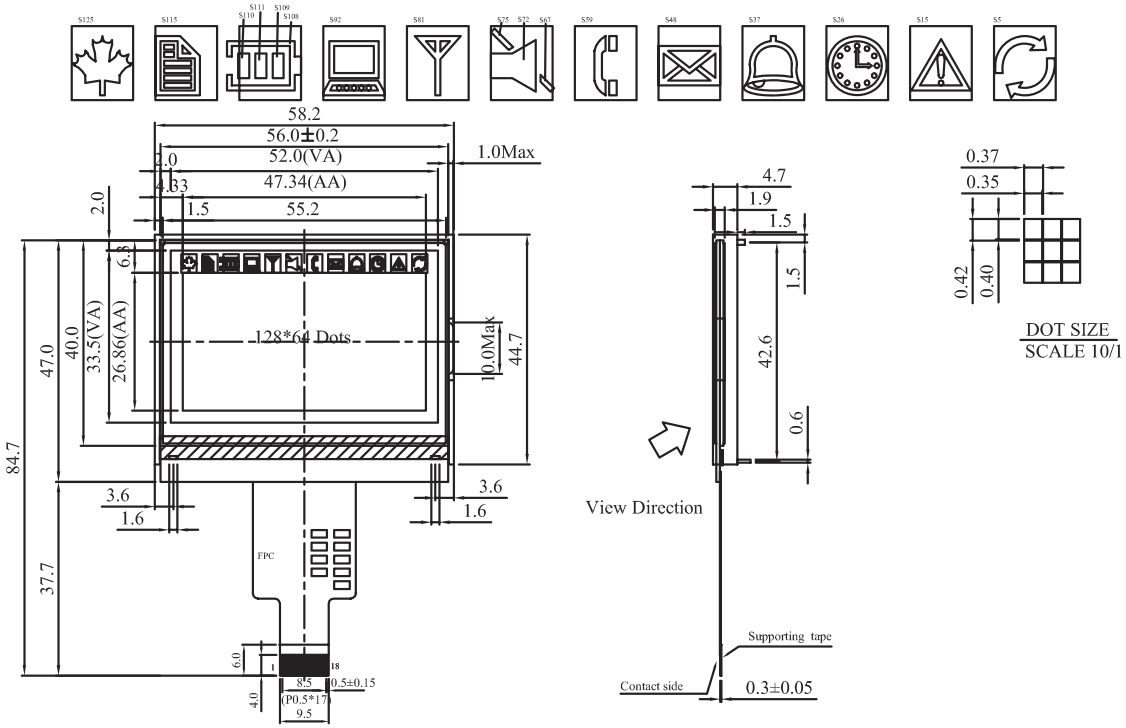
Mechanical Data

Item	Standard Value	Unit
Module Dimension	58.2 x 48.0	mm
Active Area	47.34 x 26.86	mm
Dot Pitch	0.37 x 0.42	mm
Dot Size	0.35 x 0.42	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	9.0	V

Mechanical Drawing



COG12864-05

Graphic 128x64dots

Part number list

WO12864A1-□□□-□□#

Feature

1.Bulit-in controller ST7565P
2.Bulit-in oscillation and voltage regulator
3.+3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	P/S	Selects the interface type: Serial or Parallel.
2	C86	Interface selection 6800/8080
3	VR	LCD Contrast Adjustment when IRS = “L”
4~8	V0~V4	Bias voltage levels for LCD driving
9	CAP2N	DC/DC voltage converter.
10	CAP2P	DC/DC voltage converter.
11	CAP1P	DC/DC voltage converter.
12	CAP1N	DC/DC voltage converter.
13	CAP3P	DC/DC voltage converter.
14	Vout	Positive Voltage output
15	V_{SS}	Ground
16	V_{DD}	Power supply for logic
17~24	D7~ D0	Data bus line
25	/RD(E)	8080 family: Read signal, 6800 family: Enable clock
26	/WR(R/W)	8080 family: Write signal, 6800 family: Read/Write signal
27	A0	Data/ Instruction select signal
28	/RES	Controller reset signal, Active Low
29	/CS1	This is the chip select signal.

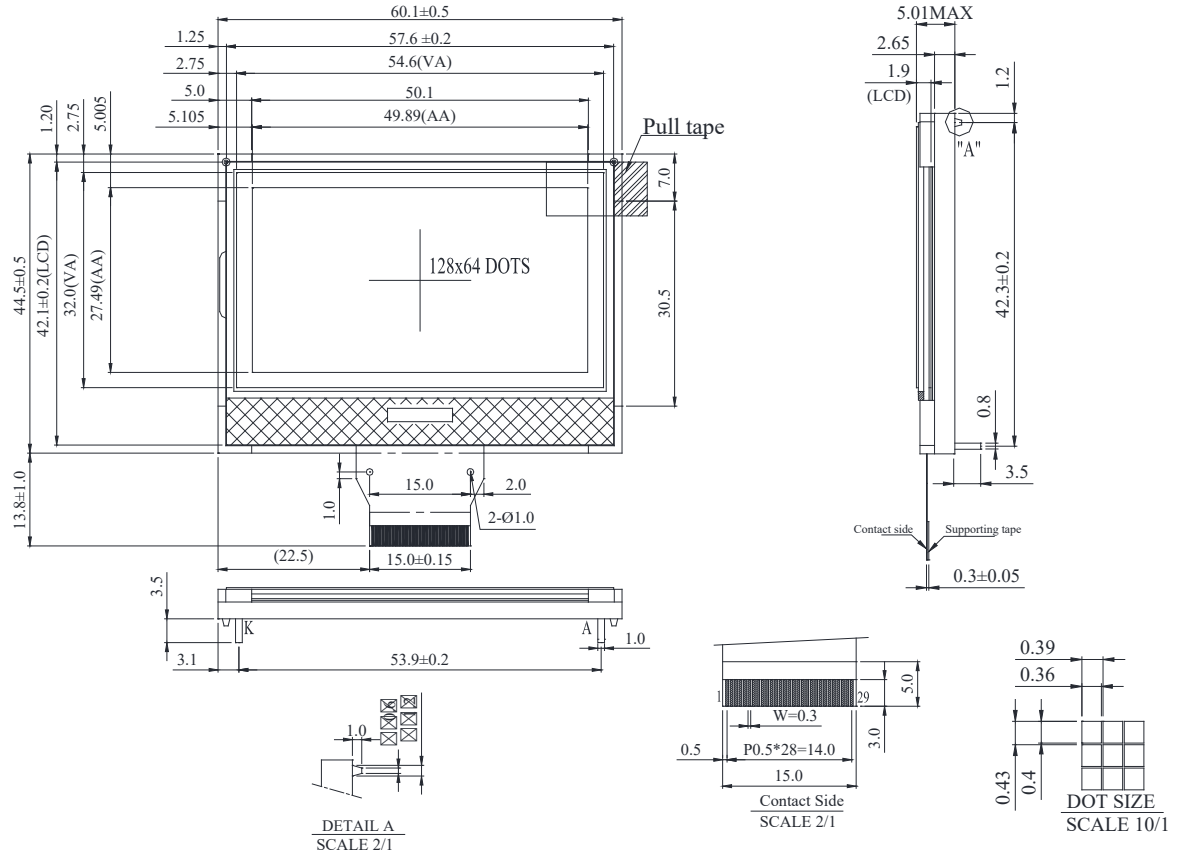
Mechanical Data

Item	Standard Value	Unit
Module Dimension	60.1 x 44.5	mm
Active Area	49.89 x 27.49	mm
Dot Pitch	0.39 x 0.43	mm
Dot Size	0.36 x 0.40	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25℃	VDD-VO	9.5	V

Mechanical Drawing



COG12864-06

Graphic 128x64dots

Part number list

BO12864L□□□□$

Feature

1.Bulit-in controller ST7567
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.SPI interface

Pin Assignment

Pin	Symbol	Description
1	NC	Not used
2	NC	Not used
3	CSB	Chip select input pin
4	RSTB	Hardware reset input pin
5	A0	It determines whether the access is related to data or command.
6	SCL	Serial clock input.
7	SDA	Serial data input.
8	VDD	Power supply.
9	VSS	Ground
10	V0	LCD driving voltage for common circuits at negative frame.
11	XV0	LCD driving voltage for common circuits at positive frame.
12	VG	LCD driving voltage for segment circuits.
13	NC	Not used.
14	NC	Not used.
15	LEDA	Backlight anode.
16	LEDK	Backlight cathode.

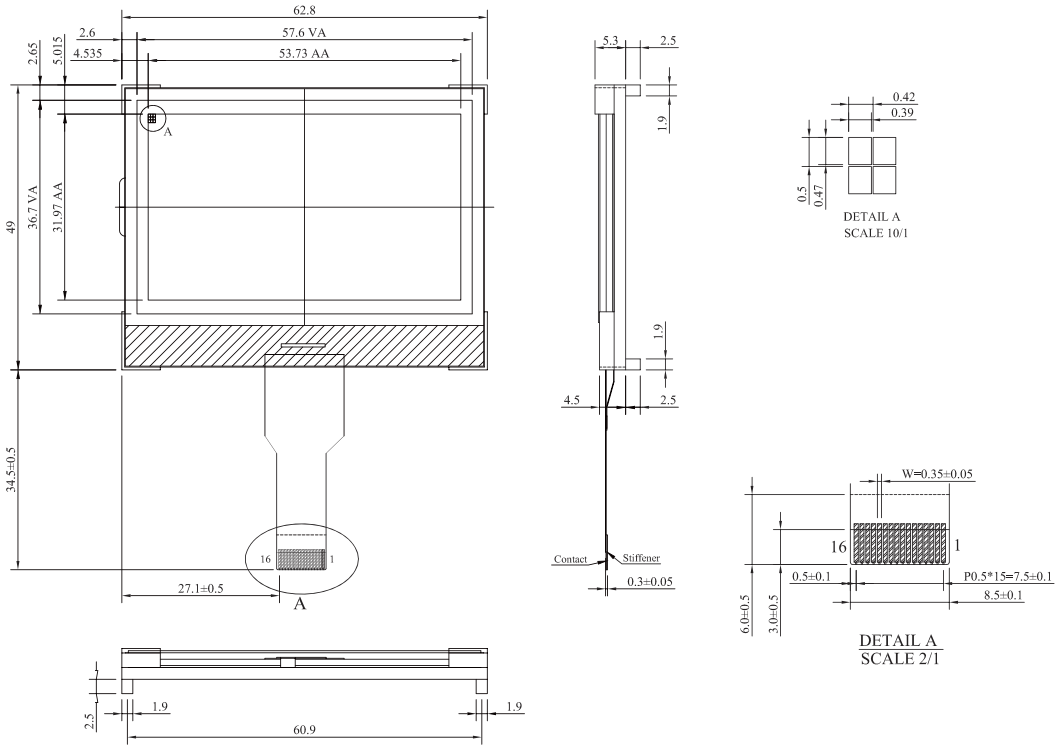
Mechanical Data

Item	Standard Value	Unit
Module Dimension	62.8 x 49.0	mm
Active Area	53.73 x 31.97	mm
Dot Pitch	0.42 x 0.50	mm
Dot Size	0.39 x 0.47	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	8.6	V

Mechanical Drawing



COG12864-07

Graphic 128x64dots

Part number list

BO12864B□□□□$

Feature

1.Bulit-in controller SED1565
2.Bulit-in oscillation and voltage regulator
3.+3V / +5V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin	Symbol	Pin	Symbol	Pin	Symbol
1	C86	11	Cap1+	21	DB2
2	Vss	12	Cap3-	22	DB1
3	V5	13	Vout	23	DB0
4	V4	14	Vss	24	RD(E)
5	V3	15	Vdd	25	WR(R/W)
6	V2	16	DB7	26	Ao
7	V1	17	DB6	27	RST
8	Cap2+	18	DB5	28	CS1
9	Cap2-	19	DB4		
10	Cap1-	20	DB3		

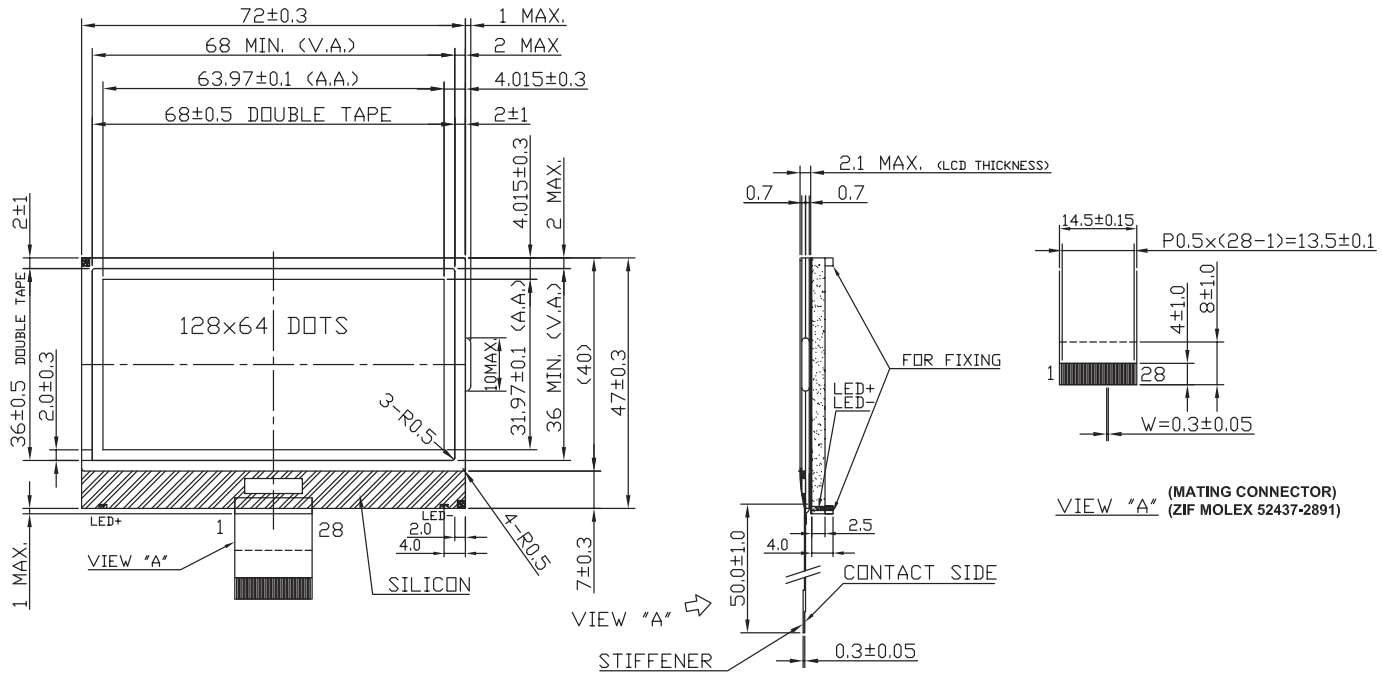
Mechanical Data

Item	Standard Value	Unit
Module Dimension	72.0 x 47.0	mm
Active Area	63.97 x 31.97	mm
Dot Pitch	0.50 x 0.50	mm
Dot Size	0.47 x 0.47	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	9.0	V

Mechanical Drawing



COG12864-08

Graphic 128x64dots

Part number list

BO12864B2□□□□$

Feature

1.Bulit-in controller ST7565P
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin	Symbol	Pin	Symbol	Pin	Symbol
1	C86	11	Cap1+	21	DB2
2	Vss	12	Cap3-	22	DB1
3	V5	13	Vout	23	DB0
4	V4	14	Vss	24	RD(E)
5	V3	15	Vdd	25	WR(R/W)
6	V2	16	DB7	26	Ao
7	V1	17	DB6	27	RST
8	Cap2+	18	DB5	28	CS1
9	Cap2-	19	DB4		
10	Cap1-	20	DB3		

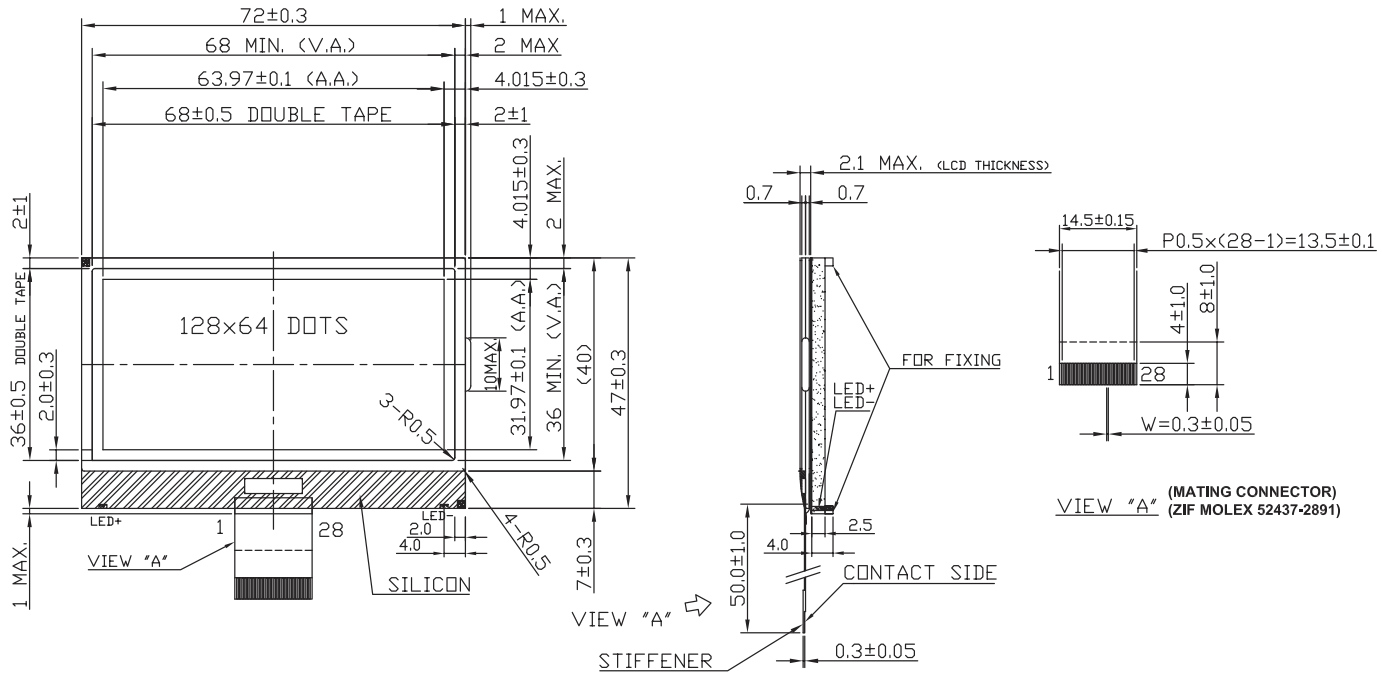
Mechanical Data

Item	Standard Value	Unit
Module Dimension	72.0 x 47.0	mm
Active Area	63.97 x 31.97	mm
Dot Pitch	0.50 x 0.50	mm
Dot Size	0.47 x 0.47	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	8.6	V

Mechanical Drawing



COG12864-09

Graphic 128x64dots

Part number list

BO12864J□□□□$

WO12864B1-□□□-□□#

Feature

1.Bulit-in controller ST7565P
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	/CS1B	This is the chip select signal.
2	/RES	Controller reset signal, Active Low
3	A0	Data/ Instruction select signal
4	/WR(R/W)	8080 family: Write signal, 6800 family: Read/Write signal
5	/RD(E)	8080 family: Read signal, 6800 family: Enable clock
6~13	D0~D7	Data bus line
14	V_{DD}	Power supply for logic
15	V_{SS}	Ground
16	Vout	Positive Voltage output
17	CAP3P	DC/DC voltage converter.
18	CAP1N	DC/DC voltage converter.
19	CAP1P	DC/DC voltage converter.
20	CAP2P	DC/DC voltage converter.
21	CAP2N	DC/DC voltage converter.
22~26	V4~ V0	Bias voltage levels for LCD driving
27	VR	LCD Contrast Adjustment when IRS = "L"
28	C86	Interface selection 6800/8080
29	P/S	Selects the interface type: Serial or Parallel.
30	NC	No connection

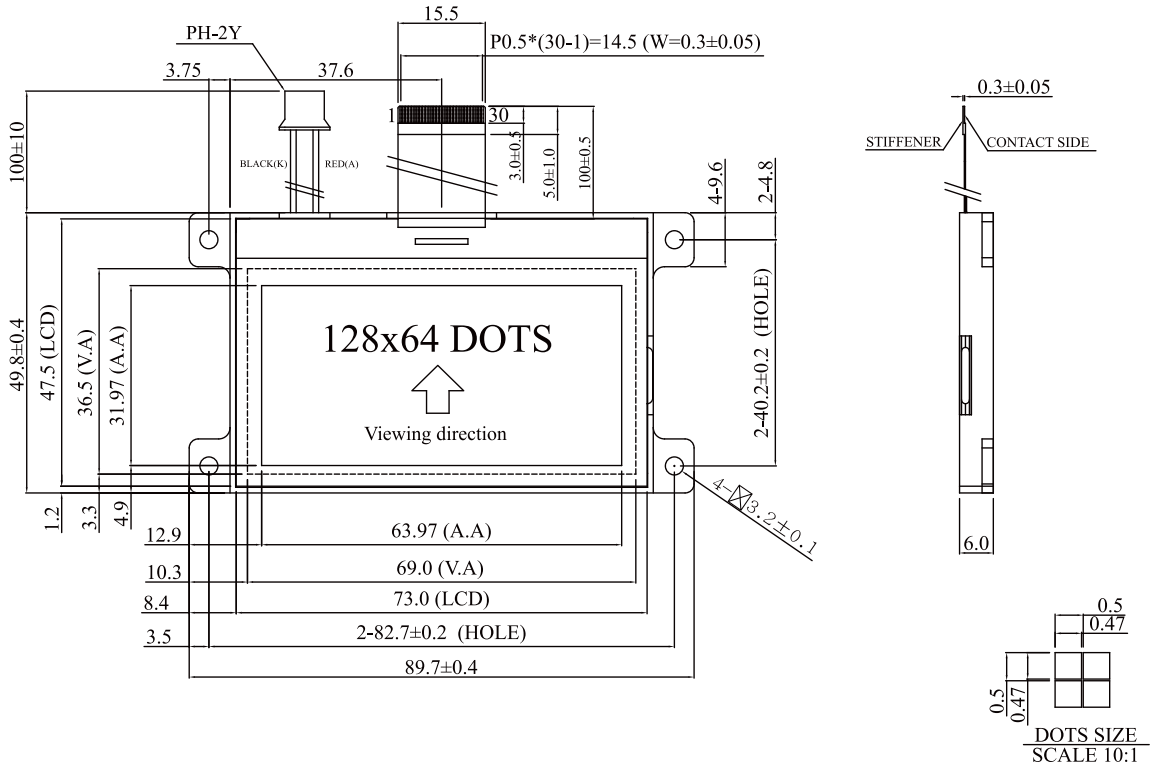
Mechanical Data

Item	Standard Value	Unit
Module Dimension	89.7 x 49.8	mm
Active Area	63.97 x 31.97	mm
Dot Pitch	0.50 x 0.50	mm
Dot Size	0.47 x 0.47	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	9.45	V

Mechanical Drawing



COG12864-10

Graphic 128x64dots

Part number list

BO12864J□□□□$

WO12864B1-□□□-□□#

Feature

1.Bulit-in controller ST7565P
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	/CS1B	This is the chip select signal.
2	/RES	Controller reset signal, Active Low
3	A0	Data/ Instruction select signal
4	/WR(R/W)	8080 family: Write signal, 6800 family: Read/Write signal
5	/RD(E)	8080 family: Read signal, 6800 family: Enable clock
6~13	D0~D7	Data bus line
14	V_{DD}	Power supply for logic
15	V_{SS}	Ground
16	Vout	Positive Voltage output
17	CAP3P	DC/DC voltage converter.
18	CAP1N	DC/DC voltage converter.
19	CAP1P	DC/DC voltage converter.
20	CAP2P	DC/DC voltage converter.
21	CAP2N	DC/DC voltage converter.
22~26	V4~ V0	Bias voltage levels for LCD driving
27	VR	LCD Contrast Adjustment when IRS = "L"
28	C86	Interface selection 6800/8080
29	P/S	Selects the interface type: Serial or Parallel.
30	NC	No connection

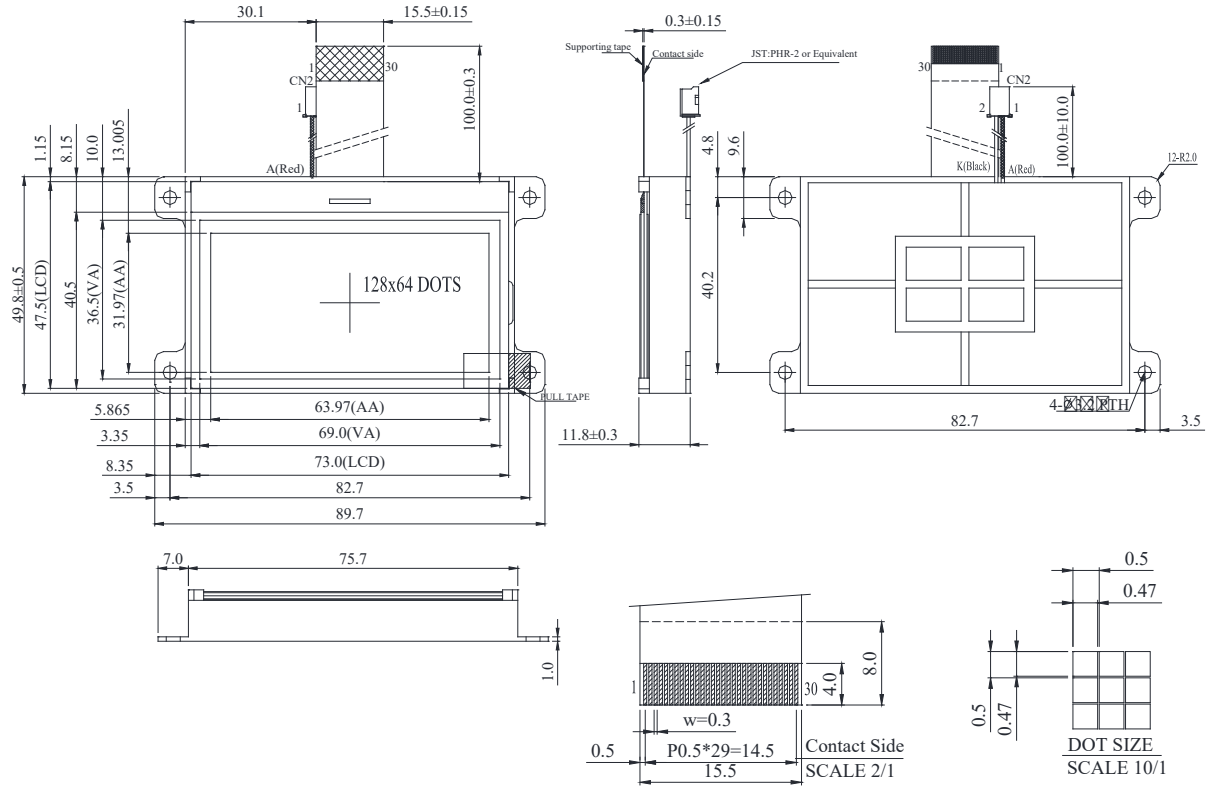
Mechanical Data

Item	Standard Value	Unit
Module Dimension	89.7 x 49.8	mm
Active Area	63.97 x 31.97	mm
Dot Pitch	0.50 x 0.50	mm
Dot Size	0.47 x 0.47	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	9.45	V

Mechanical Drawing



COG12864-11

Graphic 128x64dots

Part number list

BO12864E□□□□$

Feature

1.Bulit-in controller ST7565P
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin	Symbol	Pin	Symbol	Pin	Symbol
1	/CS1	18	CAP3-	32	P/S
2	/RES	19	CAP1+	33	HPM
3	A0	20	CAP1-	34	IRS
4	WR(RW)	21	CAP2-		
5	RE(E)	22	CAP2+		
6~13	D0~D7	23	CAP4-		
14	VDD	24	VRS		
15	VSS	25~29	V1~V5		
16	Vout	30	VR		
17	CAP5-	31	C86		

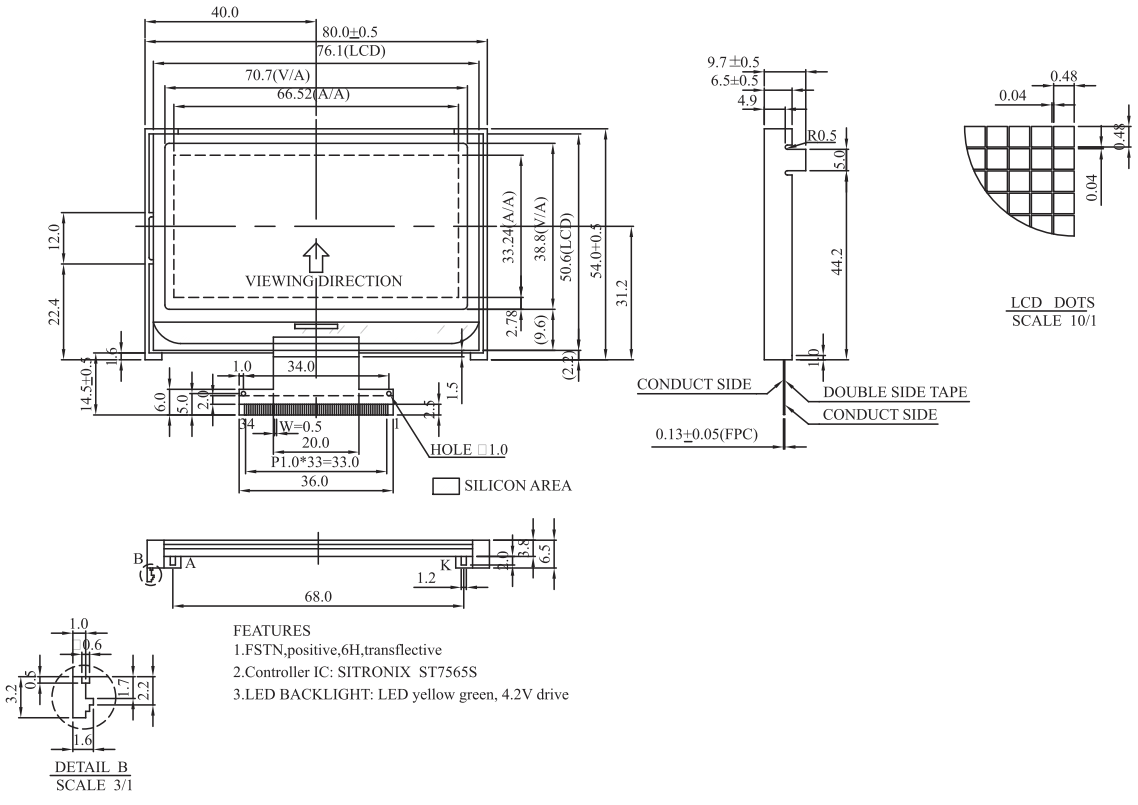
Mechanical Data

Item	Standard Value	Unit
Module Dimension	80.0 x 54.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	9.0	V

Mechanical Drawing



COG12864-12

Graphic 128x64dots

Part number list

BO12864E1□□□□$

Feature

1.Bulit-in controller ST7565P
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 interface

Pin Assignment

Pin	Symbol	Function
1	VSS	Power supply (GND)
2	VDD	Power supply (+3.3V)
3	VO	Contrast Adjustment
4	/RES	Reset signal
5	/CS	Chip select
6	RS	Command/Data
7	/WR	80:write signal 68:R/W signal
8	/RD	80:read signal 68:enable signal
9~16	DB0~DB7	Data bus
17	A	Power supply for B/L+
18	K	Power supply for B/L-

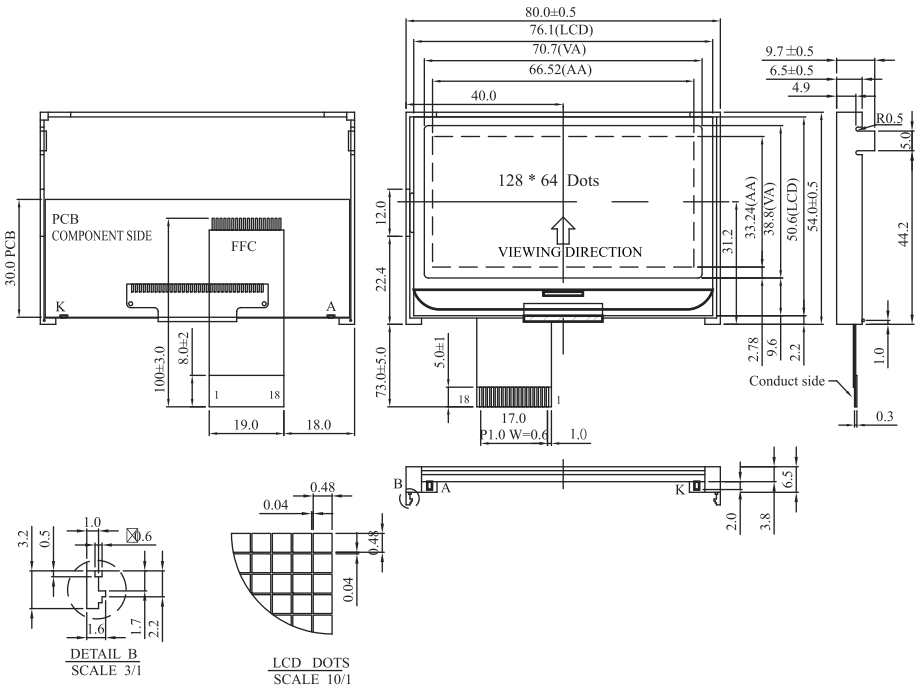
Mechanical Data

Item	Standard Value	Unit
Module Dimension	80.0 x 54.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	9.0	V

Mechanical Drawing



COG12864-13

Graphic 128x64dots

Part number list

BO12864E2□□□□$

Feature

1.Bulit-in controller ST7565P
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin	Symbol	Pin	Symbol
1	/CS1	20	CAP1-
2	/RES	21	CAP2-
3	A0	22	CAP2+
4	/WR(R/W)	23	CAP4-
5	/RD(E)	24	VRS
6~13	D0~D7	25~29	V1~V5
14	Vdd	30	VR
15	VSS	31	C86
16	VOUT	32	P/S
17	CAP5-	33	/HPM
18	CAP3-	34	IRS
19	CAP1+		

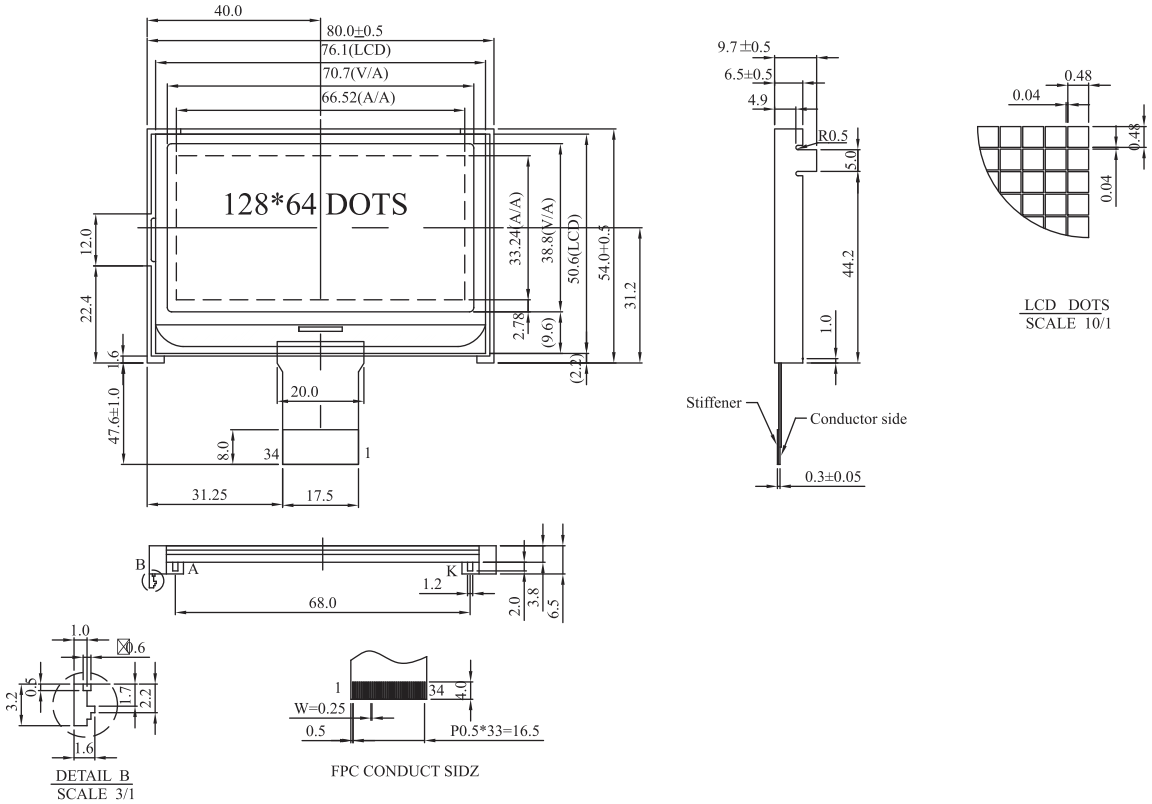
Mechanical Data

Item	Standard Value	Unit
Module Dimension	80.0 x 54.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	9.0	V

Mechanical Drawing



COG12864-14

Graphic 128x64dots

Part number list

WO12864D3-□□□-□□#

Feature

1.Bulit-in controller ST7565P
2.Bulit-in oscillation and voltage regulator
3.+3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	/CS1	The chip select signal
2	/RES	Controller reset signal, Active Low
3	A0	Data/ Instruction select signal
4	/WR(R/W)	8080 family: Write signal, 6800 family: Read/Write signal
5	/RD(E)	8080 family: Read signal, 6800 family: Enable clock
6~13	D0~D7	Data bus line
14	V_{DD}	Power supply for logic
15	V_{SS}	Ground
16	Vout	Positive Voltage output
17	CAP5+	DC/DC voltage converter
18	CAP3+	DC/DC voltage converter.
19	CAP1-	DC/DC voltage converter.
20	CAP1+	#N/A
21	CAP2+	DC/DC voltage converter.
22	CAP2-	DC/DC voltage converter.
23	CAP4+	DC/DC voltage converter.
24	VRS	This is the internal-output VREG power supply for the LCD power supply voltage regulator.
25	V4	Bias voltage levels for LCD driving
26	V3	Bias voltage levels for LCD driving
27	V2	Bias voltage levels for LCD driving
28	V1	Bias voltage levels for LCD driving
29	V0	Bias voltage levels for LCD driving
30	VR	LCD Contrast Adjustment when IRS = "L"
31	C86	Interface selection 6800/8080
32	P/S	Selects the interface type: Serial or Parallel.
33	/HPM	Control power supply for LCD "H": Normal mode, "L": High power mode
34	IRS	Selects the resistors for the V0 voltage level adjustment

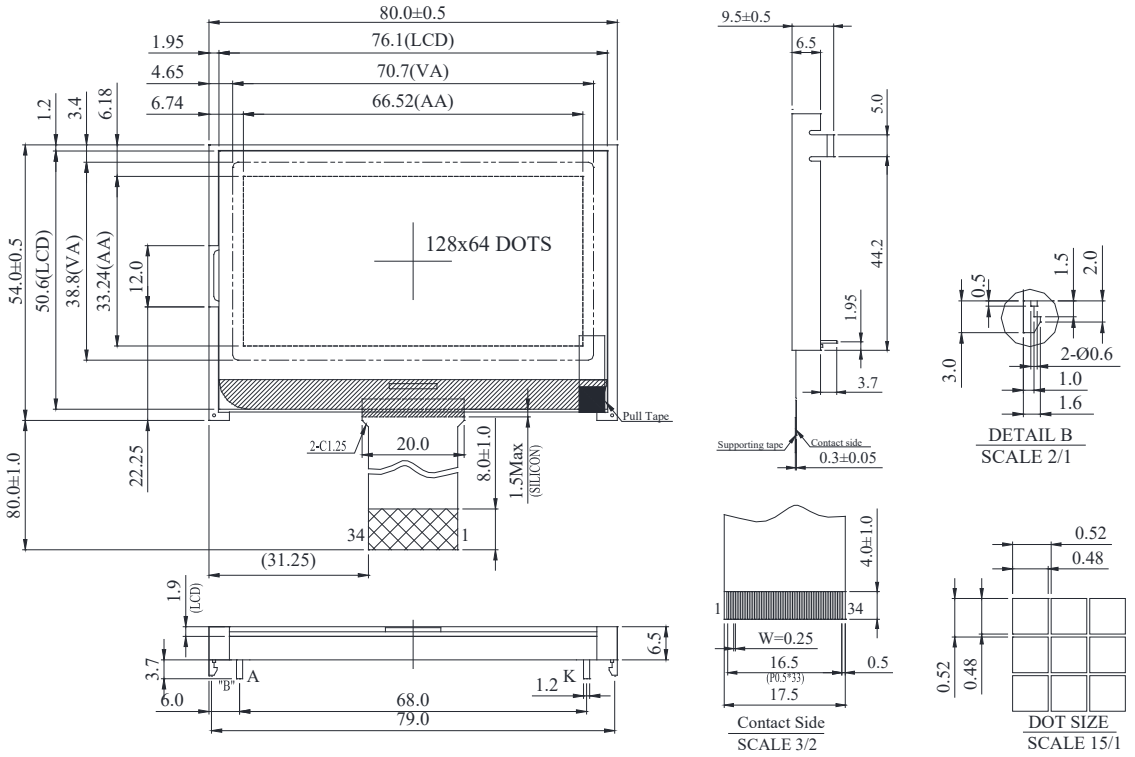
Mechanical Data

Item	Standard Value	Unit
Module Dimension	80.0 x 54.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	10.0	V

Mechanical Drawing



COG12864-15

Graphic 128x64dots

Part number list

WO12864H-□□□-□□#

Feature

1.Bulit-in controller ST7567
2.Bulit-in oscillation and voltage regulator
3.+3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	PSB	Selects the interface type: Serial or Parallel.
2	C86	Interface selection 6800/8080
3	VG	VG is the power of SEG-drivers.
4	XV0	Negative operating voltage of COM-drivers.
5	V0	Bias voltage levels for LCD driving
6	V_{SS}	Ground
7	V_{DD}	Power supply for logic
8	D7	Data bus line
9	D6	Data bus line
10	D5	Data bus line
11	D4	Data bus line
12	D3	Data bus line
13	D2	Data bus line
14	D1	Data bus line
15	D0	Data bus line
16	ERD	8080 family: Read signal, 6800 family: Enable clock
17	RWR	8080 family: Write signal, 6800 family: Read/Write signal
18	A0	Data/ Instruction select signal
19	RSTB	Controller reset signal, Active Low
20	CSB	Chip select input pins

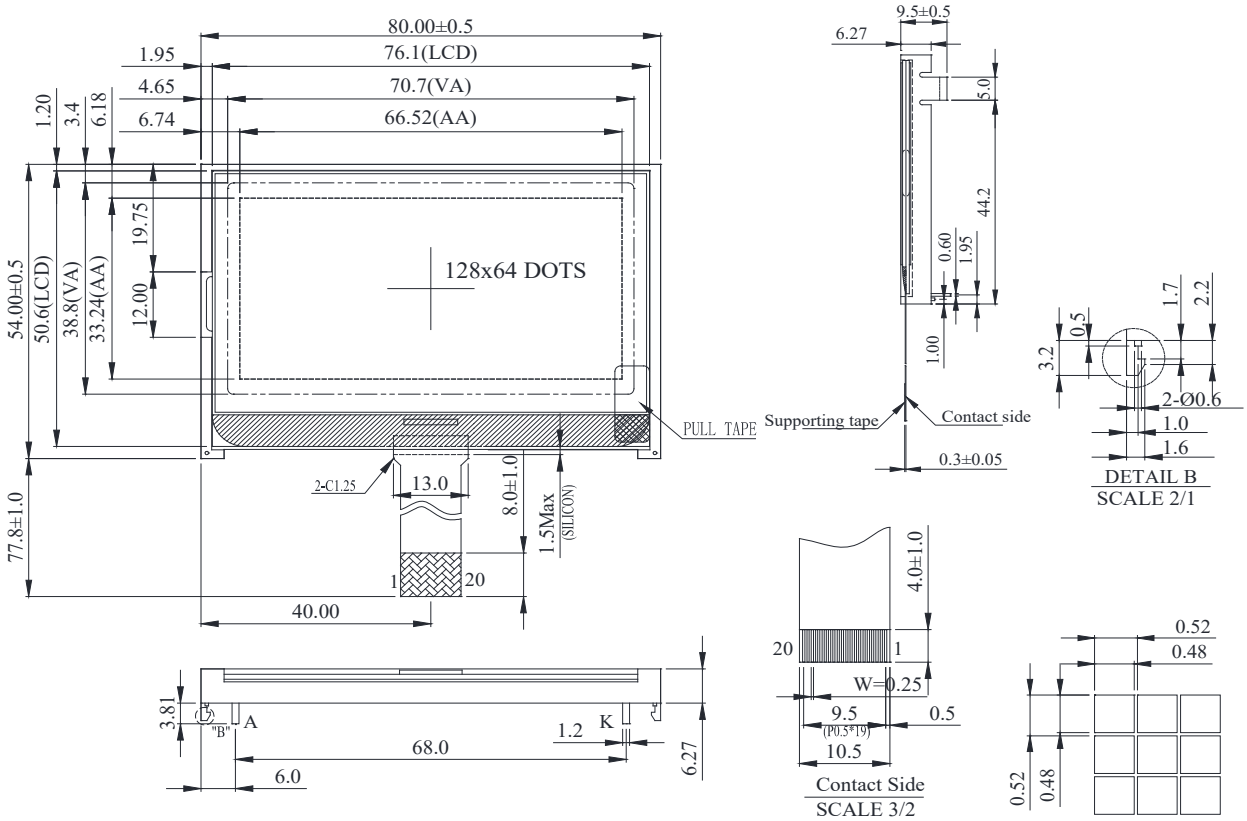
Mechanical Data

Item	Standard Value	Unit
Module Dimension	80.0 x 54.0	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	10.0	V

Mechanical Drawing



COG12864-16

Graphic 128x64dots

Part number list

BO12864G□□□□$

Feature

1.Bulit-in controller ST7588T
2.Bulit-in oscillation and voltage regulator
3.+3V single power supply
4.I2C interface

Pin Assignment

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	
10	VOUT	DC-DC voltage converter
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

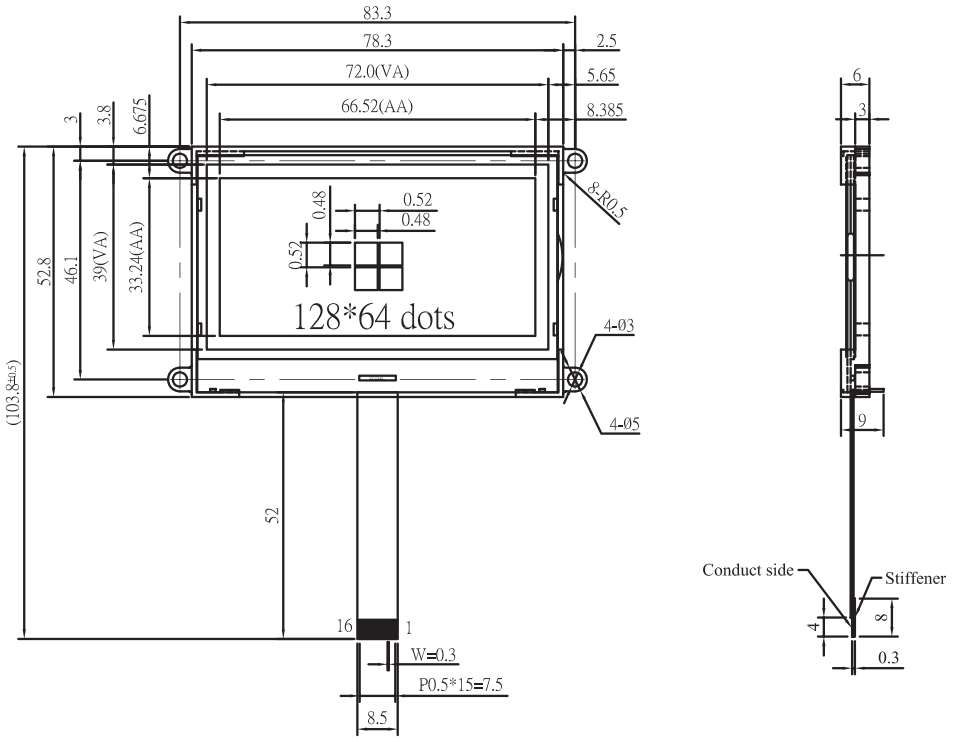
Mechanical Data

Item	Standard Value	Unit
Module Dimension	88.3 x 52.8	mm
Active Area	66.52 x 33.24	mm
Dot Pitch	0.52 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	9.2	V

Mechanical Drawing



TAB12864-01

Graphic 128x64dots

Part number list

WX12864T-□□□-□□#

Feature

1.Bulit-in controller NT7534
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	NC	No connection
2	IRS	Selects the resistors for the V0 voltage level adjustment
3	/HPM	Control power supply for LCD "H": Normal mode, "L": High power mode
4	P/S	Selects the interface type: Serial or Parallel.
5	C86	Interface selection 6800/8080
6	CLS	Enable/Disable internal oscillator. "H" : Enable, "L" : Disable
7	M/S	Master/Slave selects pin
8	VR	LCD Contrast Adjustment when IRS = "L"
9~13	V0	Bias voltage levels for LCD driving
	V4~V1	
14~15	NC	No connection
16	C2-	DC/DC voltage converter.
17	C2+	
18	C1+	
19	C1-	
20	C3+	
21	NC	No connection
22	Vout	Positive Voltage output
23	V_{SS}	Ground
24	VDD2	Analog power for internal booster.
25	V_{DD}	Power supply for logic
26	DUTY1	Select the max. LCD driver Duty
27	DUTY0	"00" : 1/33 duty, "01" : 1/49 duty, "1* " : 1/65 duty
28~35	D7~D0	Data bus line
36	/RD	Data read. Read data from LCD Controller
37	/WR	Data write. Write data into LCD Controller
38	A0	Data/ Instruction select signal
39	/RES	Controller reset signal, Active Low
40	CS2	Ground output for pad option.
41	/CS1	These are the power supply pads for the step-up voltage circuit for the LCD. These pads must be connected to each other.
42	NC	No connection
43	/DOF	This is the LCD blanking control terminal.
44	CL	External clock 2KHZ
45	FR	Scan start-up signal
46~49	NC	No connection

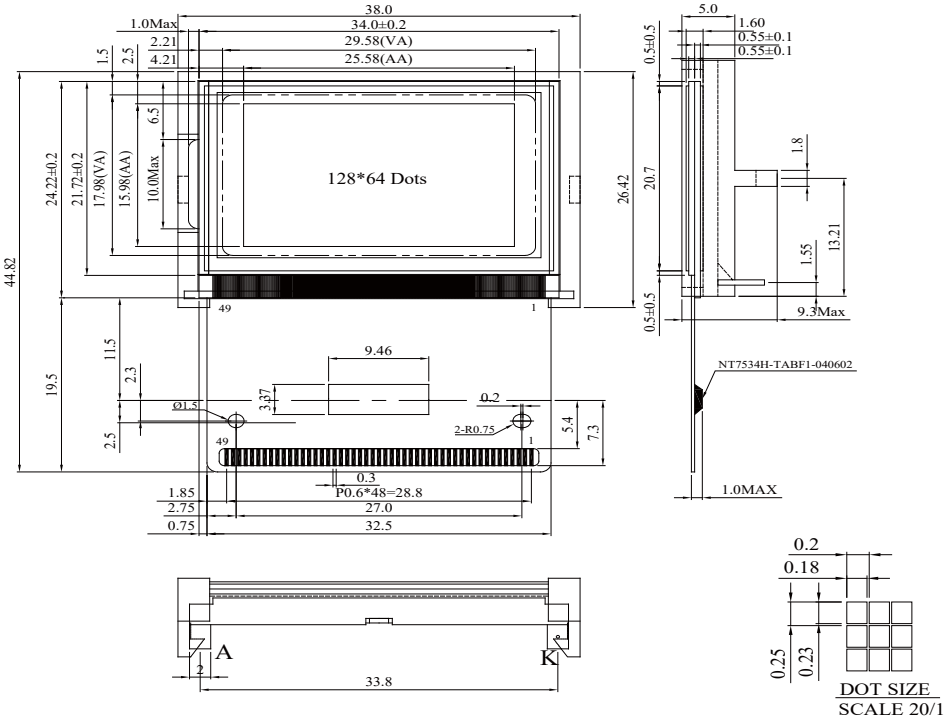
Mechanical Data

Item	Standard Value	Unit
Module Dimension	38.0 x 44.82	mm
Active Area	25.58 x 15.98	mm
Dot Pitch	0.20 x 0.25	mm
Dot Size	0.18 x 0.23	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vo-Vss	9.0	V

Mechanical Drawing



TAB12864-02

Graphic 128x64dots

Part number list

WX12864T1-□□□-□□#

Feature

1.Bulit-in controller NT7534
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 / SPI interface
5.FPC

Pin Assignment

Pin No.	Symbol	Description
1	V_{DD}	Power supply for logic
2	V_{SS}	Ground
3	CS1B	Chip select input pins Data/instruction i/o is enabled only when CS1Bis"L"and CS2"H" When chip select is non-active,DB0 TO DB7 may be high impedance.
4	CS2	Chip select input pins Data/instruction i/o is enabled only when CS1Bis"L"and CS2"H.When chip select is non-active,DB0 TO DB7 may be high impedance.
5	RES	Controller reset signal, Active Low
6	A0	Data/ Instruction select signal
7	R/W	Read/Write select signal
8	E	Enable signal
9~16	DB0~DB7	Data bus line
17	C86	Interface selection 6800/8080
18	P/S	Selects the interface type: Serial or Parallel.

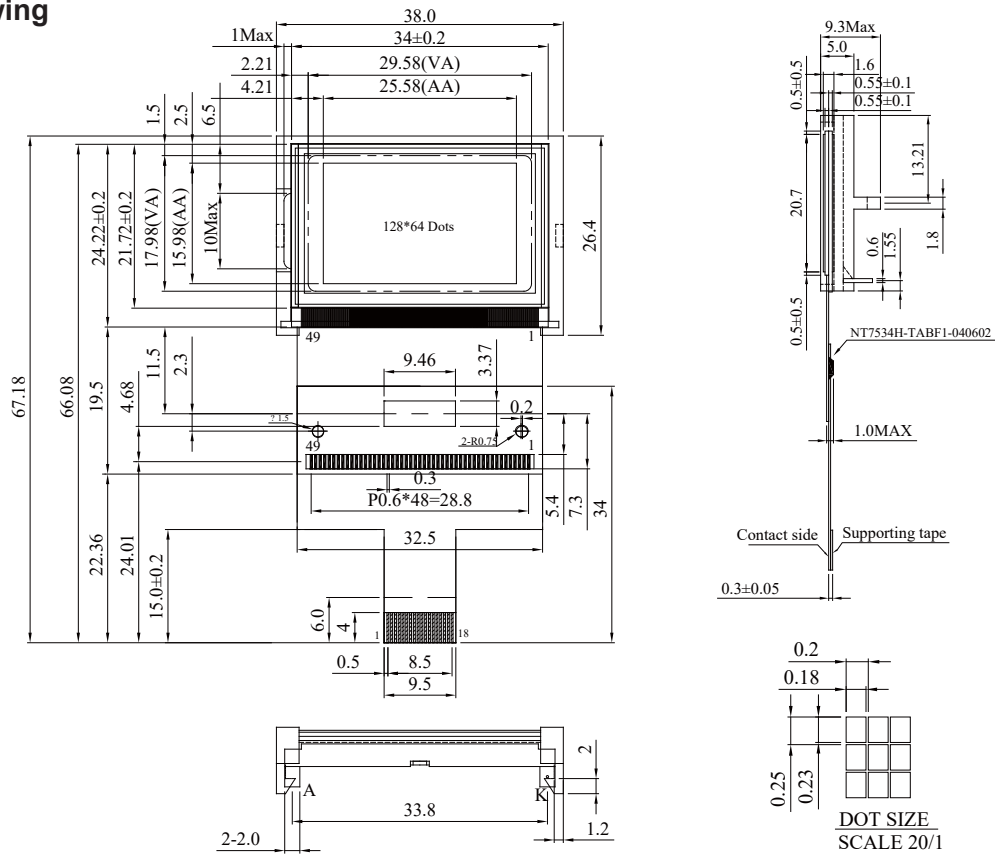
Mechanical Data

Item	Standard Value	Unit
Module Dimension	38.0 x 44.82	mm
Active Area	25.58 x 15.98	mm
Dot Pitch	0.20 x 0.25	mm
Dot Size	0.18 x 0.23	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	Vo-Vss	9.0	V

Mechanical Drawing



COB128128-01

Graphic 128x128dots

Part number list

BG128128A□□□□□$

Feature

1.Built-in controller LC7981 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.(Option) Built-in Negative voltage

Pin Assignment

Pin	Symbol	Function
1~8	DB0-7	Data bus line
9	RS	Data/Instruction select
10	R/W	Data read/write
11	E	Enable signal
12	/CS	Chip select
13	/RST	Reset signal
14	Vo	Contrast adjustment
15	Vdd	Power supply(+5V)
16	Vss	Power supply(GND)
17	Vee	Negative Voltage Output(-15V)
18	NC	No connection
19	A	Power supply for B/L +
20	K	Power supply for B/L -

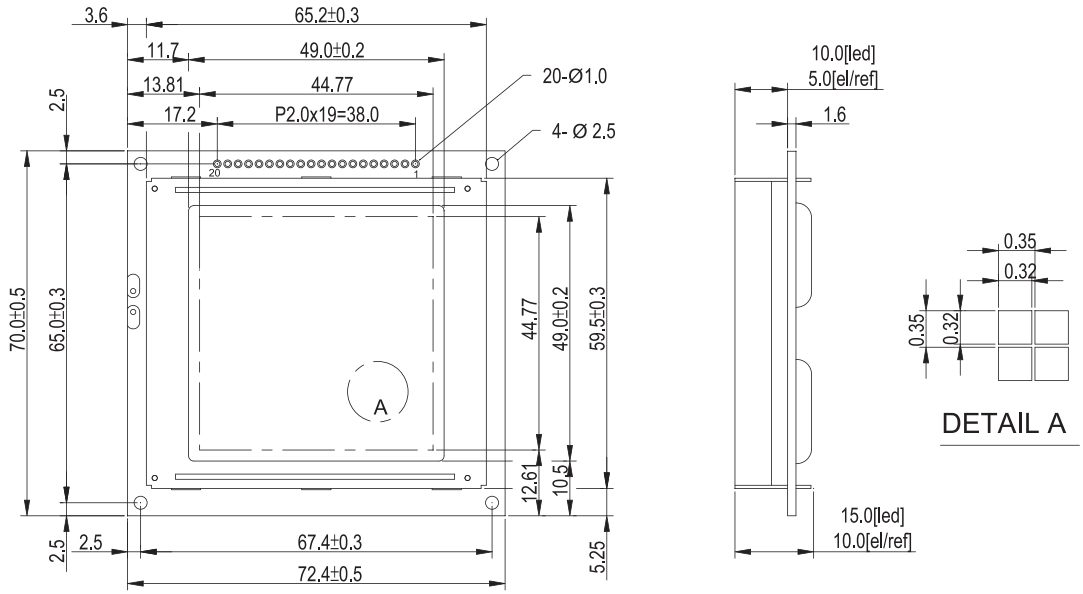
Mechanical Data

Item	Standard Value	Unit
Module Dimension	72.4 x 70.0	mm
Active Area	44.77 x 44.77	mm
Dot Pitch	0.35 x 0.35	mm
Dot Size	0.32 x 0.32	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	8.5	V

Mechanical Drawing



COB128128-02

Graphic 128x128dots

Part number list

WG128128B-□□□-□□#

Feature

1.Built-in controller LC7981 or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin	Symbol	Function
1~8	DB0-7	Data bus line
9	RS	Data/Instruction select
10	R/W	Data read/write
11	E	Enable signal
12	/CS	Chip select
13	/RST	Reset signal
14	Vo	Contrast adjustment
15	Vdd	Power supply(+5V)
16	Vss	Power supply(GND)
17	Vee	Negative Voltage Output
18	NC	No connection
19	A	Power supply for B/L +
20	K	Power supply for B/L -

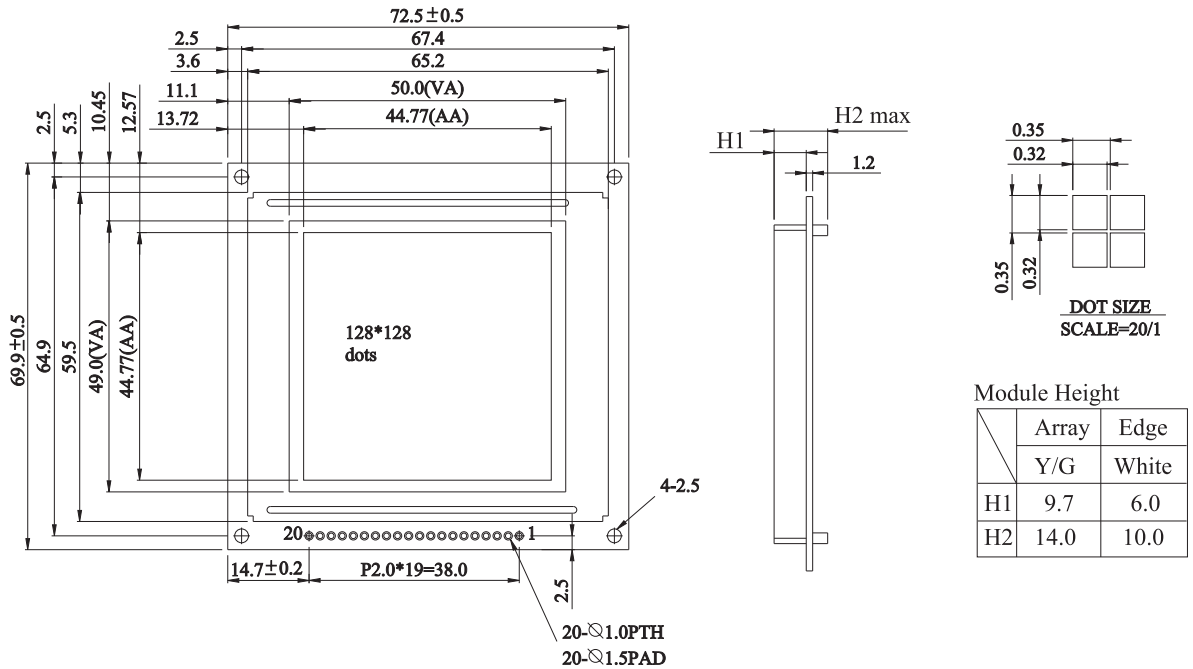
Mechanical Data

Item	Standard Value	Unit
Module Dimension	72.5 x 69.9	mm
Active Area	44.77 x 44.77	mm
Dot Pitch	0.35 x 0.35	mm
Dot Size	0.32 x 0.32	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	17.0	V

Mechanical Drawing



Module Height

	Array	Edge
	Y/G	White
H1	9.7	6.0
H2	14.0	10.0

COB128128-03

Graphic 128x128dots

Part number list

WG128128I-□□□-□□#

Feature

1.Built-in controller LC7981 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5.(Option) Built-in Negative voltage

Pin Assignment

Pin No.	Symbol	Description
1	DB0	Data bus line
2	DB1	Data bus line
3	DB2	Data bus line
4	DB3	Data bus line
5	DB4	Data bus line
6	DB5	Data bus line
7	DB6	Data bus line
8	DB7	Data bus line
9	C/D	Data/ Instruction select signal
10	/RD	Data read. Read data from LCD Controller
11	/WR	Data write. Write data into LCD Controller
12	/CE	Enable signal
13	/RST	Controller reset signal, Active Low
14	V_O	Contrast Adjustment
15	V_{DD}	Power supply for logic
16	V_{SS}	Ground
17	V_{EE}	Negative Voltage Output
18	NC/FS	No connection
19	A	Power supply for B/L +
20	K	Power supply for B/L -

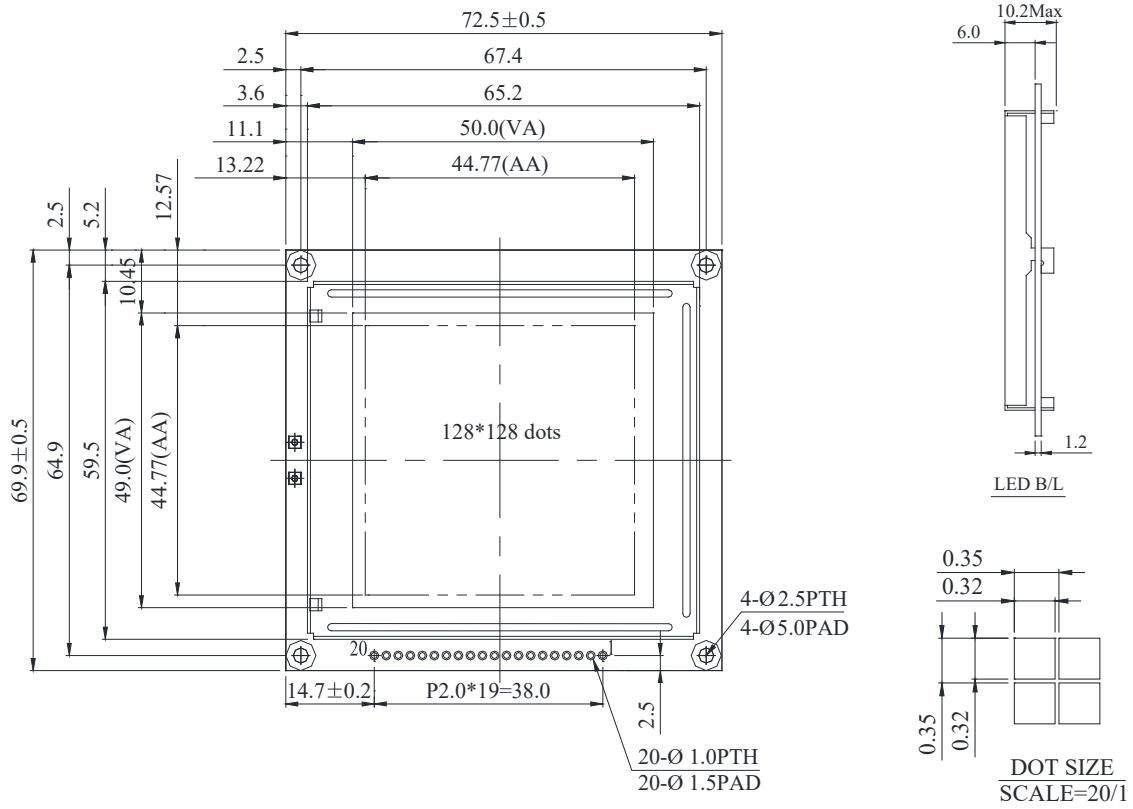
Mechanical Data

Item	Standard Value	Unit
Module Dimension	72.5 x 69.9	mm
Viewing Area	50.0 x 49.0	mm
Mounting Hole	67.4 x 64.9	mm
Dot Pitch	0.35 x 0.35	mm
Dot Size	0.32 x 0.32	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	16.3	V

Mechanical Drawing



COB128128-04

Graphic 128x128dots

Part number list

WG128128A-□□□-□□#

BG128128B□□□□□$

Feature

1.Built-in controller T6963C or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5.(Option) Built-in Negative voltage

Pin Assignment

Pin	Symbol	Function
1	FGND	Frame ground
2	Vss	Logic power supply(GND)
3	Vdd	Logic power supply (+5V)
4	Vo	Contrast Adjustment
5	/WR	Data write
6	/RD	Data read
7	/CE	Chip enable
8	C/D	Command/Data read/write
9	NC	No connection
10	/RST	Reset LCD module signal
11~18	DB0~7	Data bus line
19	FS	Font Selection
20	Vee/NC	Negative voltage output
21	A	Power supply for B/L +
22	K	Power supply for B/L -

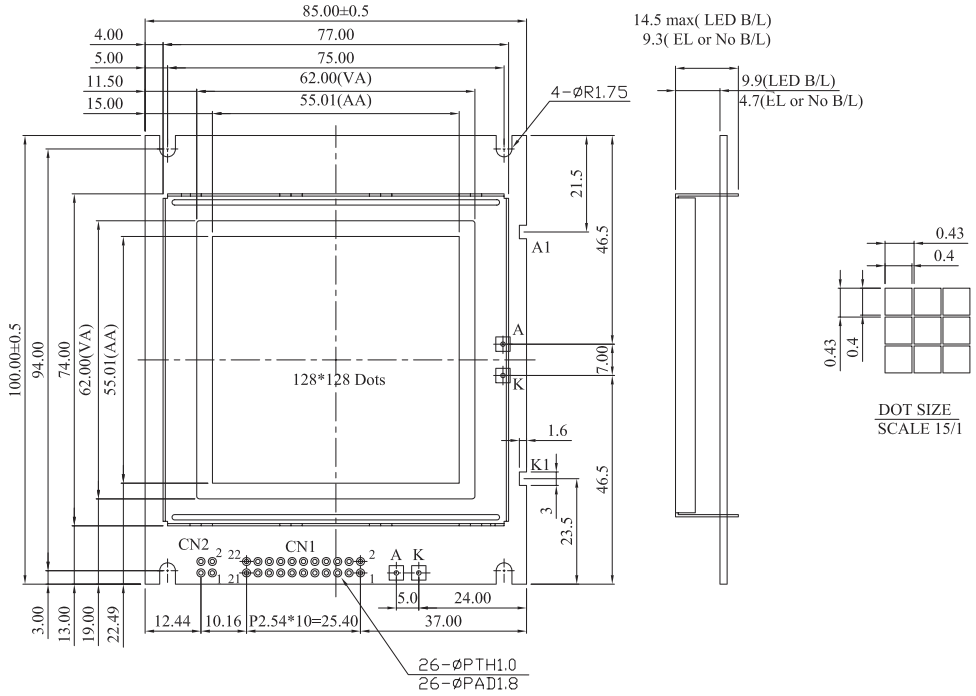
Mechanical Data

Item	Standard Value	Unit
Module Dimension	85.0 x 100.0	mm
Active Area	55.01 x 55.01	mm
Dot Pitch	0.43 x 0.43	mm
Dot Size	0.40 x 0.40	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	17.3	V

Mechanical Drawing



COB128128-05

Graphic 128x128dots

Part number list

SG128128A□□□-□□-□□-□

Feature

1.Built-in controller T6963C or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 8080 interface

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	Power supply(+5V)
3	Vo	Contrast adjustment
4	C/D	Command/data
5	/RD	Data read
6	/WR	Data write
7~14	DB0~7	Data bus line
15	/CE	Chip enable
16	/RST	Reset signal
17	Vee	Negative voltage output
18	MD2	Column No. selection (H:32 column, L: 40 columns)
19	FS	Font selection (H:6x8,L:8x8)
20	NC	No connection

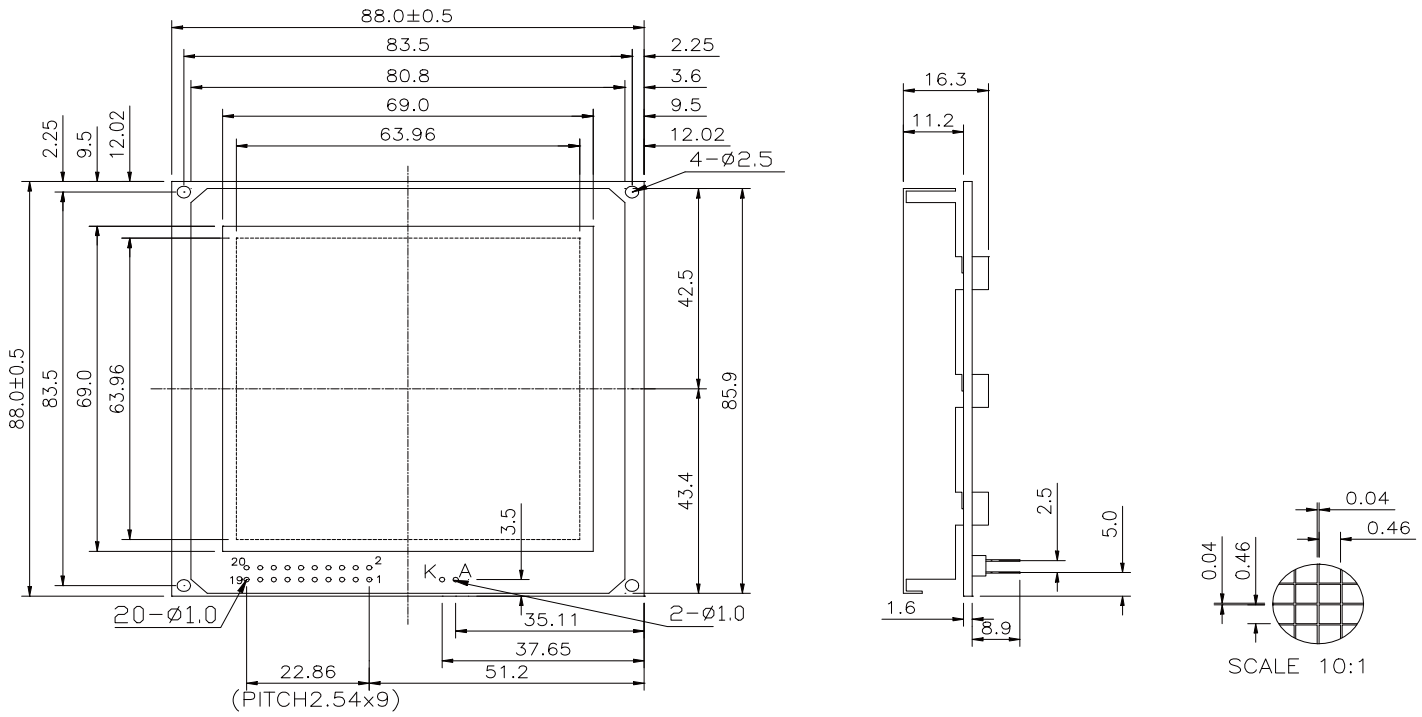
Mechanical Data

Item	Standard Value	Unit
Module Dimension	88.0 x 88.0	mm
Active Area	63.96 x 63.96	mm
Dot Pitch	0.50 x 0.50	mm
Dot Size	0.46 x 0.46	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	18.5	V

Mechanical Drawing



COB128128-06

Graphic 128x128dots

Part number list

SG128128B□□□-□□-□□-□

Feature

1.Built-in controller T6963C or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 8080 interface

Pin Assignment

Pin	Symbol	Function
1	FGND	Frame ground
2	Vss	Logic power supply(GND)
3	Vdd	Logic power supply (+5V)
4	Vo	Contrast Adjustment
5	/WR	Data write
6	/RD	Data read
7	/CE	Chip enable
8	C/D	Command/Data read/write
9	/RST	Reset LCD module signal
10~17	DB0~7	Data bus line
18	FS	Font Selection
19	A	Power supply for B/L +
20	HLT	H: normal L: stop clock oscillation

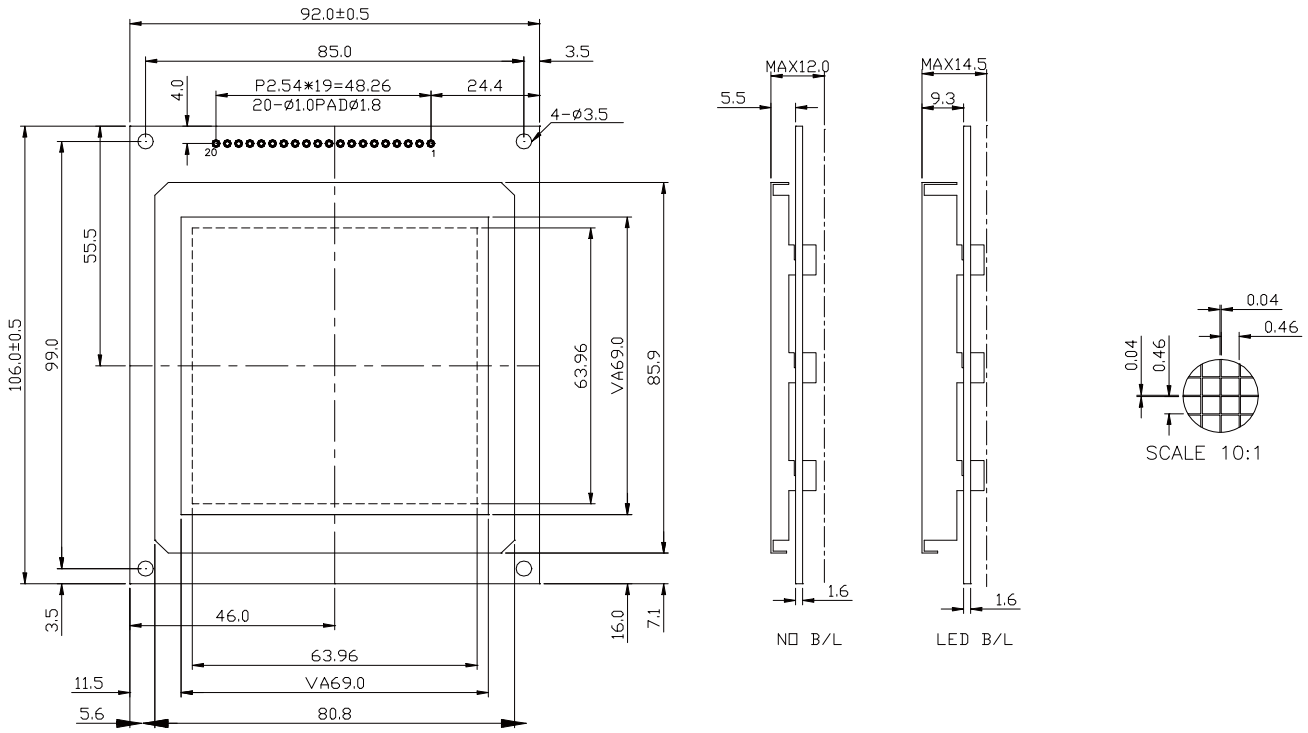
Mechanical Data

Item	Standard Value	Unit
Module Dimension	92.0 x 106.0	mm
Active Area	63.96 x 63.96	mm
Dot Pitch	0.50 x 0.50	mm
Dot Size	0.46 x 0.46	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	18.5	V

Mechanical Drawing



COB128128-07

Graphic 128x128dots

Part number list

BG128128E□□□□□$

Feature

1.Built-in controller T6963C or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5. RGB LED backlight
6. (Option) Built-in Negative voltage

Pin Assignment

Pin	Symbol	Description
1	FGND	Frame ground
2	Vss	Ground
3	Vdd	Power supply for logic (+5V)
4	Vo	Contrast adjustment
5	/WR	Data write.
6	/RD	Data read.
7	/CE	Chip enable
8	C/D	Command/Data read/write
9	/RESET	Reset signal
10-17	DB0~7	Data bus line
18	Fs	Font selection
19	A	Power supply for BL (+)
20	KR	Power supply for BL (GND)
21	KG	Power supply for BL (GND)
22	KB	Power supply for BL (GND)

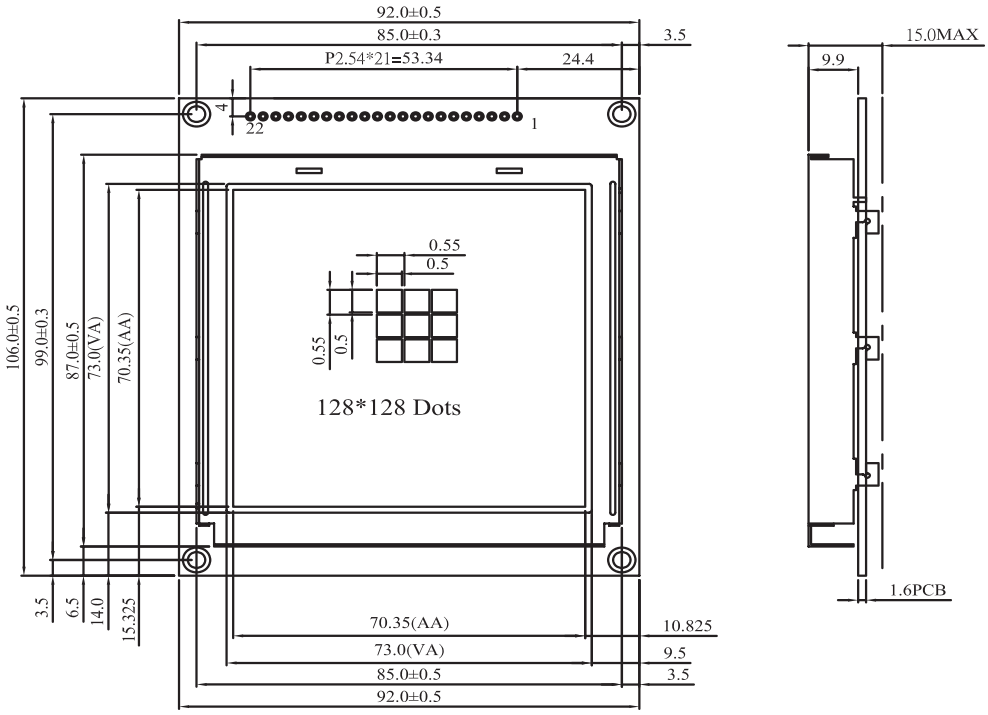
Mechanical Data

Item	Standard Value	Unit
Module Dimension	106.0 x 92.0	mm
Active Area	70.35 x 70.35	mm
Dot Pitch	0.55 x 0.55	mm
Dot Size	0.50 x 0.50	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	TBD	V

Mechanical Drawing



COG128128-01

Graphic 128x128dots

Part number list

BO128128C□□□□$

Feature

1.Bulit-in controller ST7528
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.SPI interface
5. 16 Gray scale available

Pin Assignment

Pin	Symbol	Level	Function
1	NC	-	No connection
2	V0	-	LCD driver voltage V0≧V1≧V2≧V3≧V4≧VSS
3	V1	-	
4	V2	-	
5	V3	-	
6	V4	-	
7	VOUT	-	DC-DC voltage converter
8	VSS	-	Ground
9	VDD	3.0V	Power supply (+3.3V)
10	SID	H/L	Serial Data Input
11	SCLK	H/L	Serial Clock Input
12	A0	H/L	H=Data L=Instruction
13	/RESET	L	Reset : L=Enable H=Disable
14	/CSB	L	L=chip selected H=chip unselected

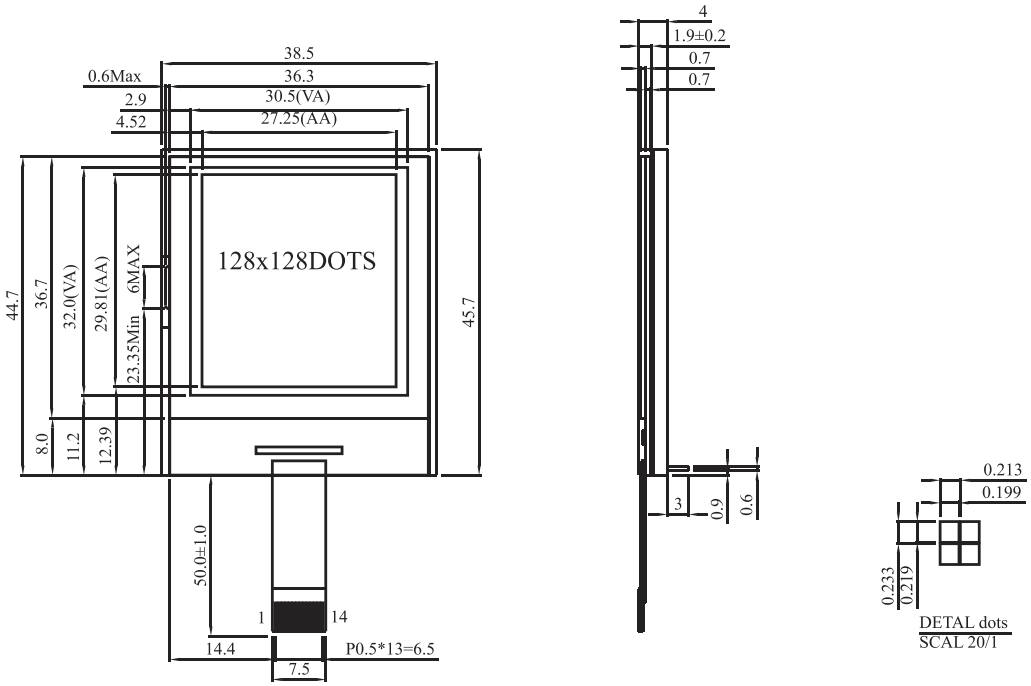
Mechanical Data

Item	Standard Value	Unit
Module Dimension	38.5 x 44.7	mm
Active Area	27.25 x 29.81	mm
Dot Pitch	0.213 x 0.213	mm
Dot Size	0.199 x 0.199	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	13.7	V

Mechanical Drawing



COG128128-02

Graphic 128x128dots

Part number list

BO128128B□□□□$

Feature

1.Bulit-in controller ST7541i
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.I2C interface

Pin Assignment

Pin	Symbol	Level	Function
1	V0	-	LCD driver voltage
2	V1	-	
3	V2	-	
4	V3	-	
5	V4	-	
6	VOUT	-	DC-DC voltage converter
7	VSS	-	Ground
8	VDD	3.0V	Power supply (+3.3V)
9	SCL	H/L	I2C Serial Clock Input
10	SDA	H/L	I2C Serial Data Input
11	/RESET	L	Reset : L=Enable H=Disable
12	NC	-	NC

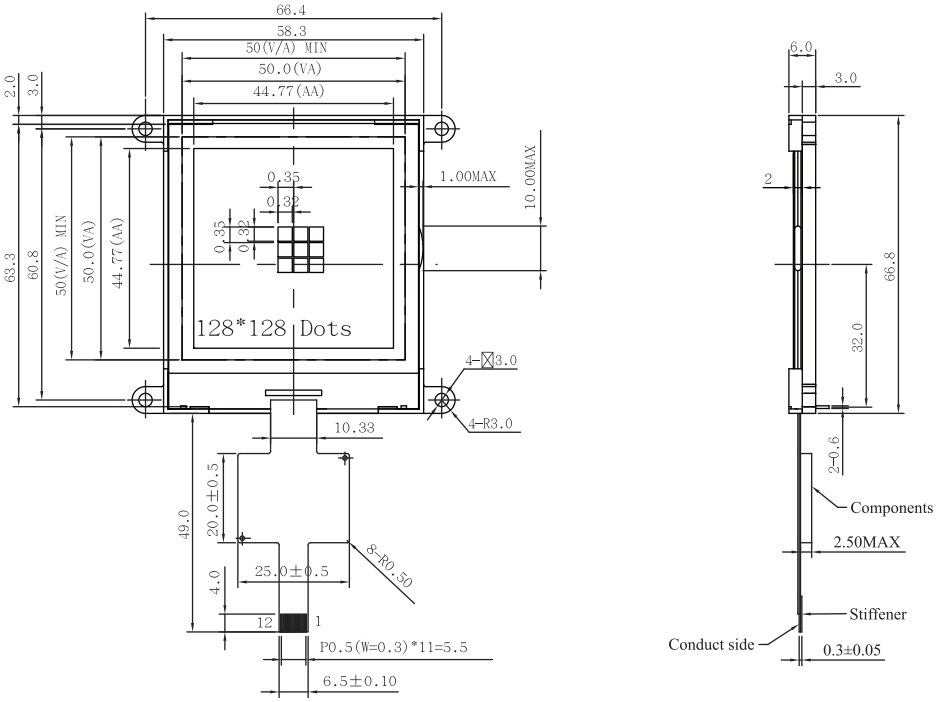
Mechanical Data

Item	Standard Value	Unit
Module Dimension	72.4 x 66.8	mm
Active Area	44.77 x 44.77	mm
Dot Pitch	0.35 x 0.35	mm
Dot Size	0.32 x 0.32	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	14.0	V

Mechanical Drawing



COB14432-01

Graphic 144x32dots

Part number list

WG14432B-□□□-□□#

Feature

1.Built-in controller ST7920
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 / SPI interface
5.Built-in Chinese font
6. (Option) +3V single power supply

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	RS	Data/ Instruction select signal
5	R/W	Read/Write select signal
6	E	Enable signal
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	A	Power supply for B/L +
16	K	Power supply for B/L -

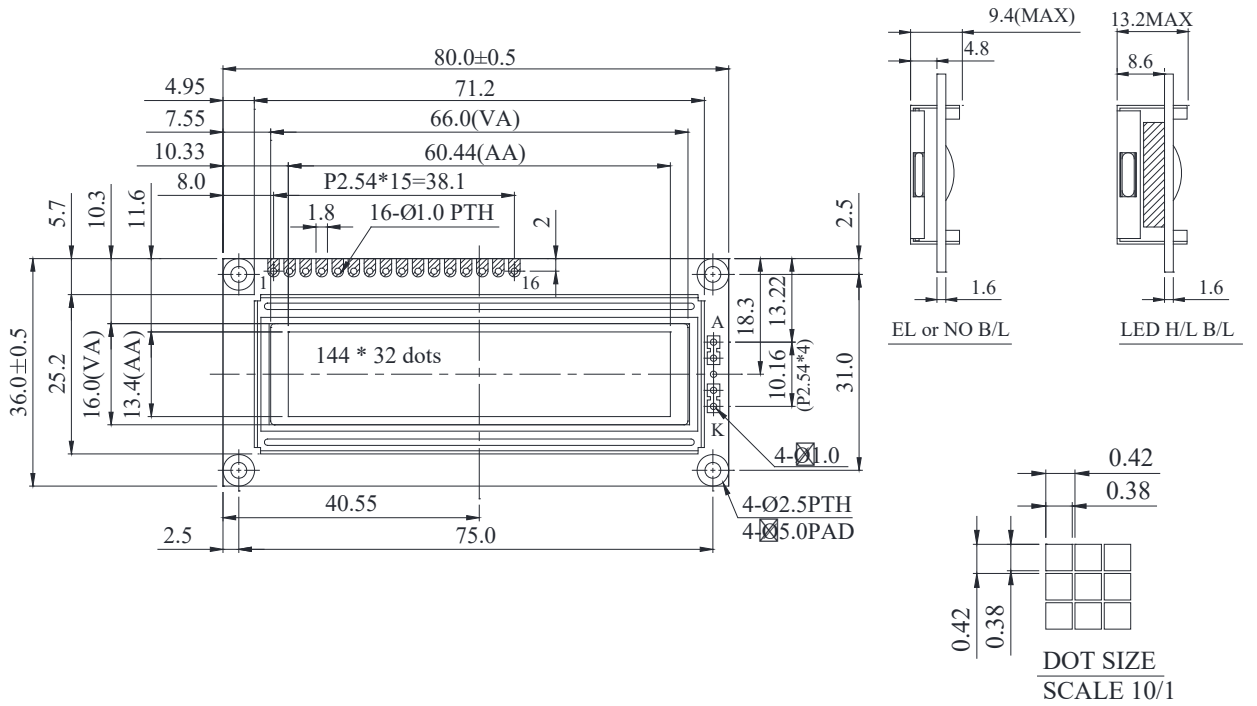
Mechanical Data

Item	Standard Value	Unit
Module Dimension	80.0 x 36.0	mm
Active Area	60.44 x 13.40	mm
Dot Pitch	0.42 x 0.42	mm
Dot Size	0.38 x 0.38	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	Vo-Vss	4.3	V

Mechanical Drawing



COB14432-02

Graphic 144x32dots

Part number list

WG14432D-□□□-□□#

Feature

1.Built-in controller ST7920
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 / SPI interface
5.Built-in Chinese font
6. (Option) +3V single power supply

Pin Assignment

Pin No.	Symbol	Description
1	V_{DD}	Power supply for logic
2	V_{SS}	Ground
3	V_O	Contrast Adjustment
4	RS	Data/ Instruction select signal
5	R/W	Read/Write select signal
6	E	Enable signal
7	DB0	
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line

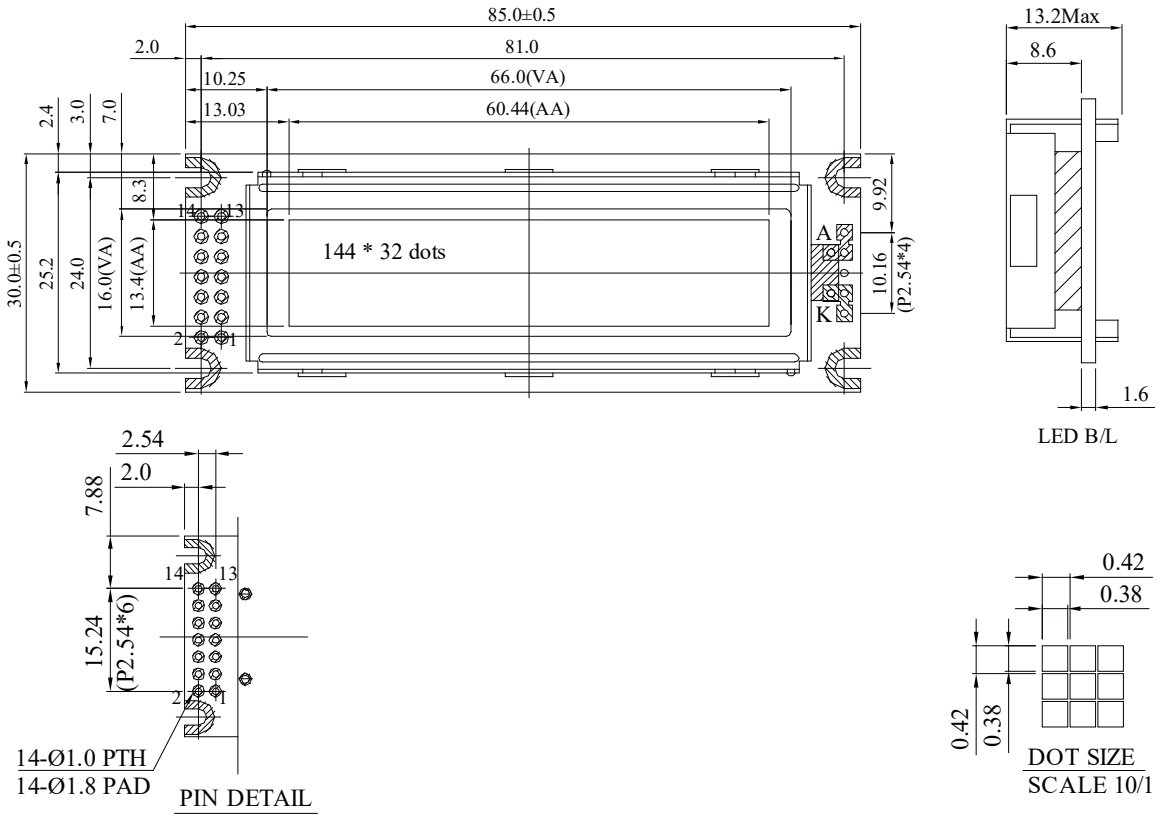
Mechanical Data

Item	Standard Value	Unit
Module Dimension	85.0 x 30.0	mm
Active Area	60.44 x 13.40	mm
Dot Pitch	0.42 x 0.42	mm
Dot Size	0.38 x 0.38	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vo-Vss	4.4	V

Mechanical Drawing



COB14432-03

Graphic 144x32dots

Part number list

WG14432A-□□□-□□#

Feature

1.Built-in controller ST7920
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 / SPI interface
5.Built-in Chinese font
6. (Option) +3V single power supply

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	RS	Data/ Instruction select signal
5	R/W	Read/Write select signal
6	E	Enable signal
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	A	Power supply for B/L +
16	K	Power supply for B/L -

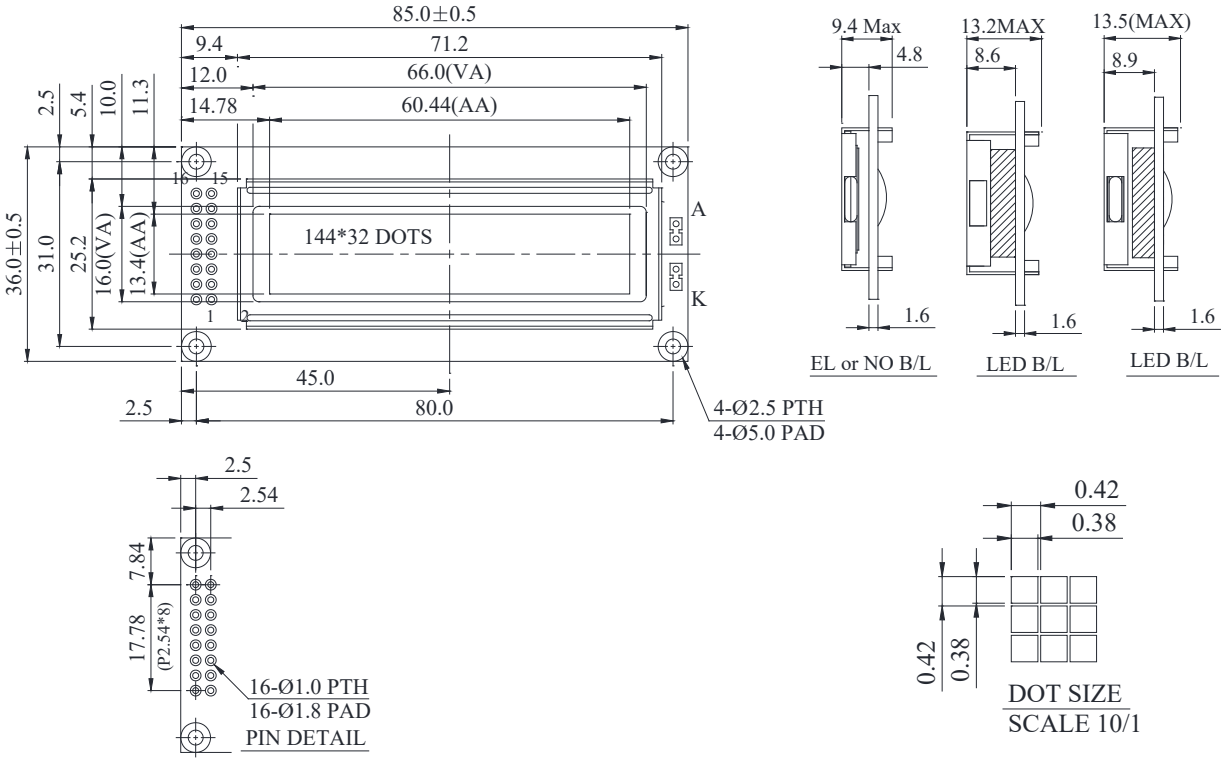
Mechanical Data

Item	Standard Value	Unit
Module Dimension	85.0 x 36.0	mm
Active Area	60.44 x 13.40	mm
Dot Pitch	0.42 x 0.42	mm
Dot Size	0.38 x 0.38	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vo-Vss	4.3	V

Mechanical Drawing



COG14464-01

Graphic 144x64dots

Part number list

WO14464A5-□□□-□□#

Feature

1.Bulit-in controller RA8816N
2.Bulit-in oscillation and voltage regulator
3.+3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	V_{LCD}	Booster Output
2	C3P	DC/DC voltage converter.
3	C2M	
4	C2P	
5	C1M	
6	C1P	
7~11	V0~V4	Bias voltage levels for LCD driving
12	VREF	This is the refeence voltage input when use an external regulator.
13	GND	Ground
14	V_{DD}	Power supply for logic
15~22	DB7~DB0	Data bus line
23	EN	Enable signal
24	R/W	Read/Write select signal
25	RS	Data/ Instruction select signal
26	/CS	Chip select input pins
27	C86	Interface selection 6800/8080
28	P/S	Selects the interface type: Serial or Parallel.
29	INT	This is an interrupt output for MPU. Active low。
30	/RST	Controller reset signal, Active Low

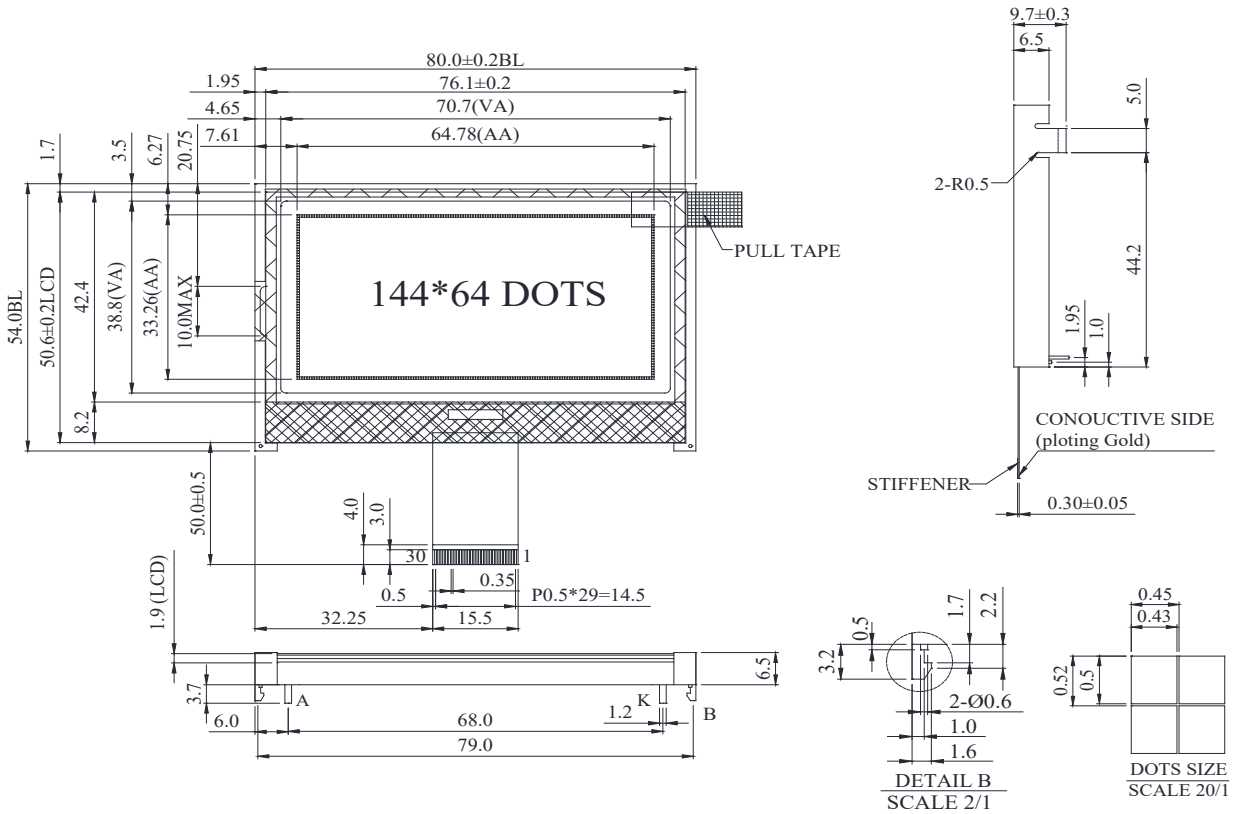
Mechanical Data

Item	Standard Value	Unit
Module Dimension	80.0 x 54.0	mm
Active Area	64.78 x 33.26	mm
Dot Pitch	0.45 x 0.52	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	10.0	V

Mechanical Drawing



COB16032-01

Graphic 160x32dots

Part number list

SG16032A□□□-□□-□□-□

Feature

1.Bulit-in controller ST7920
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5. Built-in Chinese font

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	R/W	Read/Write select signal
6	E	Enable Signal
7~14	DB0~7	Data Bus Line
15	A	Power supply for B/L +
16	K	Power supply for B/L -

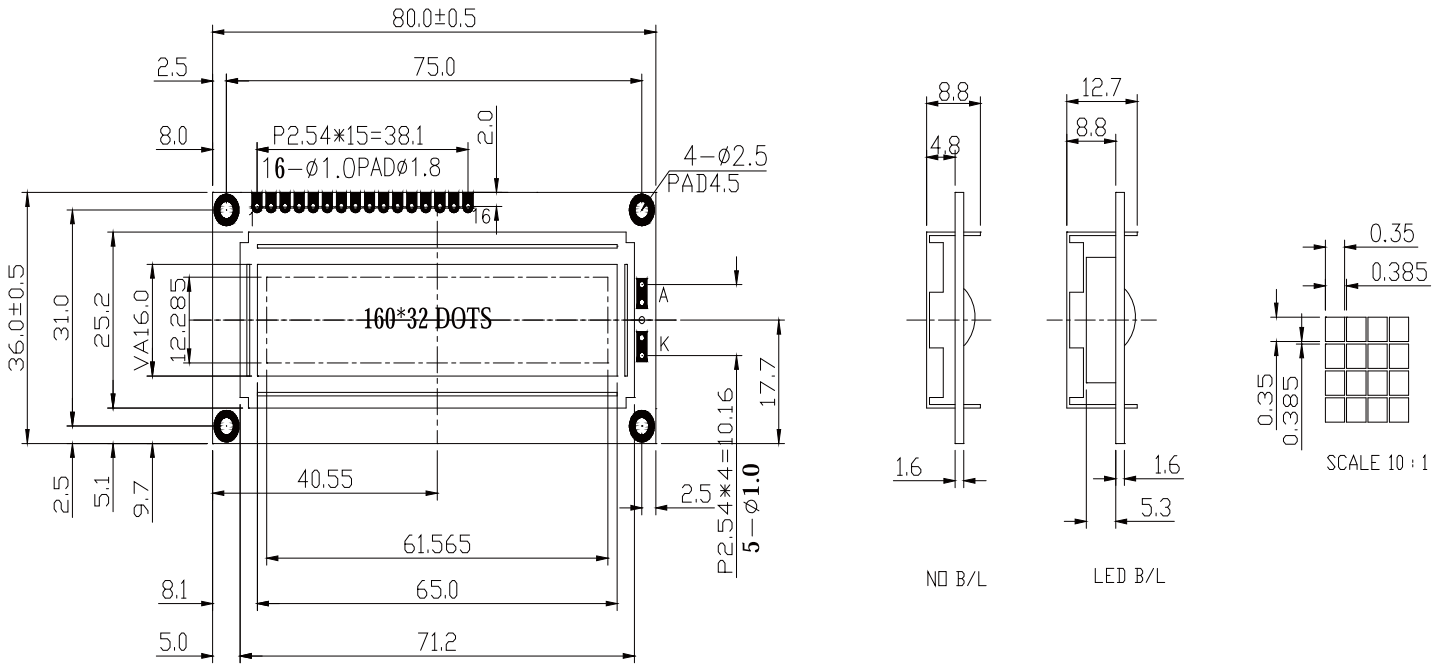
Mechanical Data

Item	Standard Value	Unit
Module Dimension	80.0 x 36.0	mm
Active Area	61.565 x 12.285	mm
Dot Pitch	0.385 x 0.385	mm
Dot Size	0.35 x 0.35	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	4.5	V

Mechanical Drawing



COB16032-02

Graphic 160x32dots

Part number list

WG16032A-□□□-□□#

Feature

1.Bulit-in controller SBN1661G or equivalent
2.No bulit-in oscillation (Need external clock)
3.+5V single power supply
4. Built-in Negative voltage
5. 6800/8080 interface
6.(Option) +3V power supply

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	CS1	Cs1=0 cs2=0 chip select signal for s1~s61 Cs1=0 cs2=1 chip select signal for s62~s141
6	CS2	Cs1=1 cs2=0 chip select signal for s142~s168
7	CL	External clock 2KHZ
8	E	Enable signal
9	R/W	Read/Write select signal
10	DB0	Data bus line
11	DB1	Data bus line
12	DB2	Data bus line
13	DB3	Data bus line
14	DB4	Data bus line
15	DB5	Data bus line
16	DB6	Data bus line
17	DB7	Data bus line
18	RST	Controller reset signal, Active Low
19	A	Power supply for B/L +
20	K	Power supply for B/L -

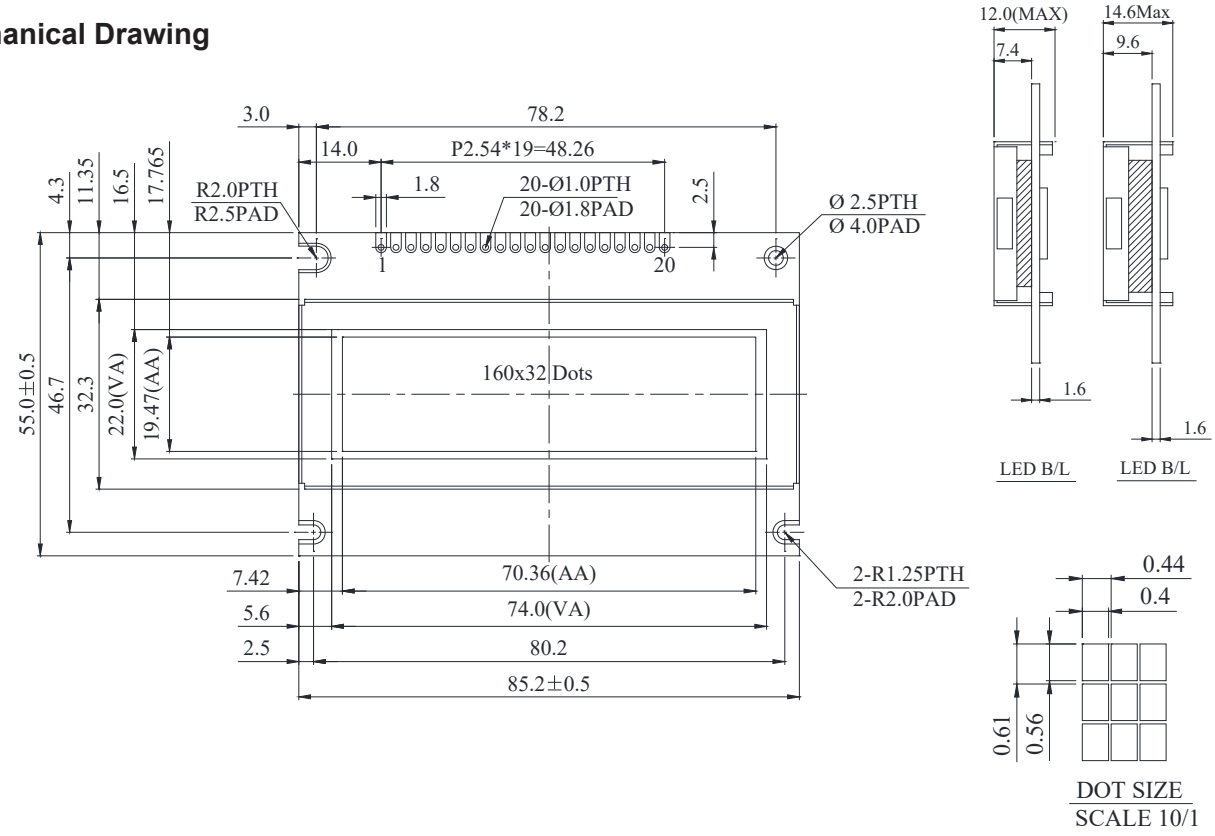
Mechanical Data

Item	Standard Value	Unit
Module Dimension	78.2 x 55.0	mm
Active Area	70.36 x 19.47	mm
Dot Pitch	0.44 x 0.61	mm
Dot Size	0.40 x 0.56	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	5.5	V

Mechanical Drawing



COB16032-03

Graphic 160x32dots

Part number list

BG16032A□□□□□$

Feature

1.Bulit-in controller ST7920
2.Bulit-in oscillation
3.+5V single power supply
4.6800 / SPI interface
5.Built-in Chinese font
6.(Option) +3V power supply with negative voltage

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	+5V(+3V option)
3	Vo	Contrast adjustment
4	RS	H/L register select signal
5	R/W	read/write signal
6	E	H-->L enable singal
7~14	DB0~7	H/L bus line
15	A/Vee	Power supply for B/L (+)/ Negative voltage output
16	K	Power supply for B/L (GND)

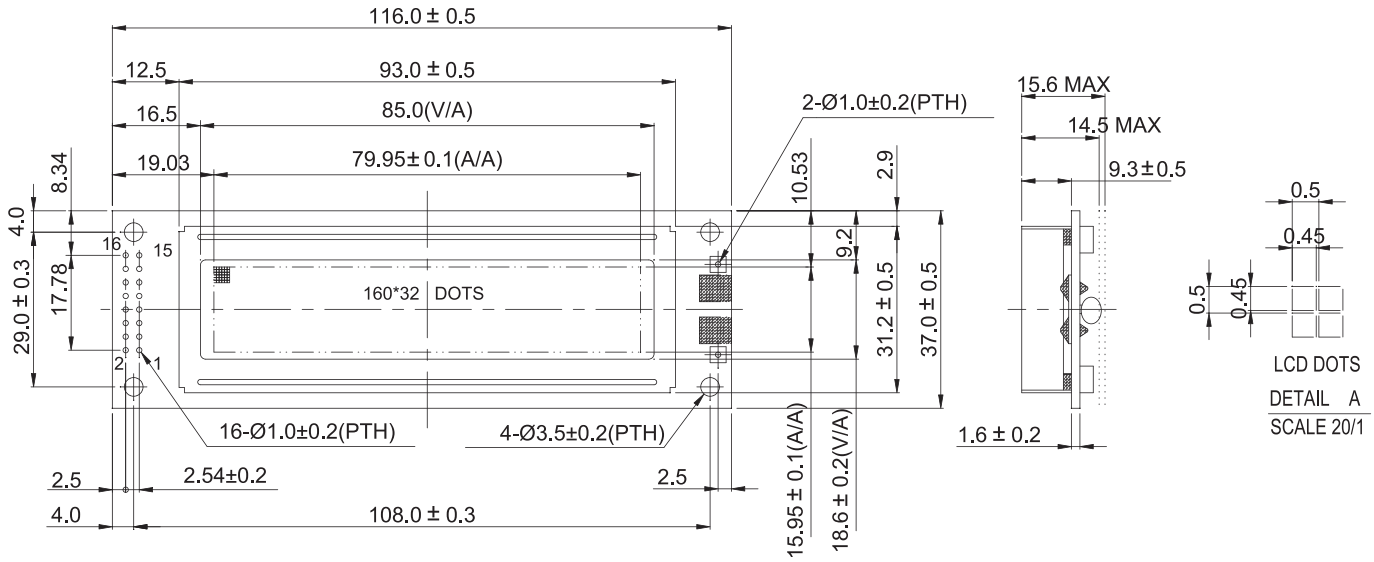
Mechanical Data

Item	Standard Value	Unit
Module Dimension	116.0 x 37.0	mm
Active Area	79.95 x 18.60	mm
Dot Pitch	0.50 x 0.50	mm
Dot Size	0.45 x 0.45	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.5	V

Mechanical Drawing



COB16032-04

Graphic 160x32dots

Part number list

SG16032B□□□-□□-□□-□

Feature

1.Bulit-in controller SBN1661G or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4.6800 interface

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	CS1	Chip Select Signal for IC1
6	CS2	Chip Select Signal for IC2
7	NC	No connection
8	E	Enable Signal
9	R/W	Read/Write select signal
10~17	DB0~7	Data Bus Line
18	/RES	Reset Signal
19	A	Power supply for B/L +
20	K	Power supply for B/L -

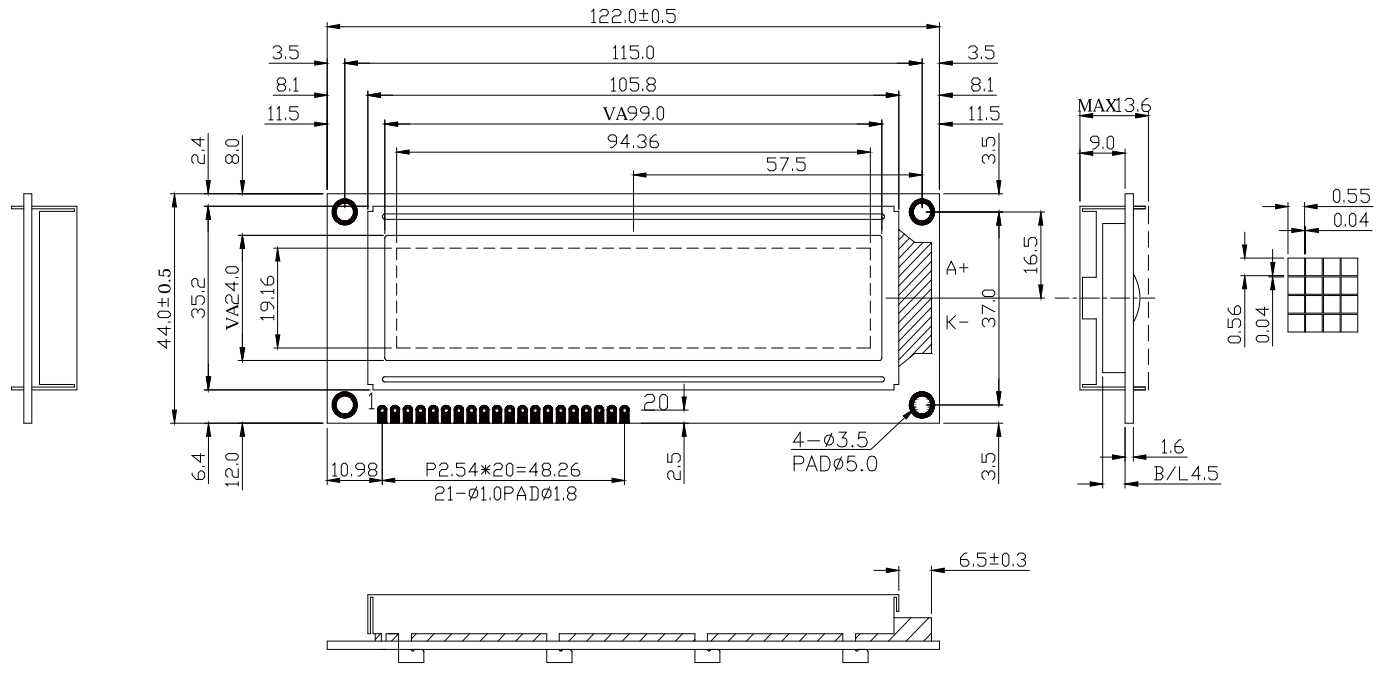
Mechanical Data

Item	Standard Value	Unit
Module Dimension	122.0 x 44.0	mm
Active Area	94.36 x 19.16	mm
Dot Pitch	0.59 x 0.60	mm
Dot Size	0.55 x 0.56	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.8	V

Mechanical Drawing



COB16032-05

Graphic 160x32dots

Part number list

SG16032C□□□-□□-□□-□

Feature

1.Bulit-in controller ST7920
2.Bulit-in oscillation and nagative volatage
3.+5V single power supply
4.6800 / SPI interface
5.Built-in Chinese font

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	RS(CS)	Resister Select (Serial Chip Select)
5	R/W(SID)	Read/Write (Serial data input)
6	E(SCLK)	Enable Signal (Serial clock)
7~14	DB0~7	Data Bus Line
15	PSB	H:6800 L:SPI
16	NC	No connection
17	/RST	Reset Signal
18	VOUT	Power Supply Voltage for LCD
19	A	Power supply for B/L +
20	K	Power supply for B/L -

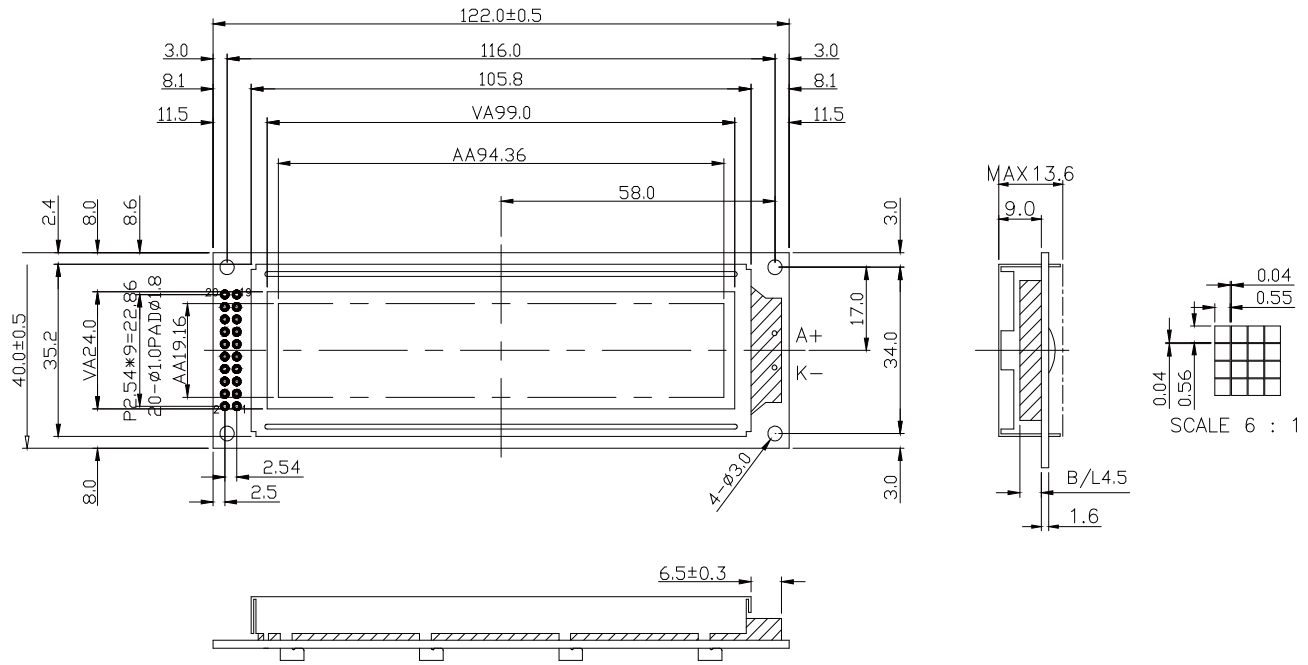
Mechanical Data

Item	Standard Value	Unit
Module Dimension	122.0 x 44.0	mm
Active Area	94.36 x 19.16	mm
Dot Pitch	0.59 x 0.60	mm
Dot Size	0.55 x 0.56	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.8	V

Mechanical Drawing



COB16032-06

Graphic 160x32dots

Part number list

SG16032D□□□-□□-□□-□

Feature

1.Bulit-in controller ST7920
2.Bulit-in oscillation and nagative volatage
3.+5V single power supply
4.6800 interface
5.Built-in Chinese font

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	RS	Resister Select
5	R/W	Read/Write
6	E	Enable Signal
7~14	DB0~7	Data Bus Line
15	A	Power supply for B/L +
16	K	Power supply for B/L -

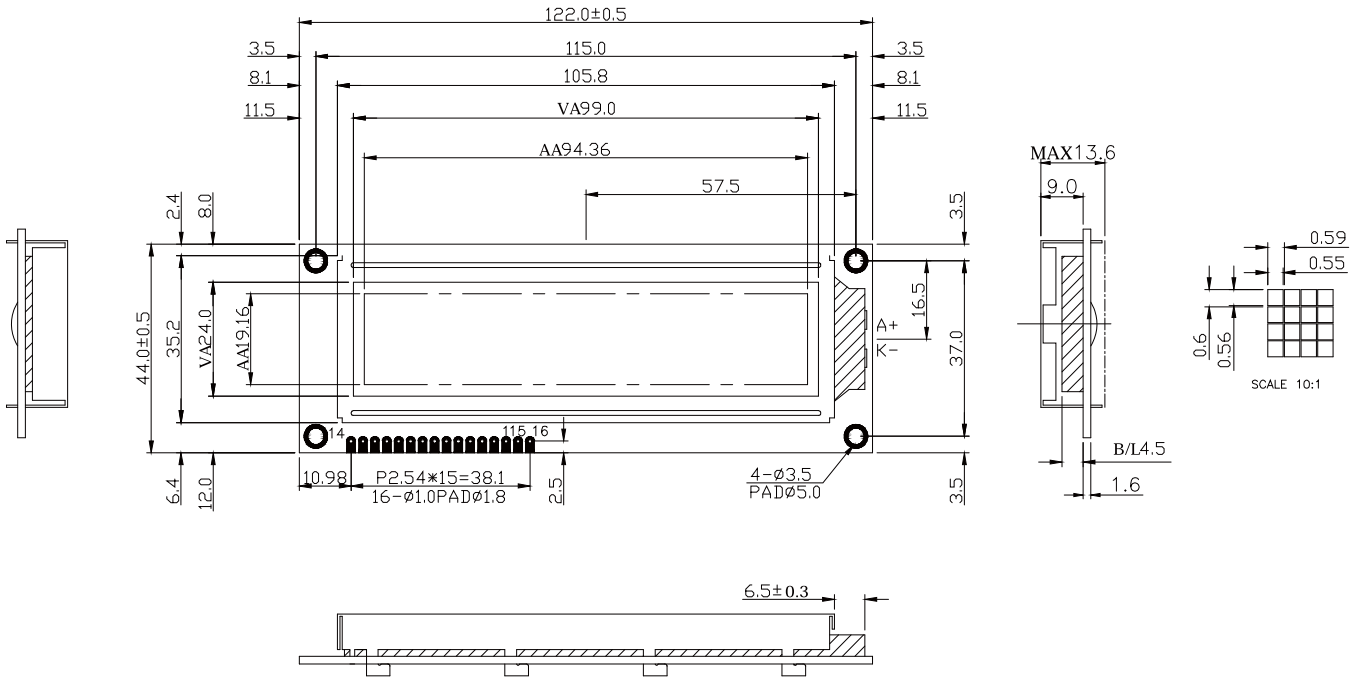
Mechanical Data

Item	Standard Value	Unit
Module Dimension	122.0 x 44.0	mm
Active Area	94.36 x 19.16	mm
Dot Pitch	0.59 x 0.60	mm
Dot Size	0.55 x 0.56	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.8	V

Mechanical Drawing



COB16032-07

Graphic 160x32dots

Part number list

WG16032D5-□□□-□□#

Feature

1.Bulit-in controller ST7920
2.Bulit-in oscillation and negative voltage
3.+3.3V/+5V power supply
4.6800 / SPI interface
5.Built-in Chinese font

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	NC	No connection
4	RS	Data/ Instruction select signal
5	R/W	Read/Write select signal
6	E	Enable signal
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	A	Power supply for B/L +
16	K	Power supply for B/L -

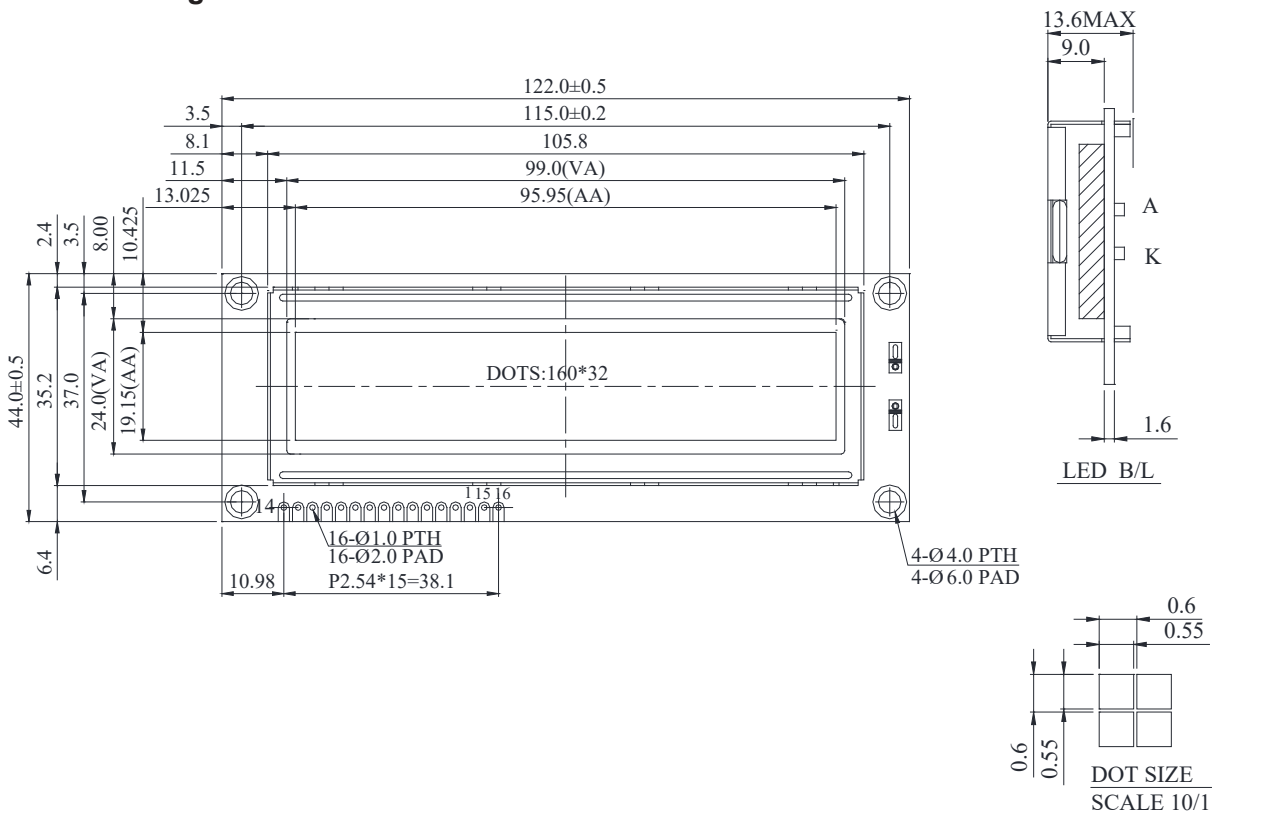
Mechanical Data

Item	Standard Value	Unit
Module Dimension	122.0 x 44.0	mm
Active Area	95.95 x 19.45	mm
Dot Pitch	0.60 x 0.60	mm
Dot Size	0.55 x 0.55	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.75	V

Mechanical Drawing



COB16080-01

Graphic 160x80dots

Part number list

BG16080G□□□□□$

Feature

1.Bulit-in controller T6963C or equivalent
2.Bulit-in oscillation and nagative voltage
3.+5V single power supply
4. 8080 interface
5.(Option) +3V power supply

Pin Assignment

Pin	Symbol	Function
1	VSS	GND.
2	Vdd	Power supply (+5V).
3	V0	Negative Voltage input -6.5 ~ -7.0V.
4	A0	WR=L, C/D=H: Command Write C/D=L: Data write RD=L, C/D=H: Status Read C/D=L: Data read
5	/WR	Data write. Write data into T6963C when WR = L
6	/RD	Data read. Read data from T6963C when RD = L
7	CE	L: Chip enable
8~15	DB0~DB7	Data bus line
16	FS	Pins for selection of font; H: 6 * 8, L: 8 * 8
17	VEE	Negative voltage output
18	RES	H: Normal; L: Initialize T6963.
19	A	Anode pin for backlight.
20	K	Cathode pin for backlight.

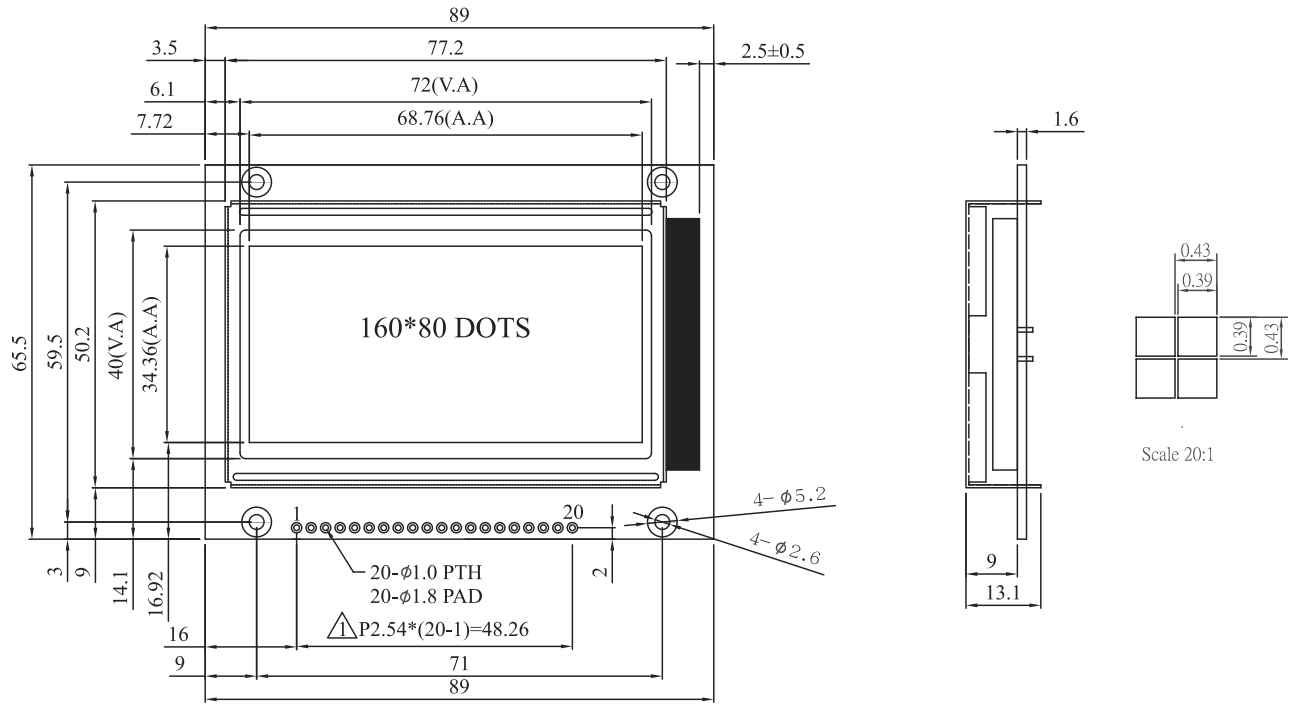
Mechanical Data

Item	Standard Value	Unit
Module Dimension	89.0 x 65.5	mm
Active Area	68.76 x 34.36	mm
Dot Pitch	0.43 x 0.43	mm
Dot Size	0.39 x 0.39	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	11.5	V

Mechanical Drawing



COB16080-02

Graphic 160x80dots

Part number list

BG16080E□□□□□$

Feature

1.Bulit-in controller LC7981 or equivalent
2.Bulit-in oscillation and nagative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin	Symbol	Function
1	Vss	Power Supply (GND)
2	Vdd	Power Supply (+5V)
3	Vo	Contrast adjustment
4	D/I	Instruction/Data input
5	R/W	Data read/write
6	E	Chip Enable
7~14	DB0 ~ DB7	Data bus line
15	/CS	Chip select
16	/DISPOFF	Display off signal
17	/RES	Reset signal
18	Vee	Negative voltage output
19	A	Power supply for BL (+)
20	K	Power supply for BL (GND)

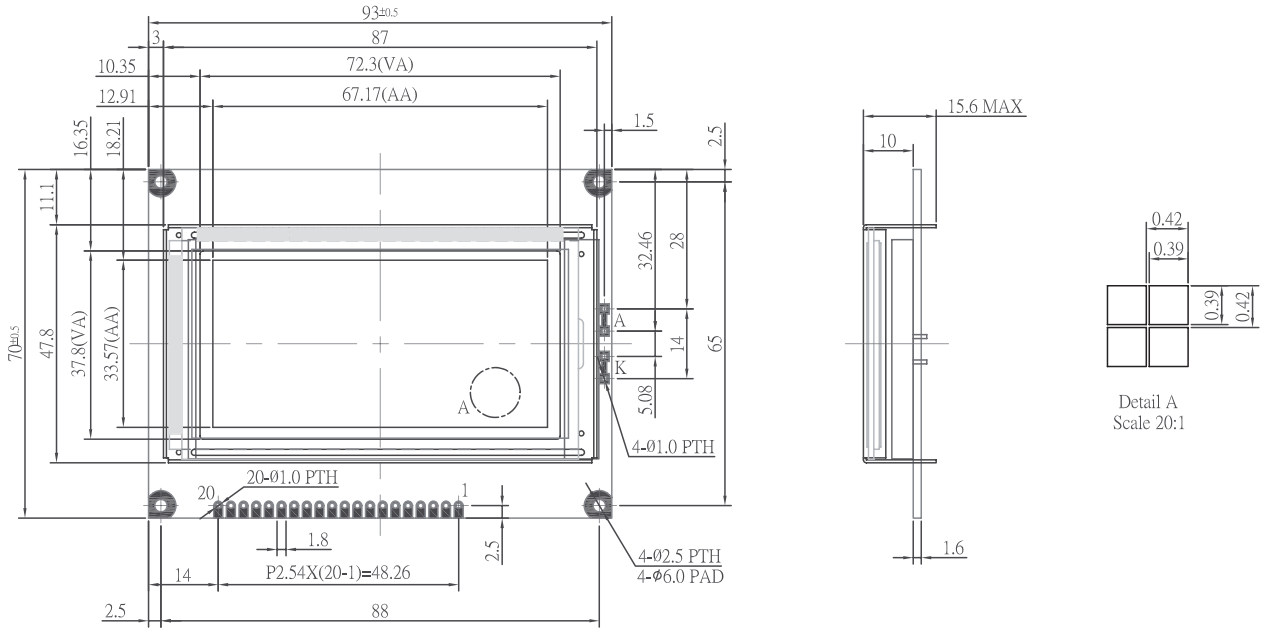
Mechanical Data

Item	Standard Value	Unit
Module Dimension	93.0 x 70.0	mm
Active Area	67.17 x 33.57	mm
Dot Pitch	0.42 x 0.42	mm
Dot Size	0.39 x 0.39	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	13.6	V

Mechanical Drawing



COB16080-03

Graphic 160x80dots

Part number list

WG16080D-□□□-□□#

Feature

1.Bulit-in controller RA6963 or equivalent
2.Bulit-in oscillation and nagative voltage
3.+3.3V / +5V single power supply
4. 8080 interface

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	/WR	Data write. Write data into LCD Controller
5	/RD	Data read. Read data from LCD Controller
6	C/D	Data/ Instruction select signal
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	/CE	Enable signal
16	NC/FS	No connection
17	/RST	Controller reset signal, Active Low
18	V_{EE}	Negative Voltage Output
19	A	Power supply for B/L +
20	K	Power supply for B/L -

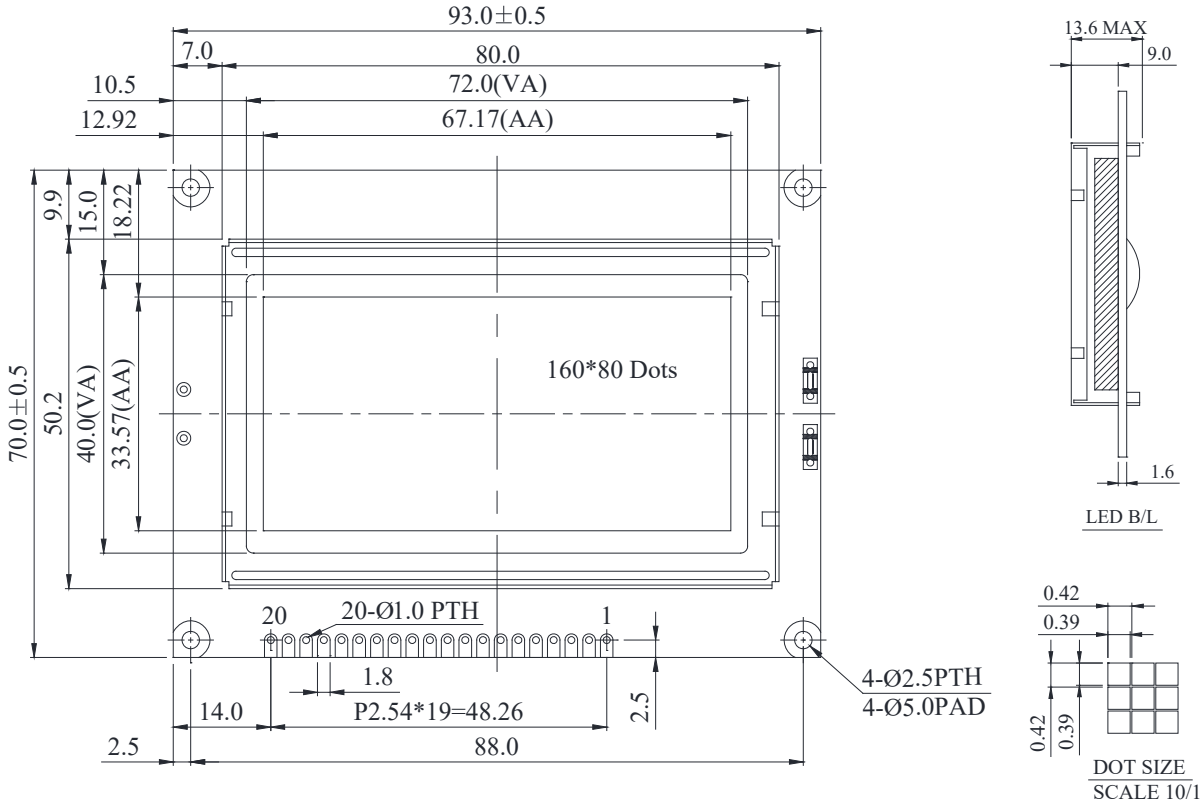
Mechanical Data

Item	Standard Value	Unit
Module Dimension	93.0 x 70.0	mm
Active Area	67.17 x 33.57	mm
Dot Pitch	0.42 x 0.42	mm
Dot Size	0.39 x 0.39	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	13.5	V

Mechanical Drawing



COB16080-04

Graphic 160x80dots

Part number list

WG16080C1-□□□-□□#

BG16080A□□□□□$

Feature

1.Bulit-in controller T6963C or equivalent
2.Bulit-in oscillation and nagative volatage
3.+5V single power supply
4. 8080 interface
5.(Option) +3V power supply

Pin Assignment

Pin	Symbol	Function
1	Vee	Negative voltage output
2	Vss	Power supply (GND)
3	Vdd	Power supply (+5V)
4	Vo	Contrast adjustment
5	/WR	L: data write
6	/RD	L: data read
7	/CE	Chip enable
8	C/D	Command/data read/white
9	/RES	Reset signal
10~17	DB0~7	Data bus line
18	FS	Font selection(H: 6x8, L:8x8)
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

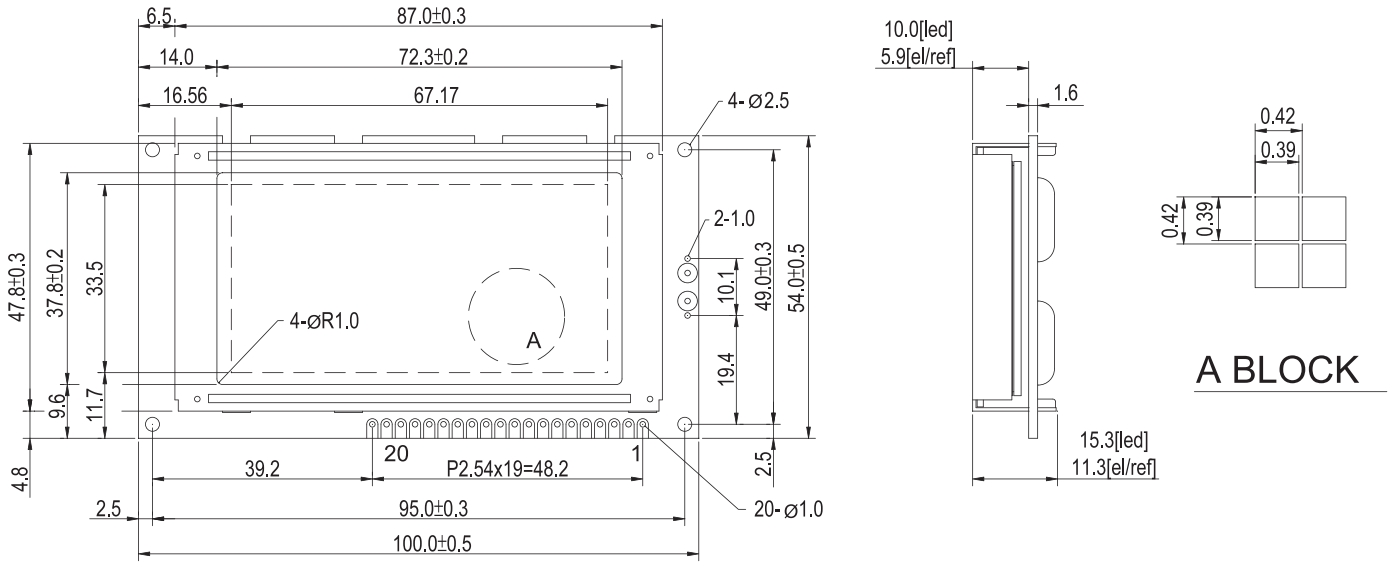
Mechanical Data

Item	Standard Value	Unit
Module Dimension	100.0 x 54.0	mm
Active Area	67.17 x 33.57	mm
Dot Pitch	0.42 x 0.42	mm
Dot Size	0.39 x 0.39	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	13.9	V

Mechanical Drawing



COB16080-05

Graphic 160x80dots

Part number list

BG16080B□□□□□$

Feature

1.Bulit-in controller LC7981 or equivalent
2.Bulit-in oscillation and nagative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin	Symbol	Function
1	Vee	Negative voltage output
2	Vss	Power supply (GND)
3	Vdd	Power supply (+5V)
4	Vo	Contrast adjustment
5	/WR	L: data write
6	/RD	L: data read
7	/CE	Chip enable
8	C/D	Command/data read/white
9	/RES	Reset signal
10~17	DB0~7	Data bus line
18	FS	Font selection(H: 6x8, L:8x8)
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

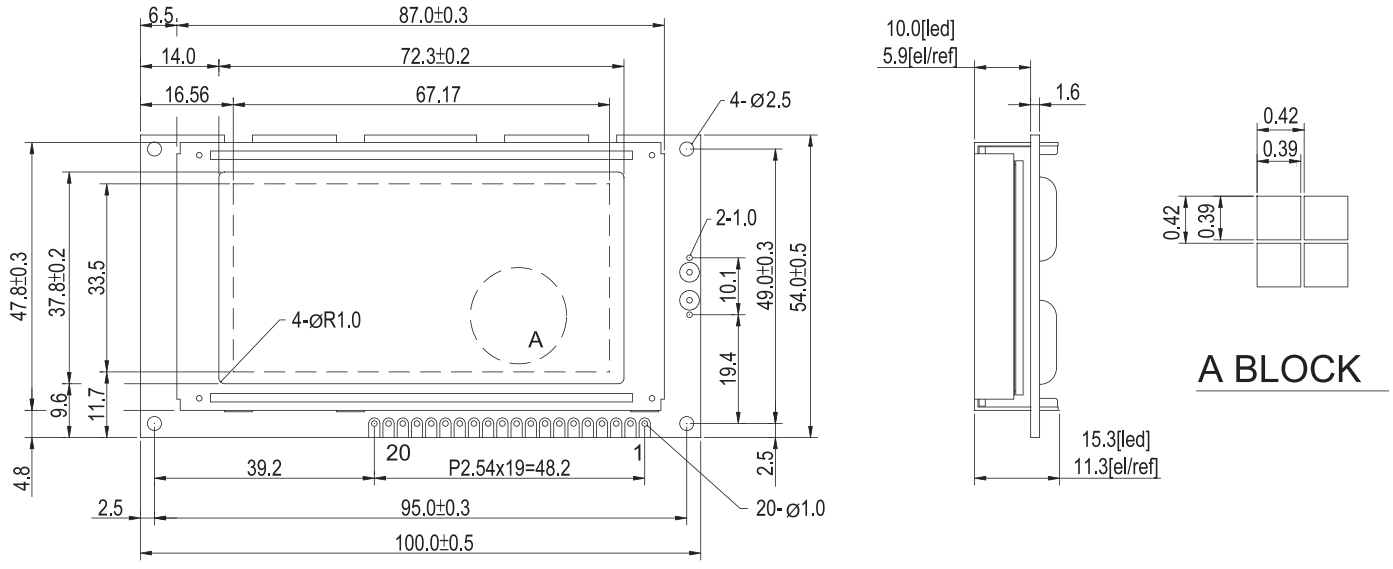
Mechanical Data

Item	Standard Value	Unit
Module Dimension	100.0 x 54.0	mm
Active Area	67.17 x 33.57	mm
Dot Pitch	0.42 x 0.42	mm
Dot Size	0.39 x 0.39	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	14.3	V

Mechanical Drawing



COB16080-06

Graphic 160x80dots

Part number list

SG16080A□□□-□□-□□-□

Feature

1.No bulit-in controller
2.+2.7~+5V single power supply
3.(Option) Built-in negative voltage

Pin Assignment

Pin No.	Symbol	Description
1~4	DB0~3	Data Bus Line
5	/DISPOFF	Display OFF. Active LOW
6	FRM	Frame Start Signal
7	LEDOFF	Power Supply for LED
8	CL1	Common driver Data shift signal
9	CL2	Clock pulse for Segment shift Resister
10	Vdd	Power Supply for Logic
11	Vss	Ground
12	Vee	Power Supply Voltage for LCD
13	Vo	Contrast Adjustment
14	FGND	Frame Ground
15	A	Power supply for B/L +
16	K	Power supply for B/L -

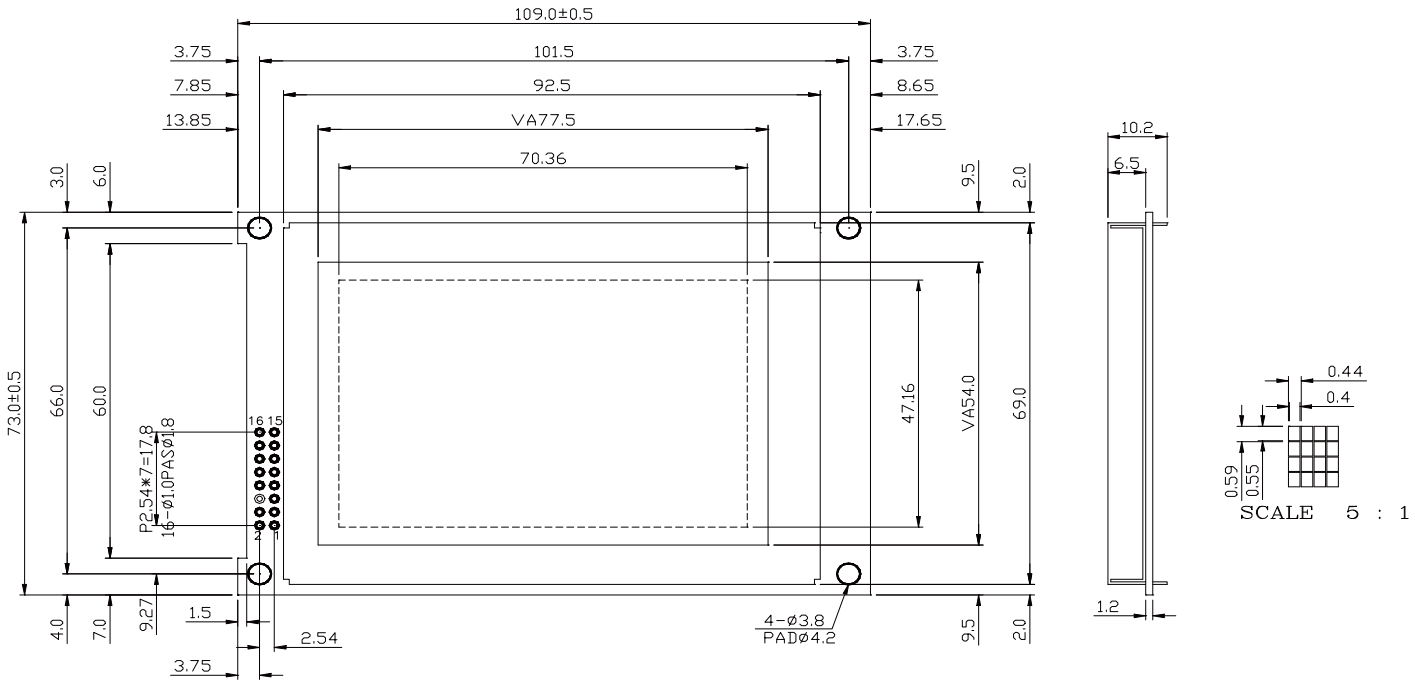
Mechanical Data

Item	Standard Value	Unit
Module Dimension	109.0 x 73.0	mm
Active Area	70.36 x 47.16	mm
Dot Pitch	0.44 x 0.59	mm
Dot Size	0.40 x 0.55	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	12.6	V

Mechanical Drawing



COB160112-01

Graphic 160x112dots

Part number list

BG160112A□□□□□$

Feature

1.Bulit-in controller T6963C or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5.(Option) Bulit-in Nagative voltage

Pin Assignment

Pin	Symbol	Function
1	Vss	Power supply (GND)
2	Vdd	Power supply(+5V)
3	Vo	Contrast adjustment
4	C/D	Command/dat
5	/RD	Data read
6	/WR	Data write
7~14	DB0~7	Data bus line
15	/CE	Chip enable
16	RST	Reset
17	Vee	Negative voltage output (-10.2V)
18	MD2	Column No. select (H:32 columns, L:40 columns)
19	FS	Font selection (H: 6x8, L:8x8)
20	FG	Frame ground

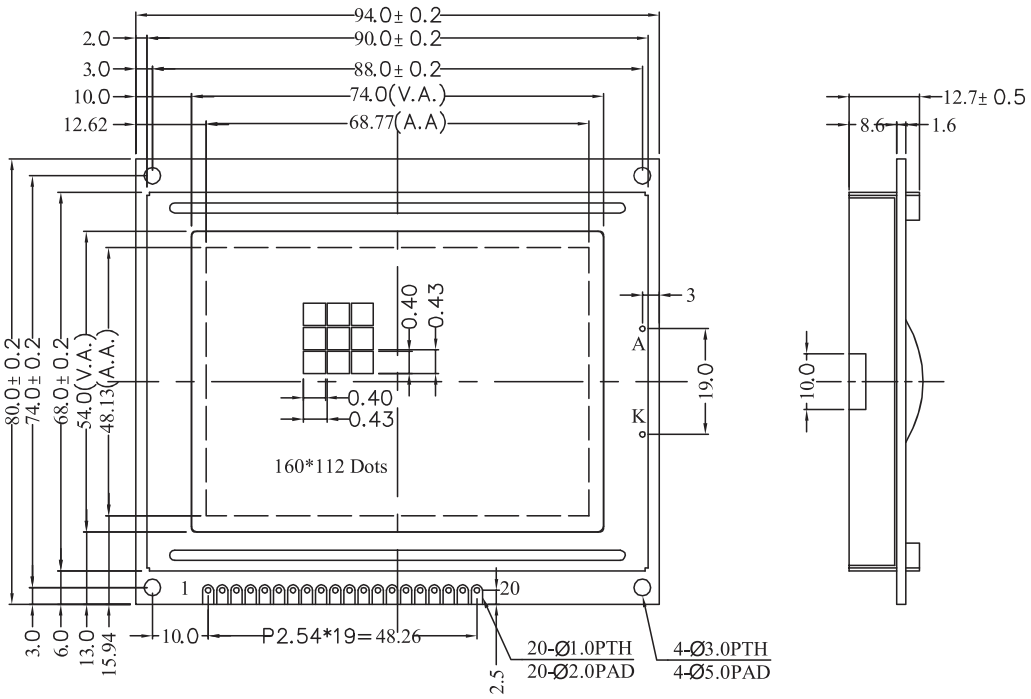
Mechanical Data

Item	Standard Value	Unit
Module Dimension	94.0 x 80.0	mm
Active Area	68.77 x 48.13	mm
Dot Pitch	0.43 x 0.43	mm
Dot Size	0.40 x 0.40	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	8.7	V

Mechanical Drawing



COB160128-01

Graphic 160x128dots

Part number list

BG160128B□□□□□$

SG160128A□□□-□□-□□-□

Feature

1.Bulit-in controller T6963C or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5.(Option) Bulit-in Nagative voltage

Pin Assignment

Pin	Symbol	Function
1	FGND	Frame ground
2	Vss	Logic power supply(GND)
3	Vdd	Logic power supply (+5V)
4	Vadj	Contrast Adjustment
5	Vee	Negative voltage output
6	/WR	Data write
7	/RD	Data read
8	/CE	Chip enable
9	C/D	Command/Data read/write
10	/HALT	Clock halt signal
11	/RST	Reset LCD module signal
12~19	DB0~7	Data bus line
20	A	Power supply for B/L (+)

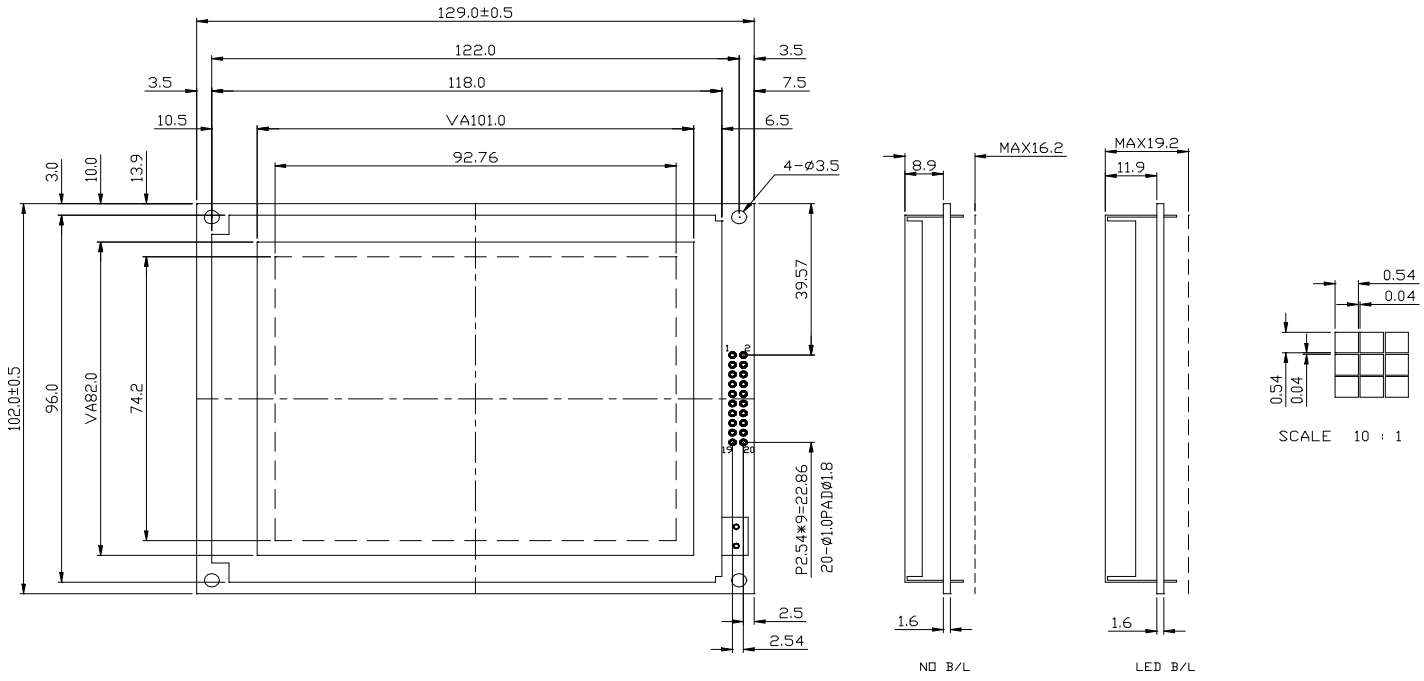
Mechanical Data

Item	Standard Value	Unit
Module Dimension	129.0 x 102.0	mm
Active Area	92.76 x 74.22	mm
Dot Pitch	0.58 x 0.58	mm
Dot Size	0.54 x 0.54	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	18.9	V

Mechanical Drawing



COB160128-02

Graphic 160x128dots

Part number list

WG160128B-□□□-□□#

Feature

1.Bulit-in controller T6963C or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5.(Option) Bulit-in Nagative voltage
6.(Option) +3V single power supply

Pin Assignment

Pin No.	Symbol	Description
1	FG	Frame ground
2	V_{SS}	Ground
3	V_{DD}	Power supply for logic
4	V_O	Contrast Adjustment
5	V_{EE}	Negative Voltage Output
6	/WR	Data write. Write data into LCD Controller
7	/RD	Data read. Read data from LCD Controller
8	/CE	Enable signal
9	C/D	Data/ Instruction select signal
10	/HALT	Clock operating stop signal
11	/RESET	Controller reset signal, Active Low
12	DB0	Data bus line
13	DB1	Data bus line
14	DB2	Data bus line
15	DB3	Data bus line
16	DB4	Data bus line
17	DB5	Data bus line
18	DB6	Data bus line
19	DB7	Data bus line
20	NC	No connection

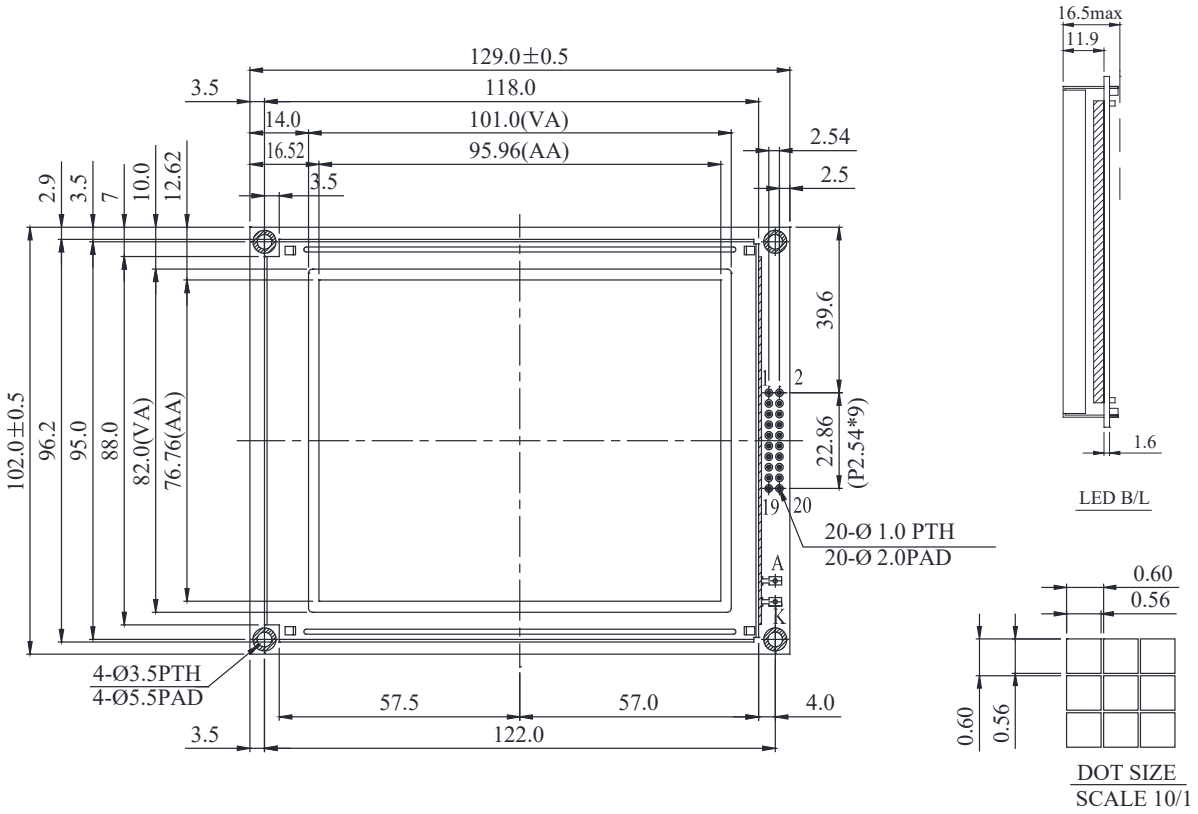
Mechanical Data

Item	Standard Value	Unit
Module Dimension	129.0 x 102.0	mm
Active Area	95.96 x 76.76	mm
Dot Pitch	0.60 x 0.60	mm
Dot Size	0.56 x 0.56	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	19.2	V

Mechanical Drawing



COB160128-03

Graphic 160x128dots

Part number list

WG160128E-□□□-□□#

Feature

1.Bulit-in controller T6963C or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5.FFC Connector
6. 12O'Clock only
7.(Option) Bulit-in Nagative voltage
8.(Option) +3V single power supply

Pin Assignment

Pin No.	Symbol	Description
1	FG	Frame ground
2	V_{SS}	Ground
3	V_{DD}	Power supply for logic
4	V_O	Contrast Adjustment
5	V_{EE}	Negative Voltage Output
6	/WR	Data write. Write data into LCD Controller
7	/RD	Data read. Read data from LCD Controller
8	/CE	Enable signal
9	C/D	Data/ Instruction select signal
10	/HALT	Clock operating stop signal
11	/RESET	Controller reset signal, Active Low
12	DB0	Data bus line
13	DB1	Data bus line
14	DB2	Data bus line
15	DB3	Data bus line
16	DB4	Data bus line
17	DB5	Data bus line
18	DB6	Data bus line
19	DB7	Data bus line
20	NC	No connection

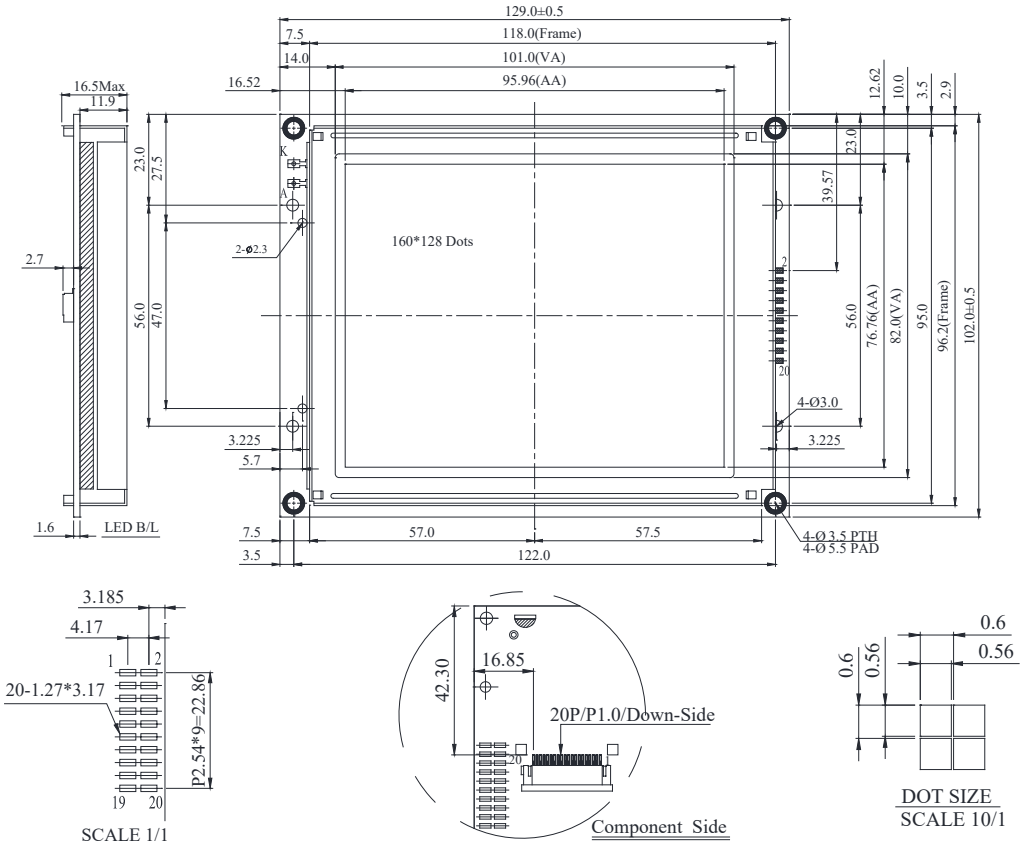
Mechanical Data

Item	Standard Value	Unit
Module Dimension	129.0 x 102.0	mm
Active Area	95.96 x 76.76	mm
Dot Pitch	0.60 x 0.60	mm
Dot Size	0.56 x 0.56	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	19.2	V

Mechanical Drawing



COB160128-04

Graphic 160x128dots

Part number list

BG160128A□□□□□$

Feature

1.Bulit-in controller T6963C or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5.Pin header
6.(Option) Bulit-in Nagative voltage

Pin Assignment

Pin	Symbol	Function
1	FGND	Frame ground
2	Vss	Logic power supply(GND)
3	Vdd	Logic power supply (+5V)
4	Vadj	Contrast Adjustment
5	Vee	Negative voltage output (-16V)
6	/WR	Data write
7	/RD	Data read
8	/CE	Chip enable
9	C/D	Command/Data read/write
10	/HALT	Clock halt signal
11	/RST	Reset LCD module signal
12~19	DB0~7	Data bus line
20	NC	No connection

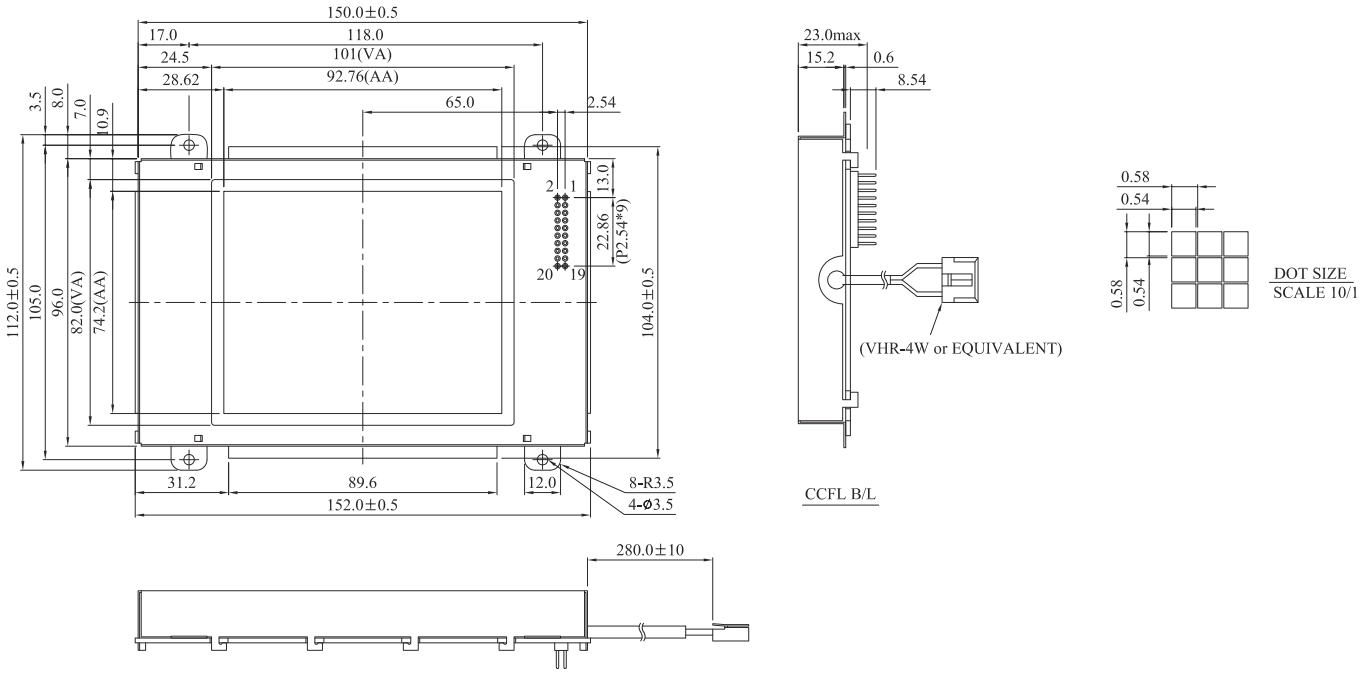
Mechanical Data

Item	Standard Value	Unit
Module Dimension	150.0 x 112.0	mm
Active Area	92.76 x 74.22	mm
Dot Pitch	0.58 x 0.58	mm
Dot Size	0.54 x 0.54	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	19.5	V

Mechanical Drawing



COB160128-05

Graphic 160x128dots

Part number list

WG160128C-□□□-□□#

Feature

1.Bulit-in controller T6963C or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5.Pin header
6.(Option) Bulit-in Nagative voltage
7.(Option) +3V single power supply

Pin Assignment

Pin No.	Symbol	Description
1	FG	Frame ground
2	Vss	Ground
3	Vdd	Power supply for logic
4	Vo	Contrast Adjustment
5	Vee	Negative Voltage Output
6	/WR	Data write. Write data into LCD Controller
7	/RD	Data read. Read data from LCD Controller
8	/CE	Enable signal
9	C/D	Data/ Instruction select signal
10	/HALT	Clock operating stop signal
11	/RESET	Controller reset signal, Active Low
12	DB0	Data bus line
13	DB1	Data bus line
14	DB2	Data bus line
15	DB3	Data bus line
16	DB4	Data bus line
17	DB5	Data bus line
18	DB6	Data bus line
19	DB7	Data bus line
20	NC	No connection

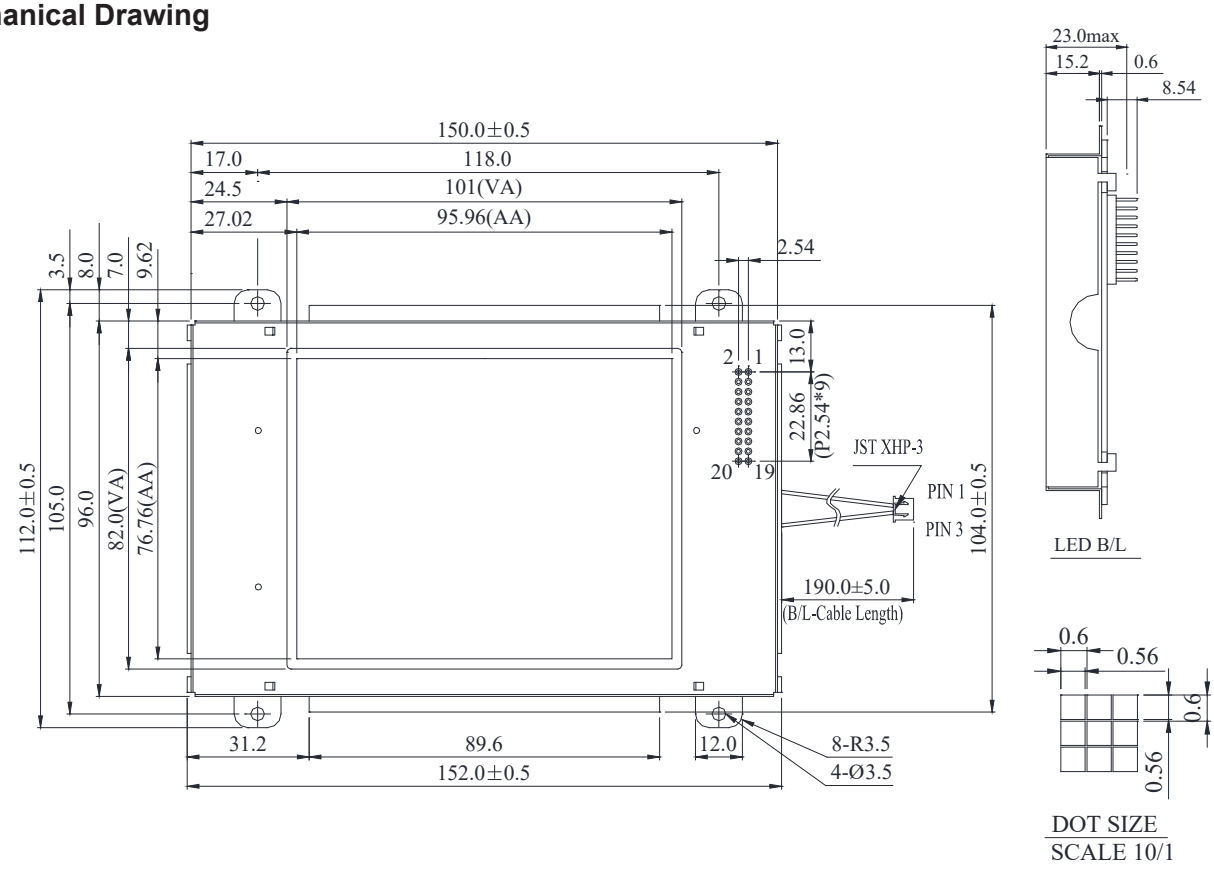
Mechanical Data

Item	Standard Value	Unit
Module Dimension	150.0 x 112.0	mm
Active Area	95.96 x 76.76	mm
Dot Pitch	0.60 x 0.60	mm
Dot Size	0.56 x 0.56	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	19.0	V

Mechanical Drawing



COB160160-01

Graphic 160x160dots

Part number list

SG160160D□□□-□□-□□-□

Feature

1.Bulit-in controller LC7981 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.(Option) Bulit-in Nagative voltage

Pin Assignment

Pin No.	Symbol	Description
1	FGND	Frame Ground
2	Vss	Ground
3	Vdd	Power Supply for Logic
4	Vo	Contrast Adjustment
5	R/W	Read/Write
6	E	Enable Signal
7	/CS	Chip Select Signal
8	RS	Resister Select
9	/RES	Reset Signal
10~17	DB0~7	Data Bus Line
18	Vee	Power Supply Voltage for LCD
19	A	Power supply for B/L +
20	K	Power supply for B/L -

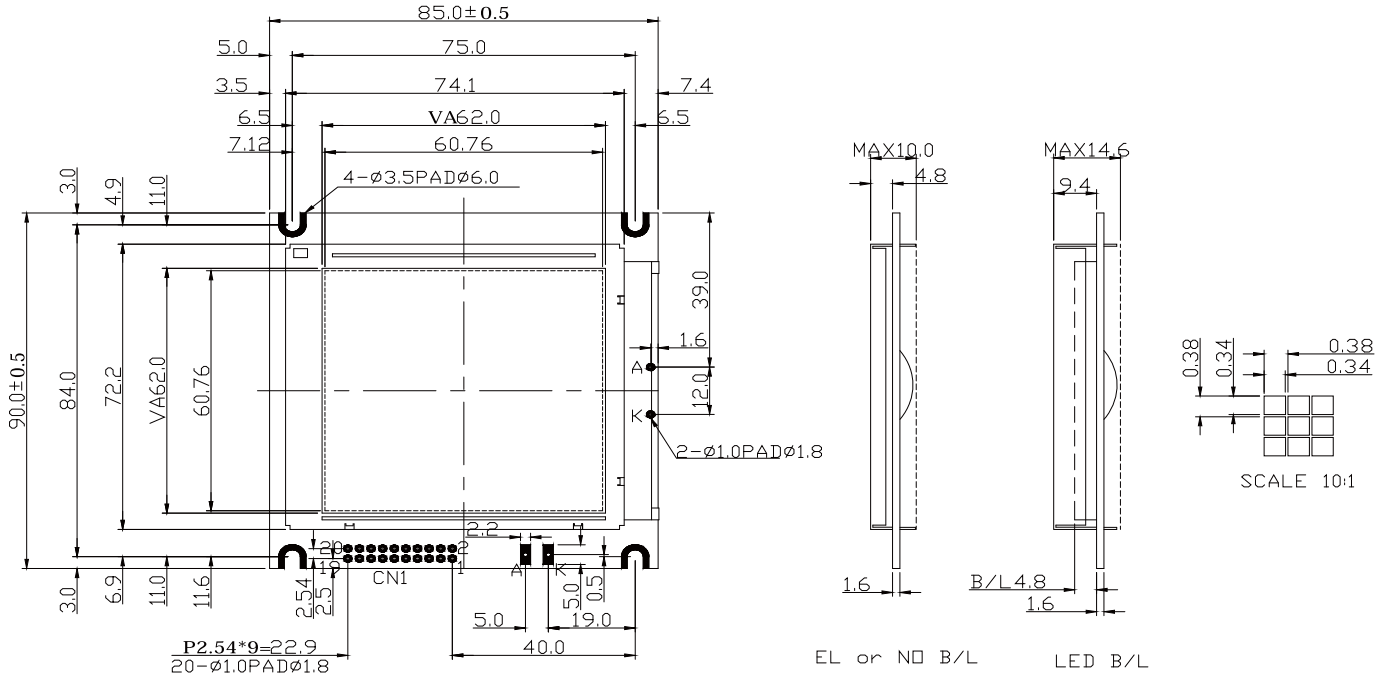
Mechanical Data

Item	Standard Value	Unit
Module Dimension	85.0 x 90.0	mm
Active Area	60.76 x 60.76	mm
Dot Pitch	0.38 x 0.38	mm
Dot Size	0.34 x 0.34	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	18.0	V

Mechanical Drawing



COB160160-02

Graphic 160x160dots

Part number list

WG160160D5□□□-□□#

Pin Assignment

Pin No.	Symbol	Description
1	FGND	Frame ground
2	VSS	Ground
3	Vdd	Power supply for logic
4	Vo	Contrast Adjustment
5	R/W	Read/Write select signal
6	E	Enable signal
7	/CS	Chip select input pins
8	RS	Data/ Instruction select signal
9	BUSY	Check Busy
10	/RST	Controller reset signal, Active Low
11	DB0	Data bus line
12	DB1	Data bus line
13	DB2	Data bus line
14	DB3	Data bus line
15	DB4	Data bus line
16	DB5	Data bus line
17	DB6	Data bus line
18	DB7	Data bus line
19	NC	No connection
20	Vee	Negative Voltage Output

Feature

1.Bulit-in controller RA8822 or equivalent
2.Bulit-in oscillation and nagative voltage
3.+5V single power supply
4. 6800 / 8080 interface

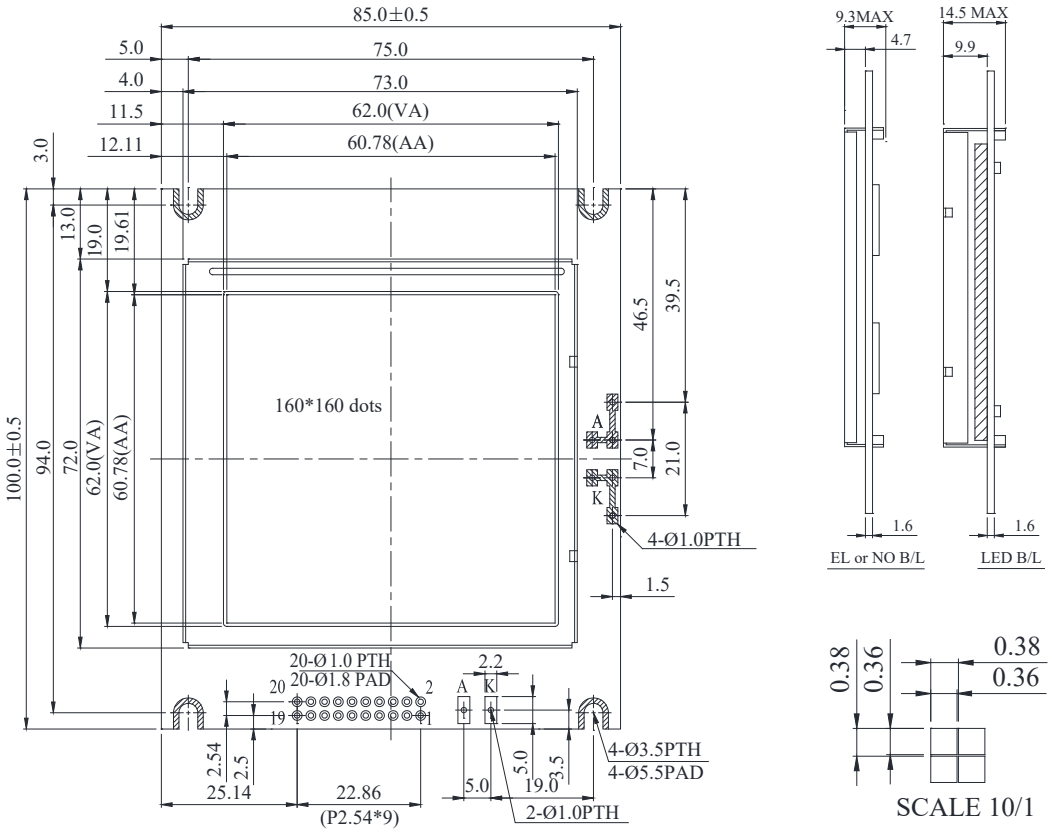
Mechanical Data

Item	Standard Value	Unit
Module Dimension	85.0 x 100.0	mm
Active Area	60.78 x 60.78	mm
Dot Pitch	0.38 x 0.38	mm
Dot Size	0.36 x 0.36	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	18.0	V

Mechanical Drawing



COB160160-03

Graphic 160x160dots

Part number list

SG160160B□□□-□□-□□-□

Feature

1.Bulit-in controller RA8835 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5.(Option) Bulit-in Nagative voltage

Pin Assignment

Pin No.	Symbol	Description
1	Vss	Ground
2	Vdd	Power Supply for Logic
3	Vo	Contrast Adjustment
4	/RD	Read Signal
5	/WR	Write Signal
6	/CS	Chip Select Signal
7	Ao	Data Type Select
8~15	DB0~7	Data Bus Line
16	/RES	Reset Signal
17	Vee	Power Supply Voltage for LCD
18	A	Power supply for B/L +
19	K	Power supply for B/L -
20	NC	No Connection

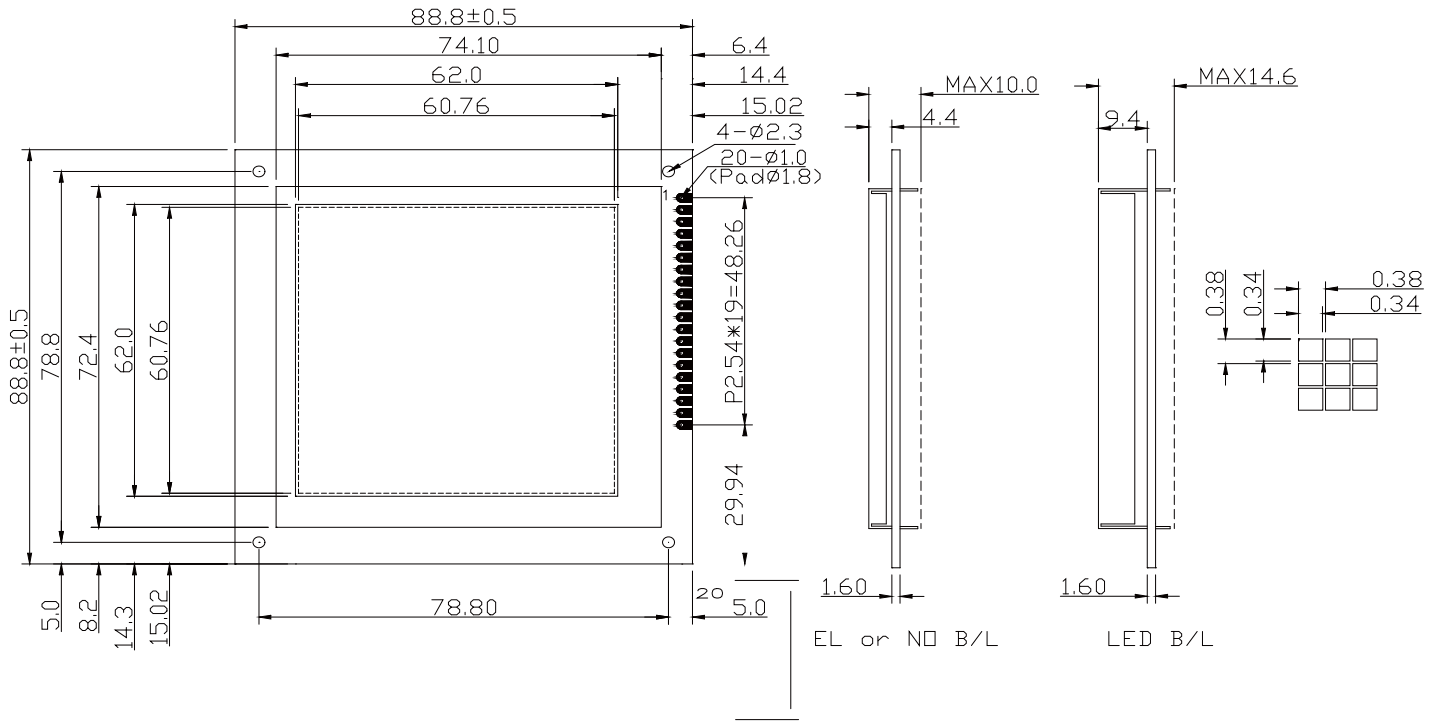
Mechanical Data

Item	Standard Value	Unit
Module Dimension	88.8 x 88.8	mm
Active Area	60.76 x 60.76	mm
Dot Pitch	0.38 x 0.38	mm
Dot Size	0.34 x 0.34	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	18.0	V

Mechanical Drawing



COB160160-04

Graphic 160x160dots

Part number list

WG160160A-□□□-□□#
BG160160A□□□□□$
SG160160C□□□-□□-□□-□

Feature

1.No bulit-in controller
2.+3V /+5V single power supply
3.Built-in negative voltage

Pin Assignment

Pin	Symbol	Function
1	Vss	Power supply (GND)
2	M	Control signal for AC driving
3	FLM	Signal for each display cycle
4	CL1	Display data latch
5	CL2	Display data shift
6~9	DB3-0	Data bus line
10	Vee	Negative voltage output
11	Vdd	Power supply
12	Vo	Contrast adjustment
13	/DISPOFF	L: display off
14	A	Power supply for B/L (+)
15	K	Power supply for B/L (GND)

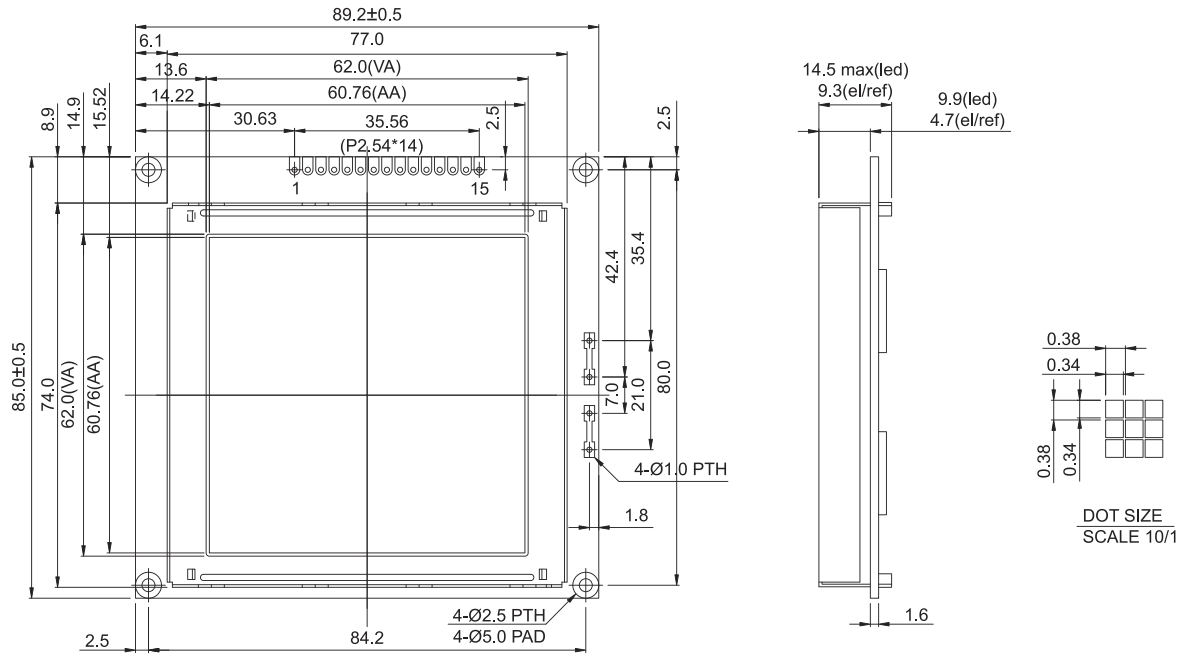
Mechanical Data

Item	Standard Value	Unit
Module Dimension	89.2 x 85.0	mm
Active Area	60.76 x 60.76	mm
Dot Pitch	0.38 x 0.38	mm
Dot Size	0.34 x 0.34	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	19.0	V

Mechanical Drawing



COB160160-05

Graphic 160x160dots

Part number list

BG160160C□□□□□$

Feature

1.Built-in controller LC7981 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.(Option) Built-in Negative voltage
6.(Option) FFC connector

Pin Assignment

Pin	Symbol	Function
1	FGND	Frame ground
2	Vss	Power supply (GND)
3	Vdd	Power supply (+5V)
4	Vo	Contrast adjustment
5	R/W	Data read/write
6	E	Enable singal
7	/CS	Chip select
8	RS	Data instruction select
9	Vee	Negative Voltage output(-15V)
10	/RST	Reaet signal
11~18	DB0-7	Data bus line
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

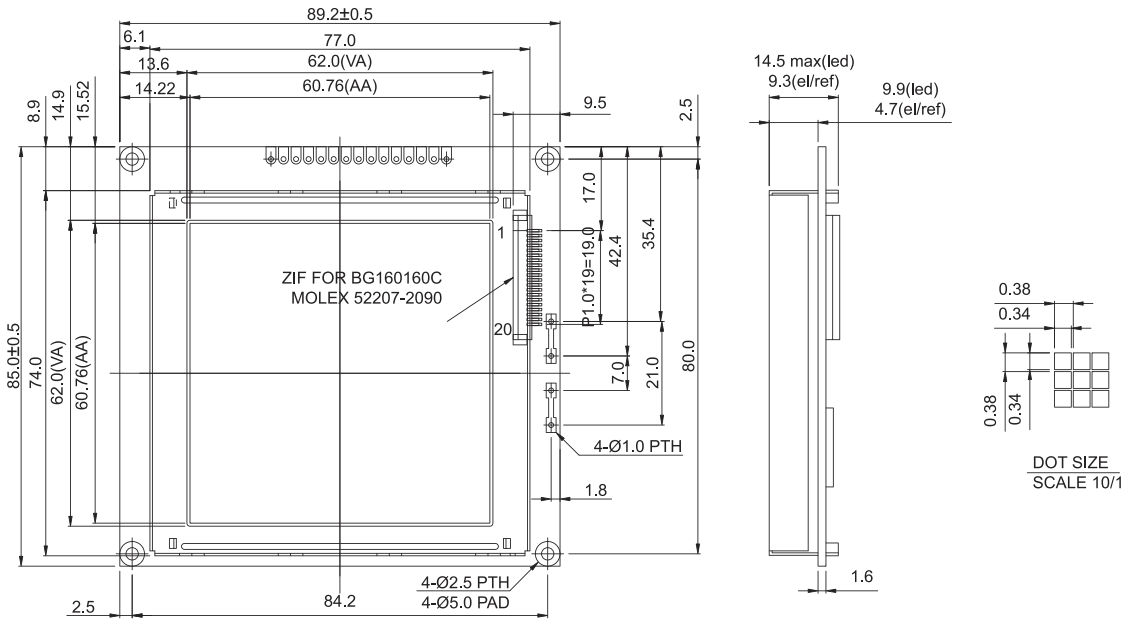
Mechanical Data

Item	Standard Value	Unit
Module Dimension	89.2 x 85.0	mm
Active Area	60.76 x 60.76	mm
Dot Pitch	0.38 x 0.38	mm
Dot Size	0.34 x 0.34	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	19.0	V

Mechanical Drawing



COG160160-01

Graphic 160x160dots

Part number list

WO160160B-□□□-□□#

Feature

1.Bulit-in controller UC1698U
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4. 6800 / 8080 interface

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	A0	Data/ Instruction select signal
3	WR	Data write. Write data into LCD Controller
4	RD	Data read. Read data from LCD Controller
5	XCS	Chip select input pins
6	RST	Controller reset signal, Active Low
7	V_{DD}	Power supply for logic
8	DB0	Data bus line
9	DB1	Data bus line
10	DB2	Data bus line
11	DB3	Data bus line
12	DB4	Data bus line
13	DB5	Data bus line
14	DB6	Data bus line
15	DB7	Data bus line
16	LED-	Power supply for B/L -
17	NC	No connection
18	LED+	Power supply for B/L +

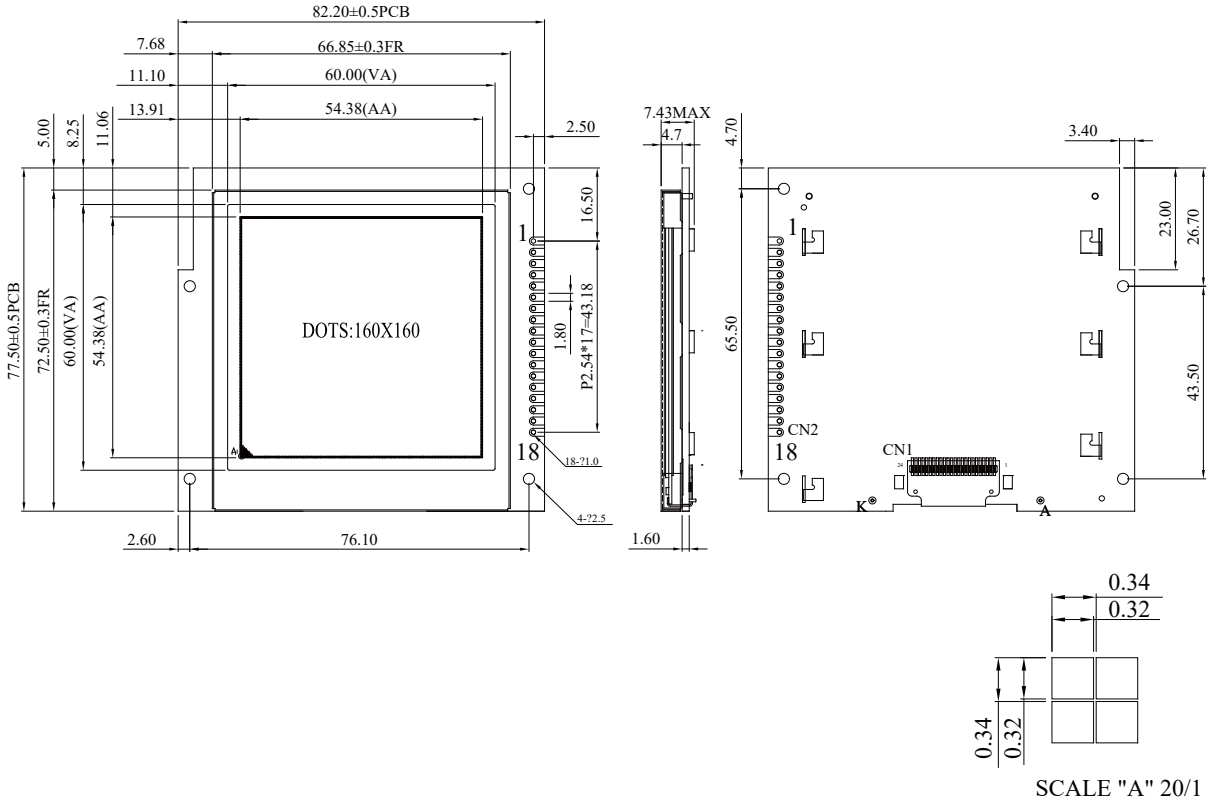
Mechanical Data

Item	Standard Value	Unit
Module Dimension	82.2 x 77.5	mm
Active Area	54.38 x 54.38	mm
Dot Pitch	0.34 x 0.34	mm
Dot Size	0.32 x 0.32	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	16.5	V

Mechanical Drawing



COG160160-02

Graphic 160x160dots

Part number list

WO160160A-□□□-□□#

Feature

1.Bulit-in controller UC1698U
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4. 6800 / 8080 interface

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	A0	Data/ Instruction select signal
3	WR	Data write. Write data into LCD Controller
4	RD	Data read. Read data from LCD Controller
5	XCS	Chip select input pins
6	RST	Controller reset signal, Active Low
7	V_{DD}	Power supply for logic
8	DB0	Data bus line
9	DB1	Data bus line
10	DB2	Data bus line
11	DB3	Data bus line
12	DB4	Data bus line
13	DB5	Data bus line
14	DB6	Data bus line
15	DB7	Data bus line
16	LED-	Power supply for B/L -
17	NC	No connection
18	LED+	Power supply for B/L +

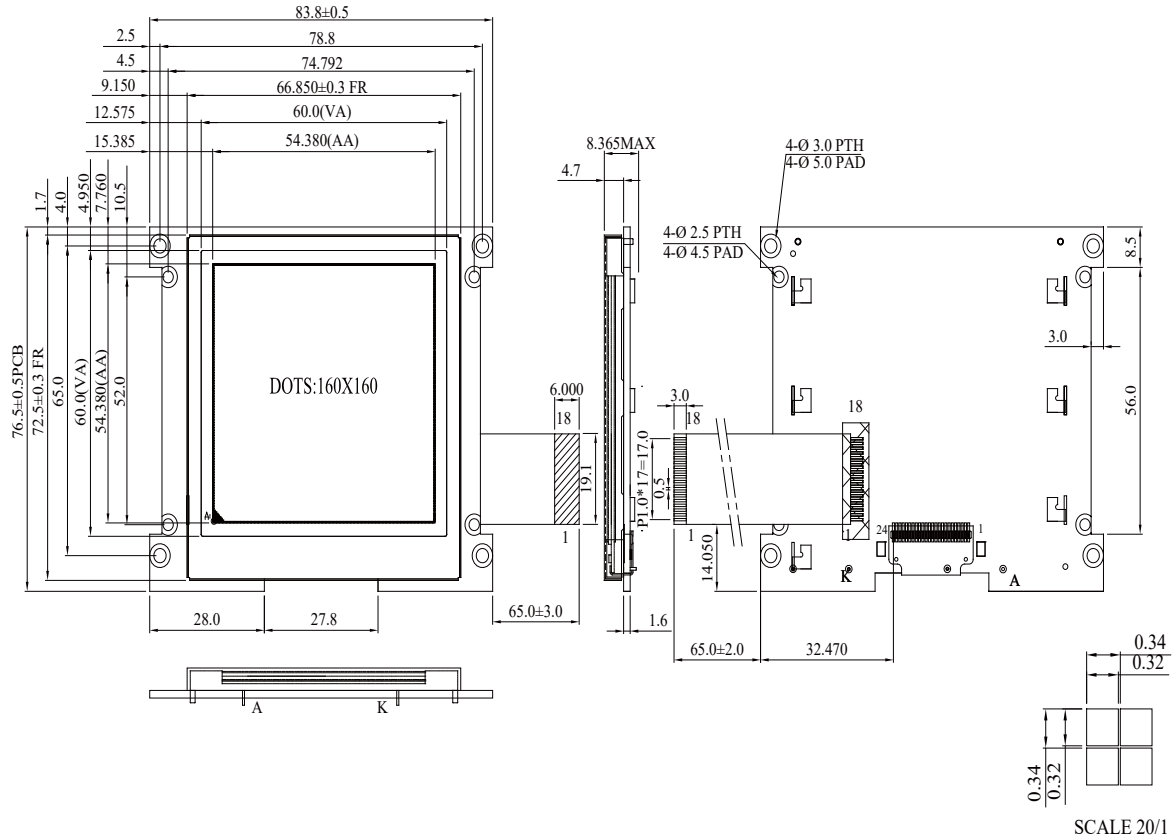
Mechanical Data

Item	Standard Value	Unit
Module Dimension	83.8 x 76.5	mm
Active Area	54.38 x 54.38	mm
Dot Pitch	0.34 x 0.34	mm
Dot Size	0.32 x 0.32	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	Vo-Vss	16.5	V

Mechanical Drawing



COB19232-01

Graphic 192x32dots

Part number list

BG19232A□□□□□$
WG19232B-□□□-□□#
SG19232C□□□-□□-□□-□

Feature

1.Bulit-in controller ST7920
2.Bulit-in oscillation
3.+5V single power supply
4.6800 / SPI interface
5.Built-in Chinese font
6.(Option) +3V power supply with negative voltage

Pin Assignment

Pin	Symbol	Function
1	Vss	GND
2	Vdd	+5V (+3.3V option)
3	Vo	Contrast adjustment
4	RS	H/L register select signal
5	R/W	read/write signal
6	E	H-->L enable singal
7~14	DB0~7	H/L bus line
15	A/Vee	Power supply for B/L (+)/ Positive voltage output
16	K	Power supply for B/L (GND)

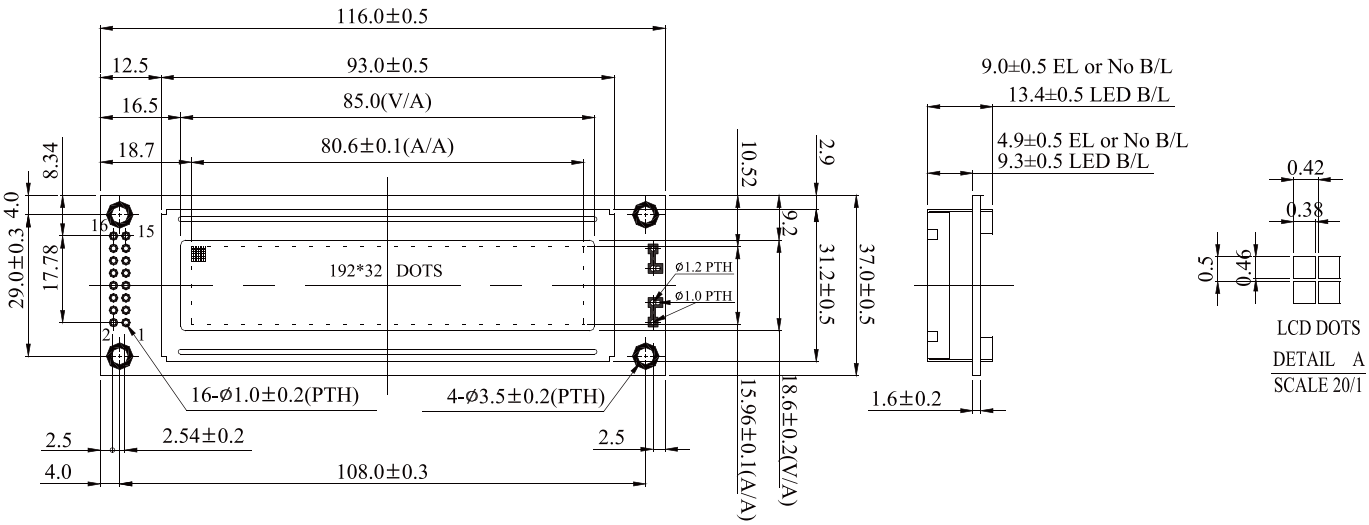
Mechanical Data

Item	Standard Value	Unit
Module Dimension	116.0 x 37.0	mm
Active Area	80.60 x 15.96	mm
Dot Pitch	0.42 x 0.50	mm
Dot Size	0.38 x 0.46	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.6	V

Mechanical Drawing



COB19232-02

Graphic 192x32dots

Part number list

SG19232B□□□-□□-□□-□

Feature

1.Bulit-in controller SED1520 or equivalent
2.No bulit-in oscillation (Need external clock)
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin No.	Symbol	Description
1	Vss	Ground
2	Vdd	Power Supply for Logic
3	Vo	Contrast Adjustment
4	Ao	Data Type Select Signal
5	R/W	Read/Write
6	E	Enable Signal
7~14	DB0~7	Data Bus Line
15	A	Power supply for B/L +
16	K	Power supply for B/L -
17	CS1	Chip Select Signal for IC1
18	CS2	Chip Select Signal for IC2
19	CS3	Chip Select Signal for IC3
20	CL	Clock Input 2KHz

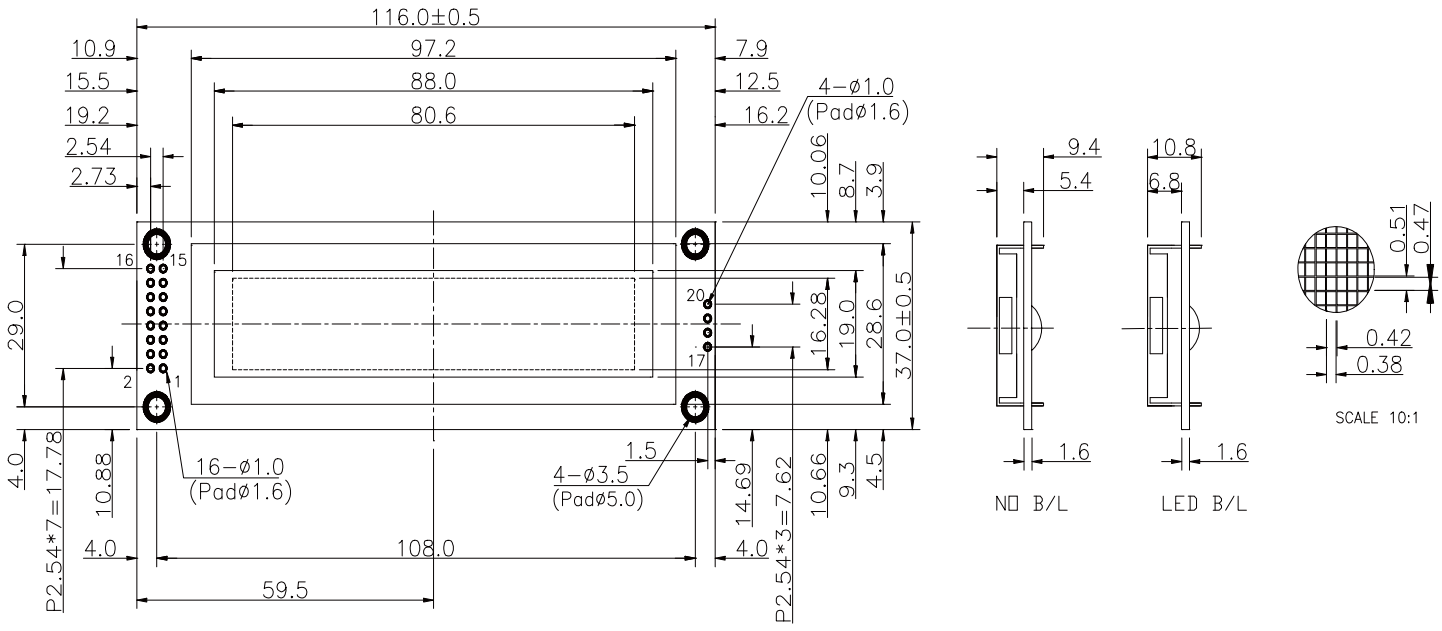
Mechanical Data

Item	Standard Value	Unit
Module Dimension	116.0 x 37.0	mm
Active Area	80.60 x 16.28	mm
Dot Pitch	0.42 x 0.51	mm
Dot Size	0.38 x 0.47	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	4.8	V

Mechanical Drawing



COB19264-01

Graphic 192x64dots

Part number list

BG19264A□□□□□$

Feature

1.Bulit-in controller NT7108 or equivalent
2.Bulit-in oscillation and nagative voltage
3.+5V single power supply
4. 6800 interface
5.(Option) +3V power supply

Pin Assignment

Pin	Symbol	Function
1	/CSA	Chip select A:
2	/CSB	Chip select B:
3	Vss	Ground
4	Vdd	Power supply for logic (+5V)
5	Vo	Power supply for LCD driver
6	D/I	Data or instruction select input
7	R/W	Read/Write control signal input pin
8	E	Chip Enable
9~16	DB0~DB7	Data input / output
17	RST	Reset
18	Vee	Negative voltage output
19	LED(+)	Anode of backlight
20	LED(-)	Cathode of backlight

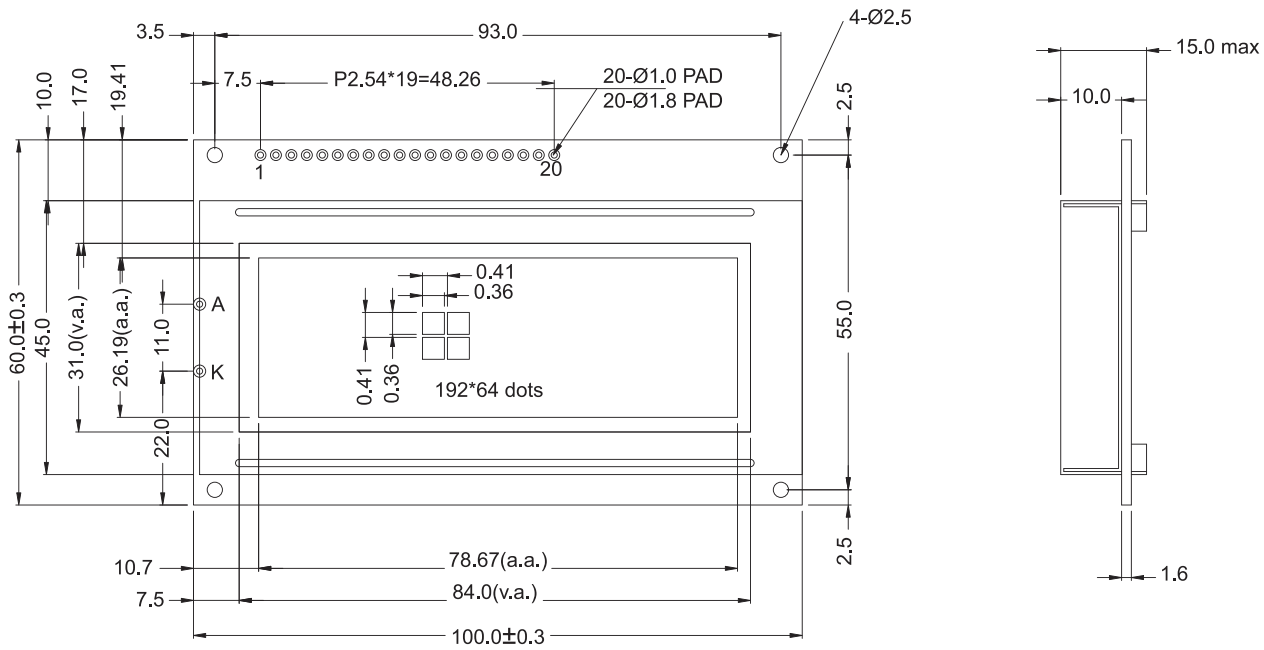
Mechanical Data

Item	Standard Value	Unit
Module Dimension	100.0 x 60.0	mm
Active Area	78.67 x 26.19	mm
Dot Pitch	0.41 x 0.41	mm
Dot Size	0.36 x 0.36	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	8.6	V

Mechanical Drawing



COB19264-02

Graphic 192x64dots

Part number list

WG19264D-□□□-□□#

Feature

1.Bulit-in controller NT7108 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.(Option) Bulit-in Nagative voltage

Pin Assignment

Pin No.	Symbol	Description
1	VSS	Ground
2	VDD	Power supply for logic
3	NC	No connection
4	Vee	Negative Voltage Output
5	RS	Data/ Instruction select signal
6	R/W	Read/Write select signal
7	E	Enable signal
8	DB0	Data bus line
9	DB1	Data bus line
10	DB2	Data bus line
11	DB3	Data bus line
12	DB4	Data bus line
13	DB5	Data bus line
14	DB6	Data bus line
15	DB7	Data bus line
16	/CS1	Chip select IC1 (Column 1 ~ 64)
17	/CS2	Chip select IC2 (Column 65 ~ 128)
18	/CS3	Chip select IC3 (Column 128 ~ 192)
19	/RST	Controller reset signal, Active Low
20	A	Power supply for B/L +
21	K	Power supply for B/L -

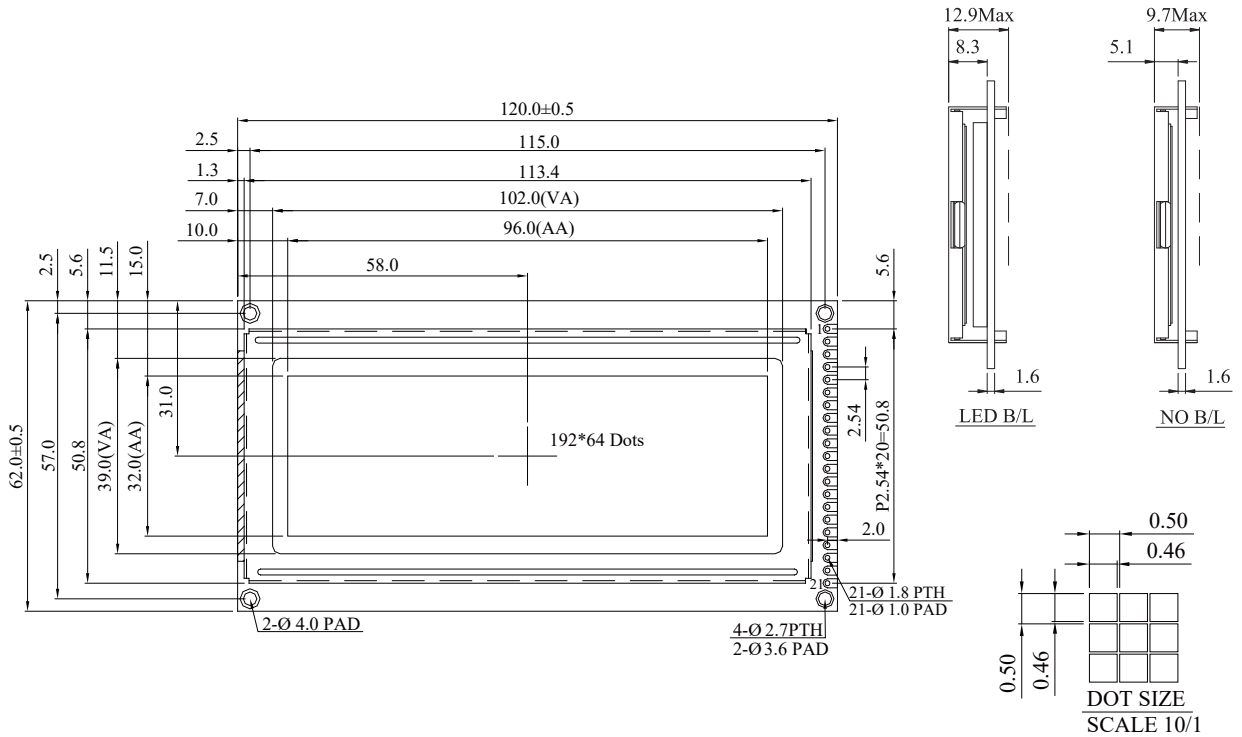
Mechanical Data

Item	Standard Value	Unit
Module Dimension	120.0 x 62.0	mm
Active Area	95.96 x 31.96	mm
Dot Pitch	0.50 x 0.50	mm
Dot Size	0.46 x 0.46	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	8.55	V

Mechanical Drawing



COB19264-03

Graphic 192x64dots

Part number list

WG19264A-□□□-□□#

Feature

1.Bulit-in controller NT7108 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.(Option) Bulit-in Nagative voltage

Pin Assignment

Pin No.	Symbol	Description
1	VSS	Ground
2	VDD	Power supply for logic
3	VO	Contrast Adjustment
4	RS	Data/ Instruction select signal
5	R/W	Read/Write select signal
6	E	Enable signal
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	CS1	Chip select IC1 (Column 1 ~ 64)
16	RES	Controller reset signal, Active Low
17	CS2	Chip select IC2 (Column 65 ~ 128)
18	CS3	Chip select IC3 (Column 128 ~ 192)
19	Vee	Negative Voltage Output
20	A	Power supply for B/L +

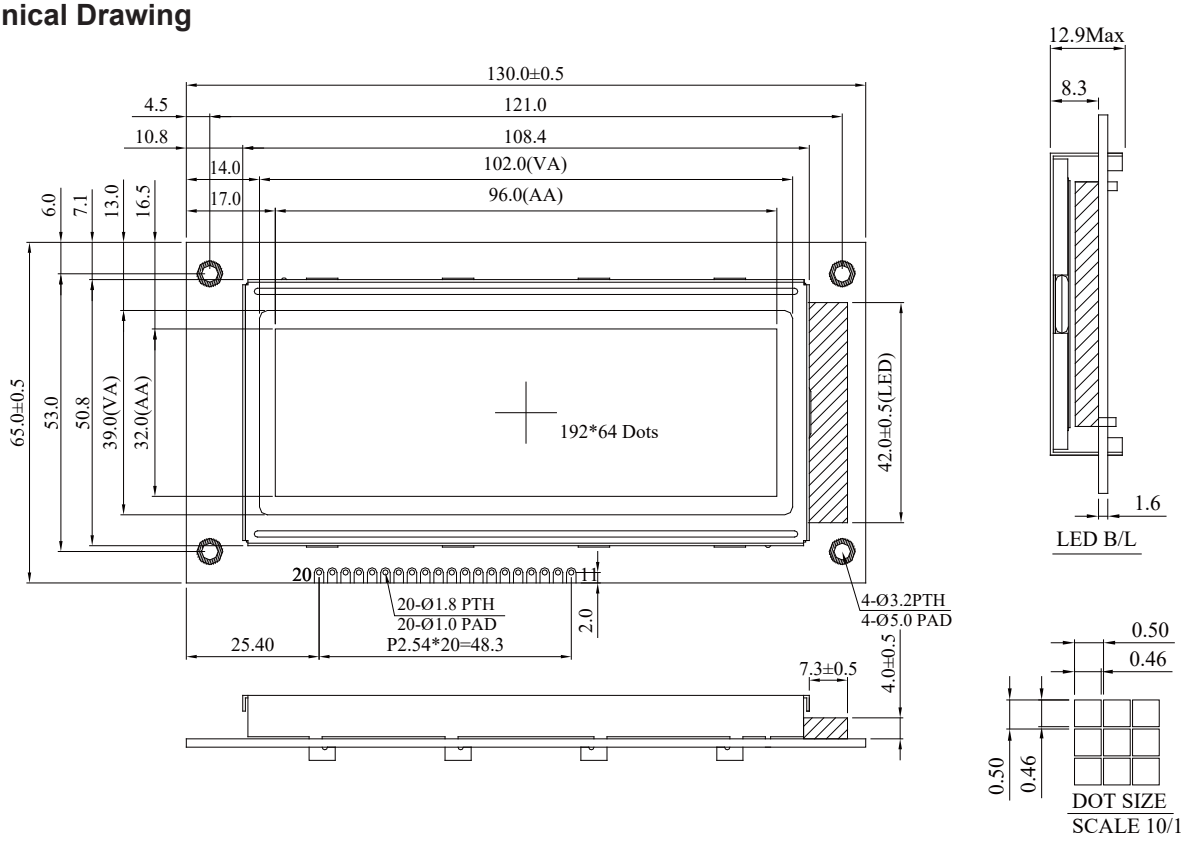
Mechanical Data

Item	Standard Value	Unit
Module Dimension	130.0 x 65.0	mm
Active Area	95.96 x 31.96	mm
Dot Pitch	0.50 x 0.50	mm
Dot Size	0.46 x 0.46	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	8.0	V

Mechanical Drawing



COB19264-04

Graphic 192x64dots

Part number list

WG19264E-□□□-□□#

Feature

1.Bulit-in controller NT7108 or equivalent
2.Bulit-in oscillation and nagative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin No.	Symbol	Description
1	VSS	Ground
2	VDD	Power supply for logic
3	VO	Contrast Adjustment
4	RS	Data/ Instruction select signal
5	R/W	Read/Write select signal
6	E	Enable signal
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	/CS1	Chip select IC1 (Column 1 ~ 64)
16	/RST	Controller reset signal, Active Low
17	/CS2	Chip select IC2 (Column 65 ~ 128)
18	/CS3	Chip select IC3 (Column 128 ~ 192)
19	VEE	Negative Voltage Output
20	A	Power supply for B/L +

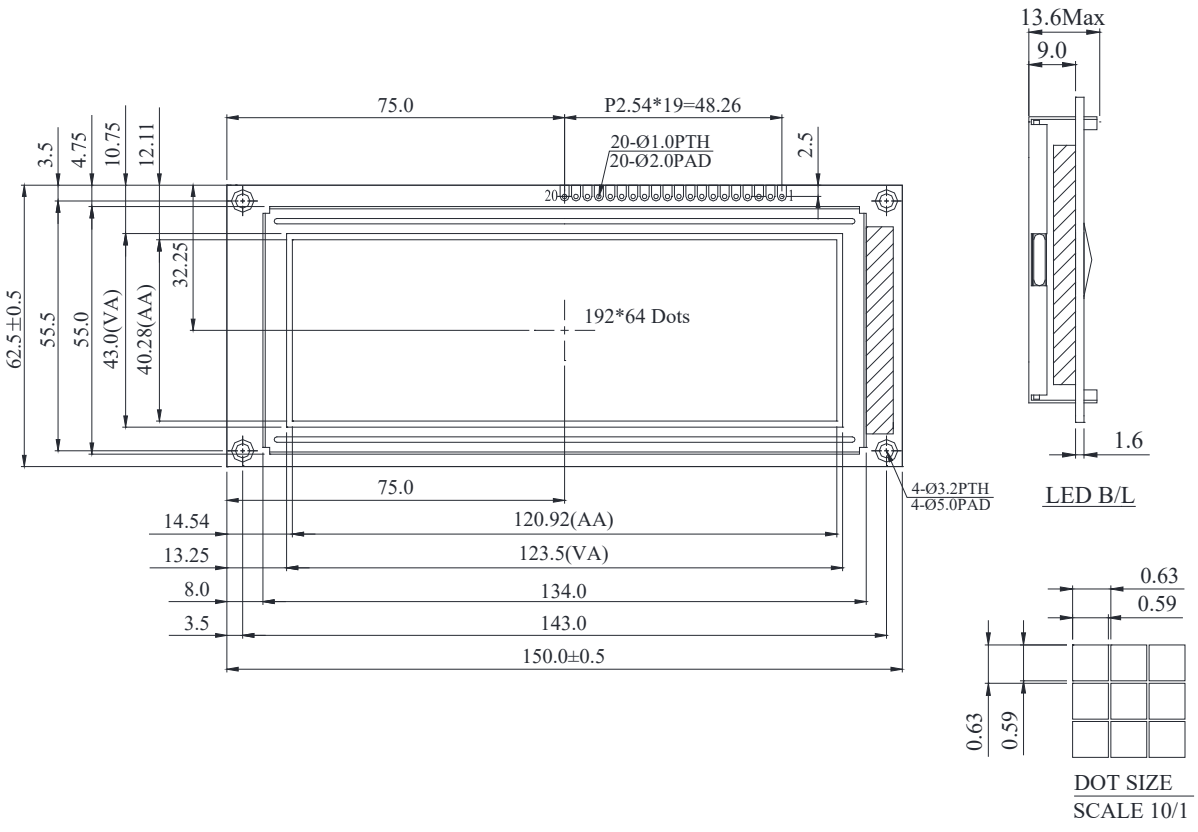
Mechanical Data

Item	Standard Value	Unit
Module Dimension	150.0 x 62.5	mm
Active Area	120.92 x 40.28	mm
Dot Pitch	0.63 x 0.63	mm
Dot Size	0.59 x 0.59	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	12.4	V

Mechanical Drawing



COB192128-01

Graphic 192x128dots

Part number list

WG192128D-□□□-□□#

Feature

1.Bulit-in controller RA6963 or equivalent
2.Bulit-in oscillation and nagative voltage
3.+5V single power supply
4. 8080 interface

Pin Assignment

Pin No.	Symbol	Description
1	Vss	Ground
2	Vdd	Power supply for logic
3	Vo	Contrast Adjustment
4	C/D	Data/ Instruction select signal
5	/RD	Data read. Read data from LCD Controller
6	/WR	Data write. Write data into LCD Controller
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	/CE	Enable signal
16	/RST	Controller reset signal, Active Low
17	Vee	Negative Voltage Output
18	NC	No connection
19	A	Power supply for B/L +
20	K	Power supply for B/L -

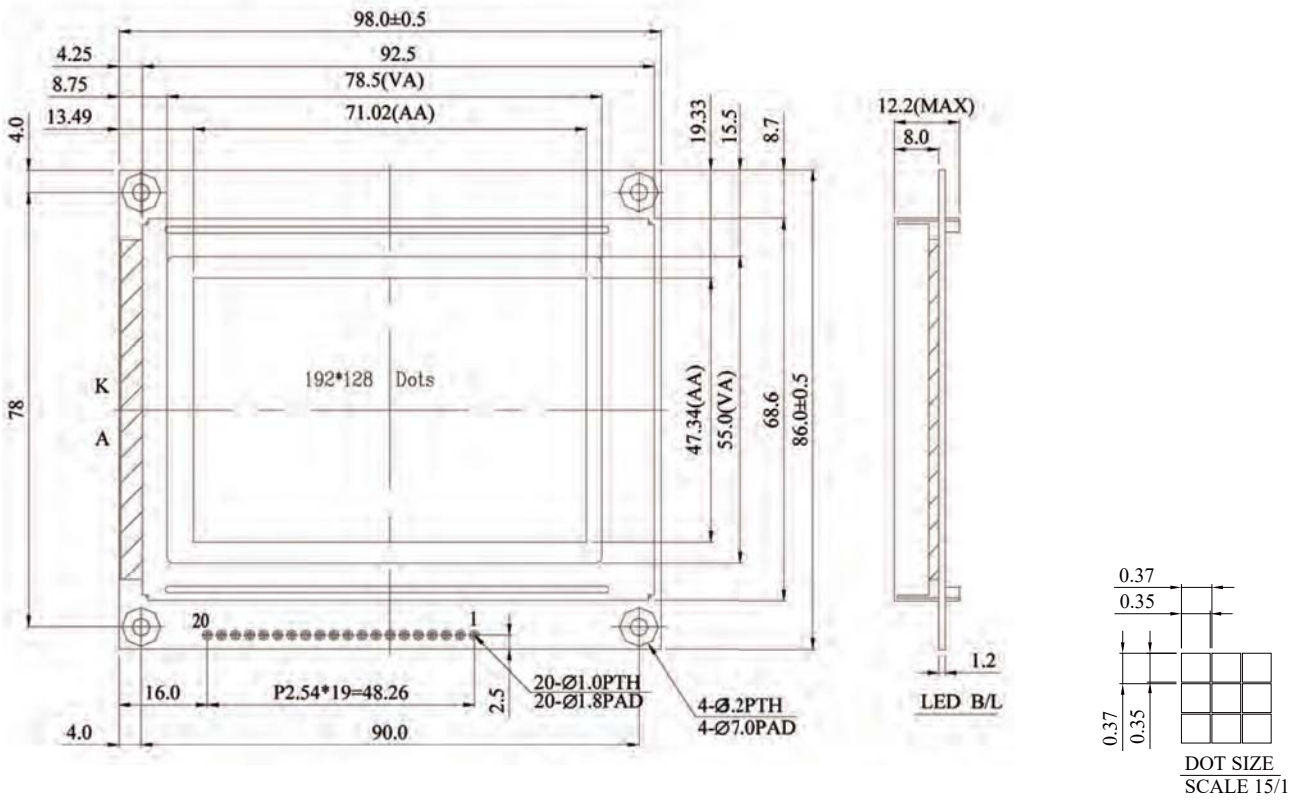
Mechanical Data

Item	Standard Value	Unit
Module Dimension	98.0 x 86.0	mm
Active Area	71.02 x 47.34	mm
Dot Pitch	0.37 x 0.37	mm
Dot Size	0.35 x 0.35	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	15.2	V

Mechanical Drawing



COB192128-02

Graphic 192x128dots

Part number list

WG192128C-□□□-□□#

Feature

1.Bulit-in controller RA6963 or equivalent
2.Bulit-in oscillation and nagative voltage
3.+5V single power supply
4. 8080 interface

Pin Assignment

Pin No.	Symbol	Description
1	Vss	Ground
2	Vdd	Power supply for logic
3	Vo	Contrast Adjustment
4	C/D	Data/ Instruction select signal
5	/RD	Data read. Read data from LCD Controller
6	/WR	Data write. Write data into LCD Controller
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	/CE	Enable signal
16	/RST	Controller reset signal, Active Low
17	Vee	Negative Voltage Output
18	NC	No connection
19	A	Power supply for B/L +
20	K	Power supply for B/L -

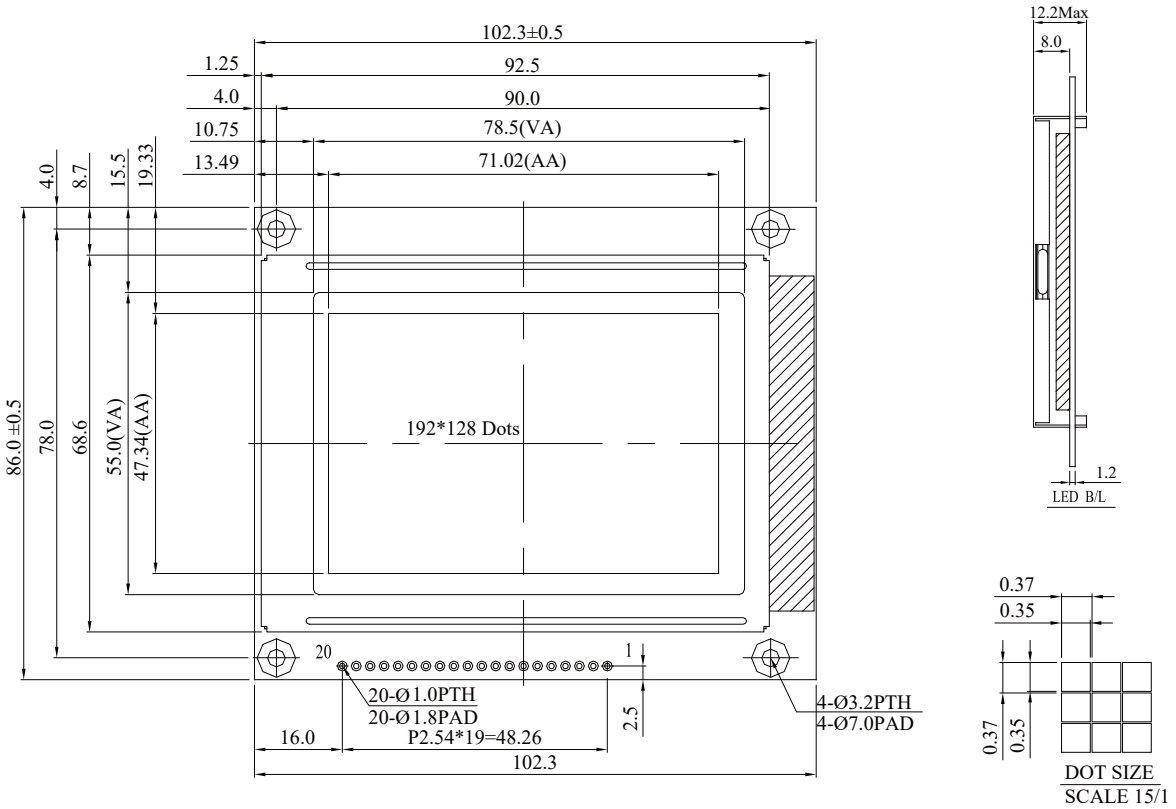
Mechanical Data

Item	Standard Value	Unit
Module Dimension	102.3 x 86.0	mm
Active Area	71.02 x 47.34	mm
Dot Pitch	0.37 x 0.37	mm
Dot Size	0.35 x 0.35	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	15.2	V

Mechanical Drawing



COB192192-01

Graphic 192x192dots

Part number list

BG192192A□□□□□$

Feature

1.No bulit-in controller
2.+5V single power supply
3.No option built-in negative voltage

Pin Assignment

Pin	Symbol	Function
1	Vdd	Power supply for Logic
2	FGND	Frame ground
3	CL2	Data shift pulse
4	INH	H: Display ON, L: Display OFF
5	FLM	First line marker
6	CL1	Data latch pulse
7	Vss	Ground
8	M	NC
9~12	D0~3	Display data, bit0~3
13	VLC	Input of negative power
14	Vo	Driving voltage for LCD
15	Vss	Ground
16	LEDA	Power supply for B/L (+)
17	LEDK	Power supply for B/L (–)

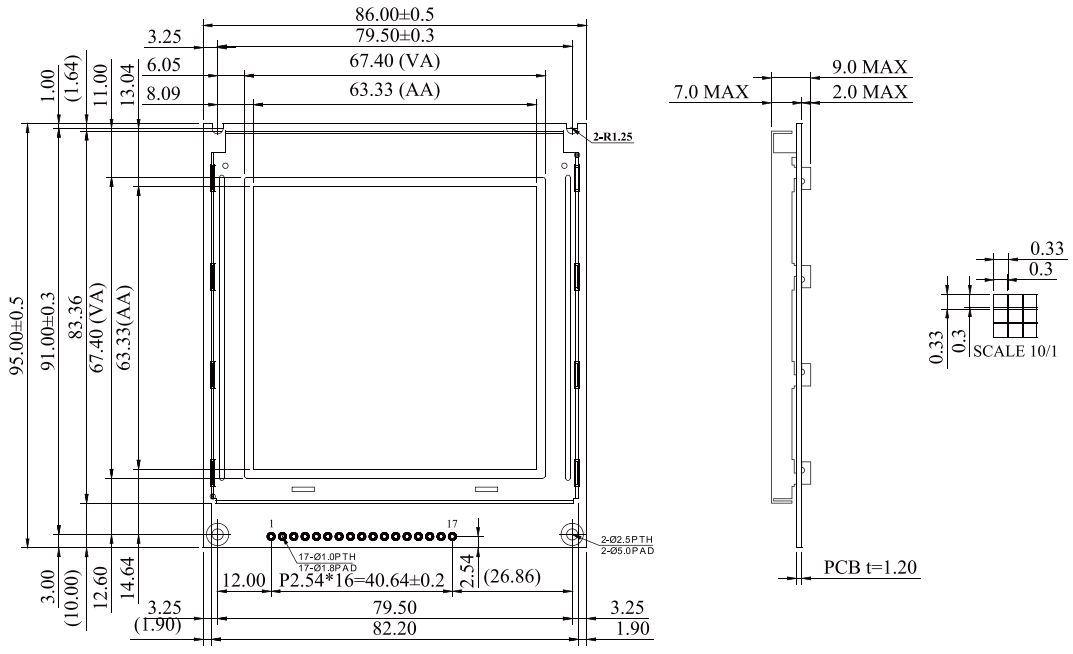
Mechanical Data

Item	Standard Value	Unit
Module Dimension	86.0 x 95.0	mm
Active Area	63.33 x 63.33	mm
Dot Pitch	0.33 x 0.33	mm
Dot Size	0.30 x 0.30	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	23.8	V

Mechanical Drawing



COB20232-01

Graphic 202x32dots

Part number list

WG20232A-□□□-□□#

Feature

1.Bulit-in controller SBN1661G or equivalent
2.Bulit-in oscillation and nagative voltage
3.+3V / +5V single power supply
4. 6800 /SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	R/W	Read/Write select signal
6	CS1	Chip Select Signal for IC1
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	V_{EE}	Negative Voltage Output
16	RES	Controller reset signal, Active Low
17	A	Power supply for B/L +
18	K	Power supply for B/L -
19	CS2	Chip Select Signal for IC2
20	CS3	Chip Select Signal for IC3

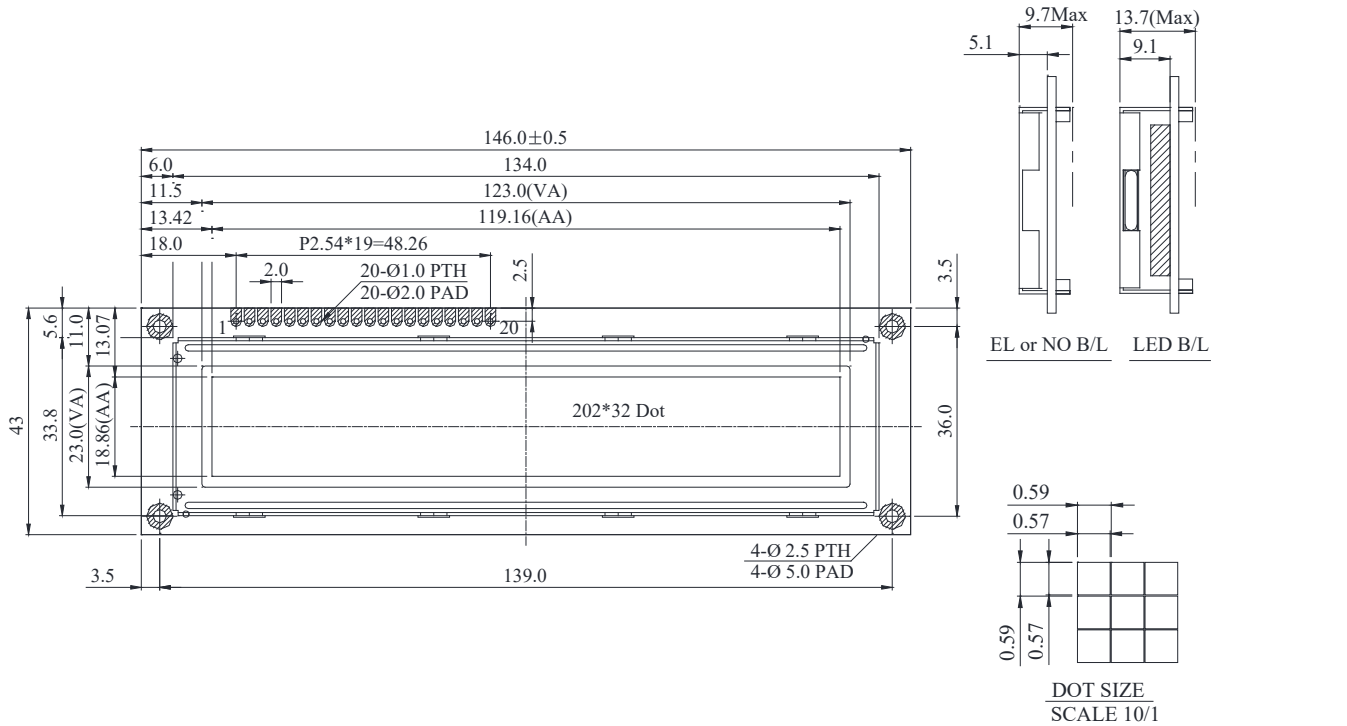
Mechanical Data

Item	Standard Value	Unit
Module Dimension	146.0 x 43.0	mm
Active Area	119.16 x 18.86	mm
Dot Pitch	0.59 x 0.59	mm
Dot Size	0.57 x 0.57	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	5.0	V

Mechanical Drawing



COB24048-01

Graphic 240x48dots

Part number list

WG24048A-□□□-□□#

Feature

1.Bulit-in controller NT7108 or equivalent
2.Bulit-in oscillation and nagative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin No.	Symbol	Description
1	GND	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	D/I	Data/ Instruction select signal
5	R/W	Read/Write select signal
6	E	Enable signal
7	RESET	Controller reset signal, Active Low
8	DB0	Data bus line
9	DB1	Data bus line
10	DB2	Data bus line
11	DB3	Data bus line
12	DB4	Data bus line
13	DB5	Data bus line
14	DB6	Data bus line
15	DB7	Data bus line
16	CS1	Chip Select Signal for IC1
17	CS2	Chip Select Signal for IC2
18	CS3	Chip Select Signal for IC3
19	CS4	Chip Select Signal for IC4
20	V_{EE}	Negative Voltage Output
21	A	Power supply for B/L +
22	K	Power supply for B/L -

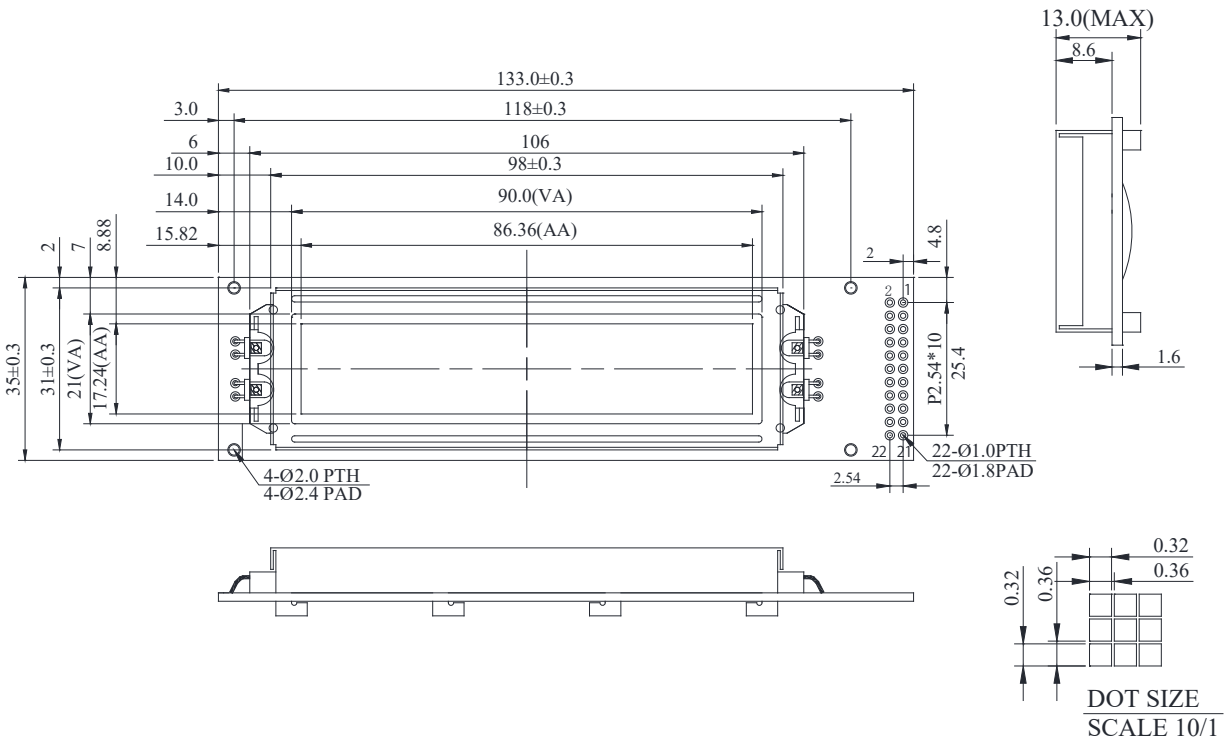
Mechanical Data

Item	Standard Value	Unit
Module Dimension	133.0 x 35.0	mm
Active Area	86.36 x 17.24	mm
Dot Pitch	0.36 x 0.36	mm
Dot Size	0.32 x 0.32	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	7.5	V

Mechanical Drawing



COB24064-01

Graphic 240x64dots

Part number list

WG24064E-□□□-□□#

Feature

1.Built-in controller RA6963 or equivalent
2.Bulit-in oscillation and negative voltage
3.+3V / +5V single power supply
4. 8080 interface
5.(Option) Built-in Negative voltage

Pin Assignment

Pin	Symbol	Function
1	FG	Frame ground
2	Vss	Power supply (GND)
3	Vdd	Power supply (+5V)
4	Vo	Contrast Adjustment
5	/WR	Data write
6	/RD	Data read
7	/CE	Chip enable
8	C/D	Command/data
9	Vee	Negative Voltage output
10	/RST	Reset signal
11~18	DB0~7	Data bus line
19	FS	Font select(H:6x8 L:8x8)
20	NC	No connection

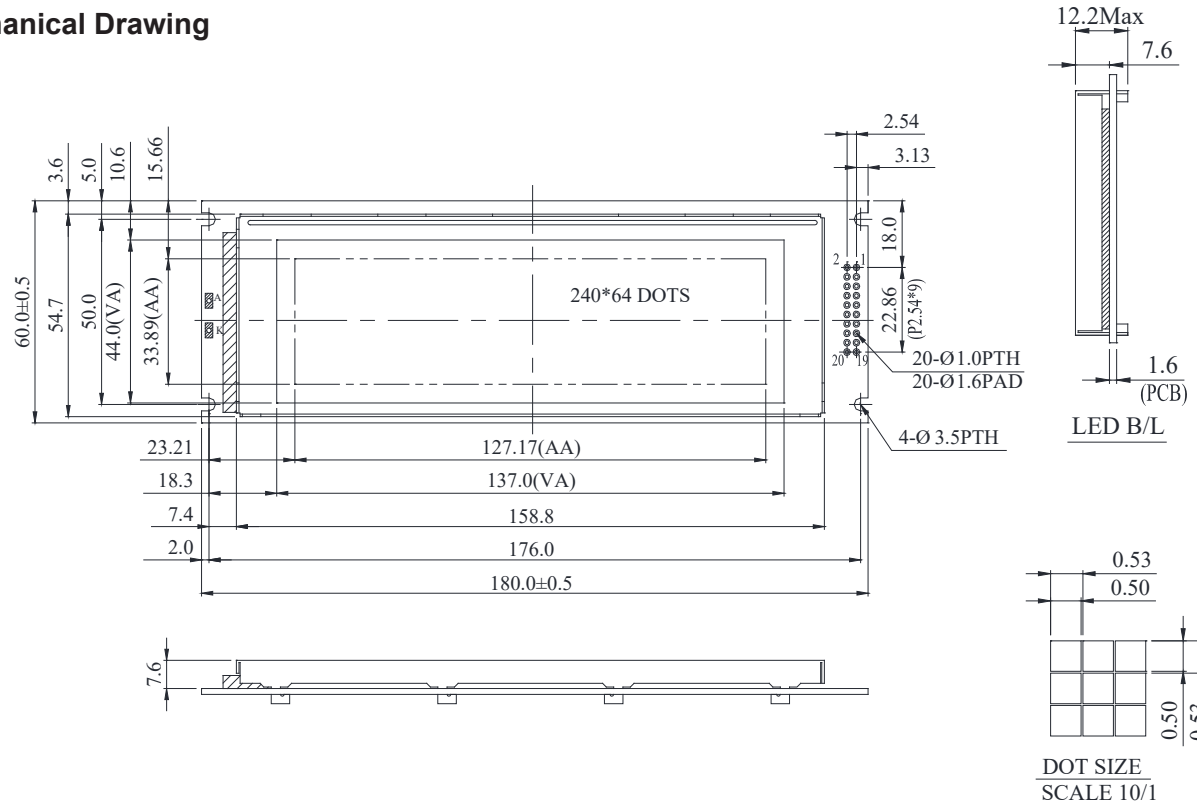
Mechanical Data

Item	Standard Value	Unit
Module Dimension	180.0 x 60.0	mm
Active Area	127.17 x 33.89	mm
Dot Pitch	0.53 x 0.53	mm
Dot Size	0.50 x 0.50	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	12.7	V

Mechanical Drawing



COB24064-02

Graphic 240x64dots

Part number list

BG24064E□□□□□$

Feature

1.Built-in controller T6963C or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5.No option Built-in Negative voltage

Pin Assignment

Pin	Symbol	Function
1	FG	Frame ground
2	Vss	Power supply (GND)
3	Vdd	Power supply (+5V)
4	Vo	Contrast Adjustment
5	/WR	Data write
6	/RD	Data read
7	/CE	Chip enable
8	C/D	Command/data read/write
9	NC	No connection
10	/RST	Reset signal
11~18	DB0~7	Data bus line
19	FS	Font select(H:6x8 L:8x8)
20	NC	No connection

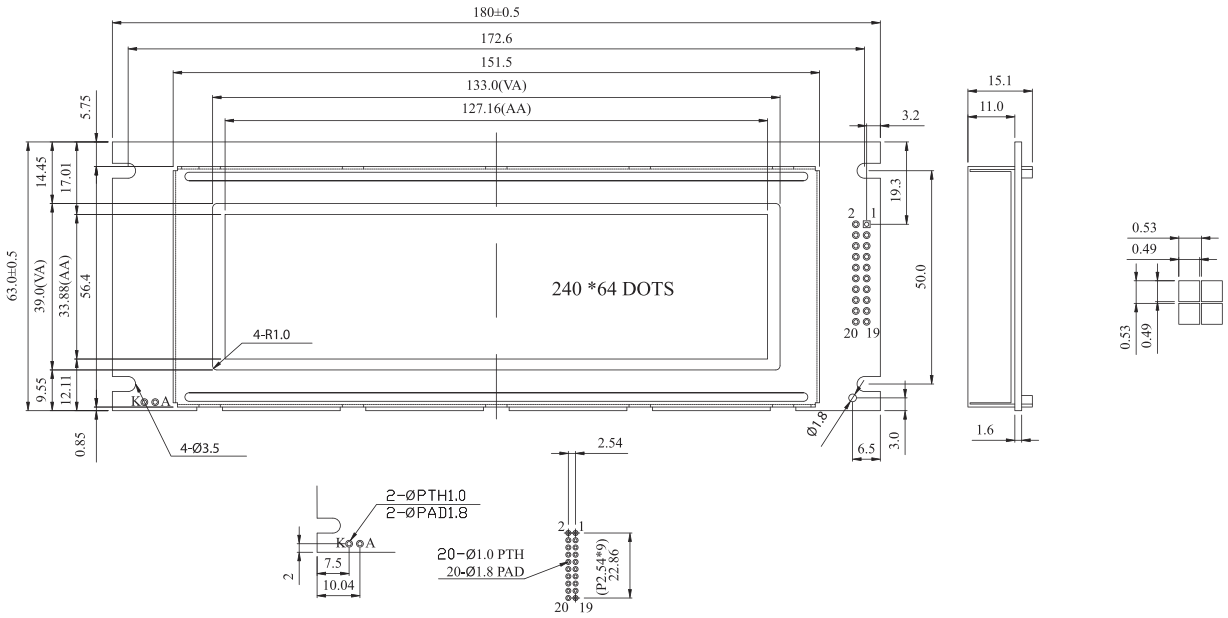
Mechanical Data

Item	Standard Value	Unit
Module Dimension	180.0 x 63.0	mm
Active Area	127.16 x 33.88	mm
Dot Pitch	0.53 x 0.53	mm
Dot Size	0.49 x 0.49	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	12.9	V

Mechanical Drawing



COB24064-03

Graphic 240x64dots

Part number list

BG24064A□□□□□$
WG24064A-□□□-□□#
WG24064C-□□□-□□#
SG24064C□□□-□□-□□-□

Feature

1.Built-in controller T6963C or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 8080 interface

Pin Assignment

Pin	Symbol	Function
1	FG	Frame ground
2	Vss	Power supply (GND)
3	Vdd	Power supply (+5V)
4	Vo	Contrast Adjustment
5	/WR	Data write
6	/RD	Data read
7	/CE	Chip enable
8	C/D	Command/data
9	Vee	Negative Voltage output
10	/RST	Reset signal
11~18	DB0~7	Data bus line
19	FS	Font select(H:6x8 L:8x8)
20	NC	No connection

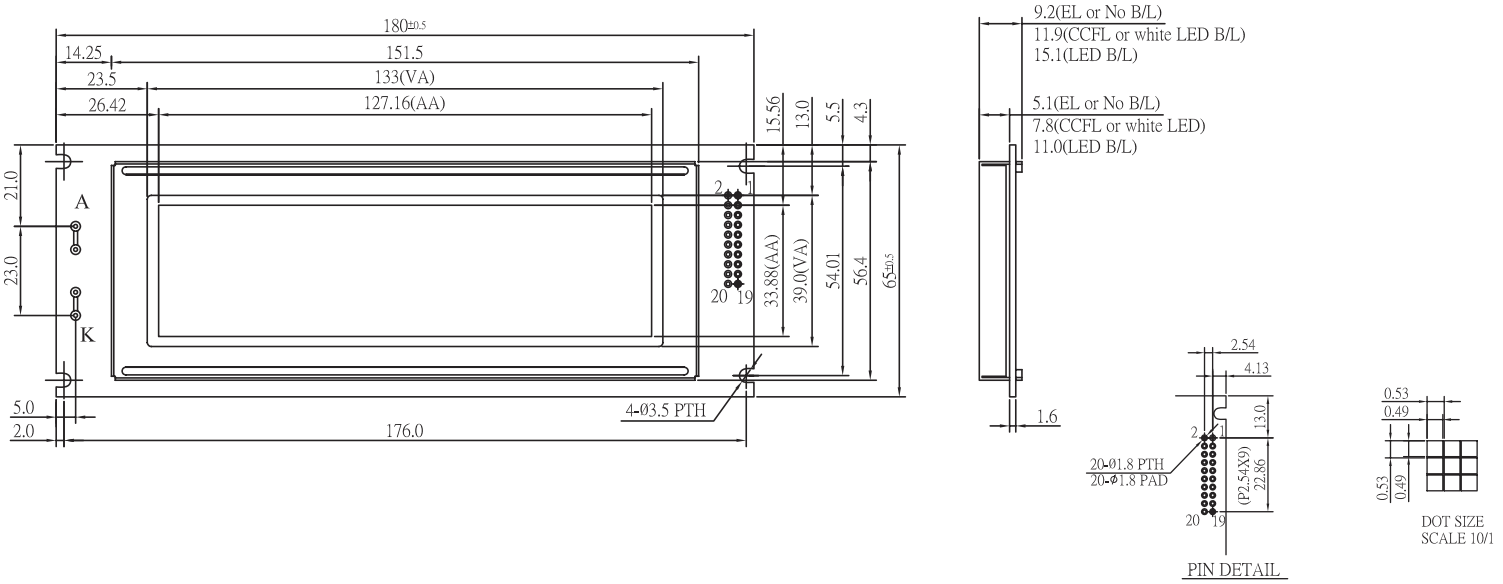
Mechanical Data

Item	Standard Value	Unit
Module Dimension	180.0 x 65.0	mm
Active Area	127.16 x 33.88	mm
Dot Pitch	0.53 x 0.53	mm
Dot Size	0.49 x 0.49	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	12.8	V

Mechanical Drawing



COB24064-04

Graphic 240x64dots

Part number list

SG24064A□□□-□□-□□-□

Feature

1.Built-in controller T6963C or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 8080 interface

Pin Assignment

Pin Assignment

Pin	Symbol	Function
1	FG	Frame ground
2	Vss	Power supply (GND)
3	Vdd	Power supply (+5V)
4	Vo	Contrast Adjustment
5	/WR	Data write
6	/RD	Data read
7	/CE	Chip enable
8	C/D	Command/data read/write
9	NC	No connection
10	/RST	Reset signal
11~18	DB0~7	Data bus line
19	FS	Font select(H:6x8 L:8x8)
20	NC	No connection

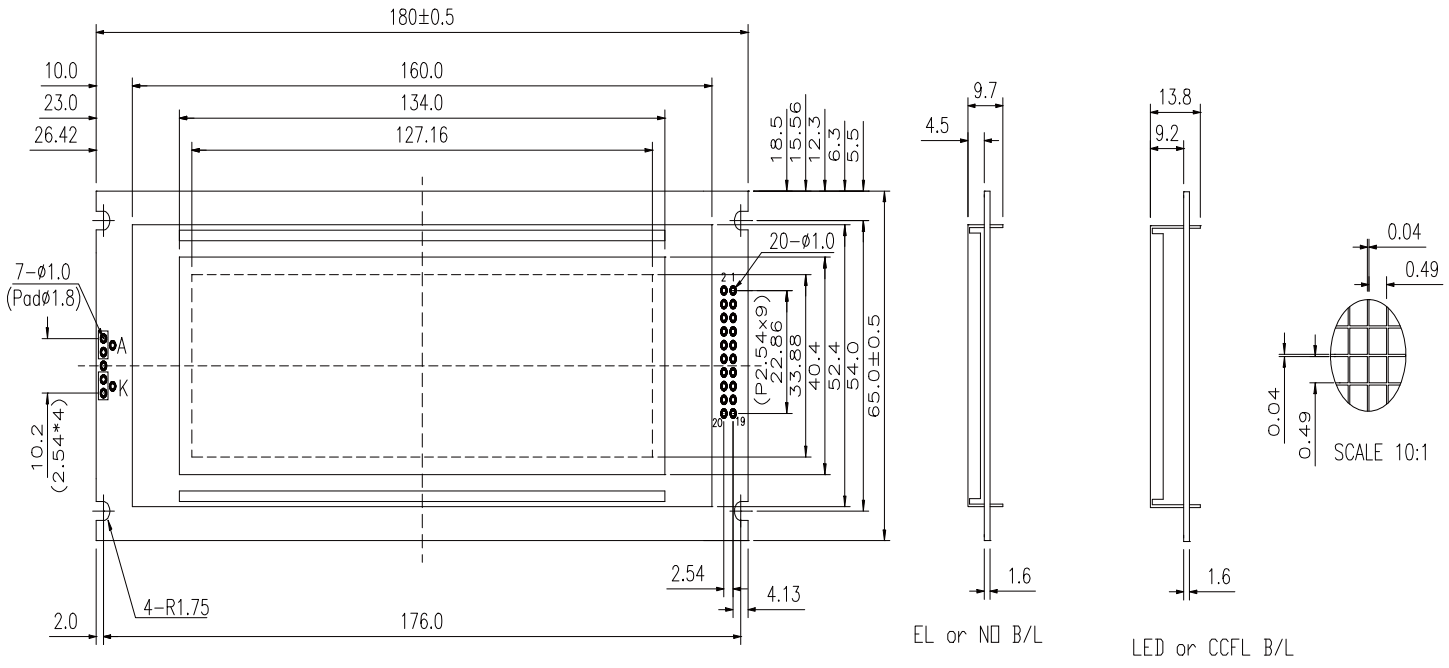
Mechanical Data

Item	Standard Value	Unit
Module Dimension	180.0 x 65.0	mm
Active Area	127.16 x 33.88	mm
Dot Pitch	0.53 x 0.53	mm
Dot Size	0.49 x 0.49	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	12.2	V

Mechanical Drawing



COB24064-05

Graphic 240x64dots

Part number list

SG24064G□□□-□□-□□-□

Feature

1.Bulit-in controller T6963C or equivalent
2.Bulit-in oscillation and nagative voltage
3.+5V single power supply
4. 8080 interface

Pin Assignment

Pin No.	Symbol	Description
1	FG	Frame ground
2	V_{SS}	Ground
3	V_{DD}	Power supply for logic
4	V_O	Contrast Adjustment
5	/WR	Data write. Write data into LCD Controller
6	/RD	Data read. Read data from LCD Controller
7	/CE	Enable signal
8	C/D	Data/ Instruction select signal
9	NC	No connection
10	/RESET	Controller reset signal, Active Low
11	DB0	Data bus line
12	DB1	Data bus line
13	DB2	Data bus line
14	DB3	Data bus line
15	DB4	Data bus line
16	DB5	Data bus line
17	DB6	Data bus line
18	DB7	Data bus line
19	FS	Selection of font; H : 6 * 8 , L : 8 * 8
20	V_{EE}	Negative Voltage Output
21	A	Power supply for B/L +
22	K	Power supply for B/L -

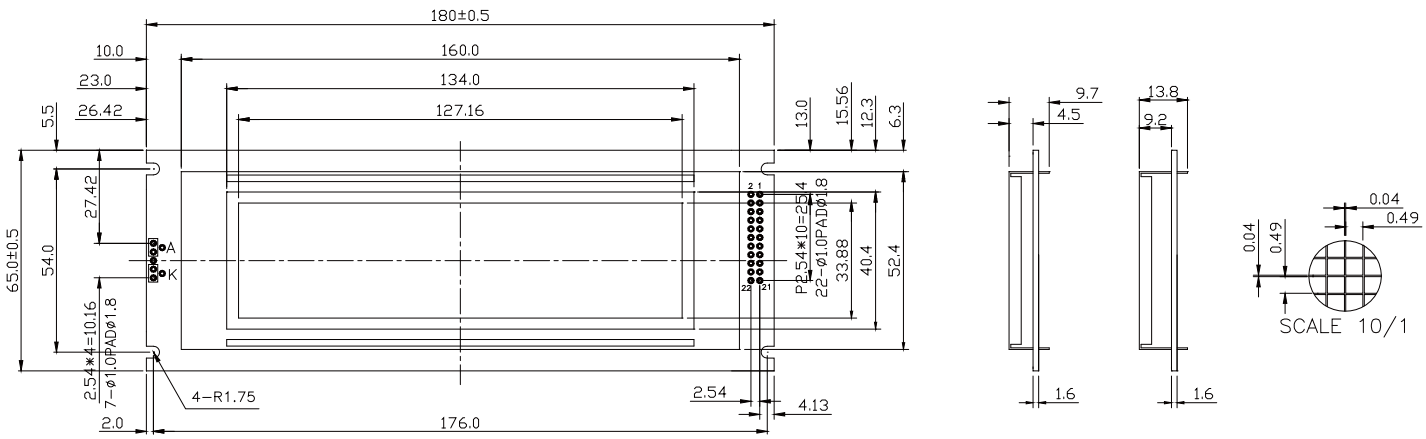
Mechanical Data

Item	Standard Value	Unit
Module Dimension	180.0 x 65.0	mm
Active Area	127.16 x 33.88	mm
Dot Pitch	0.53 x 0.53	mm
Dot Size	0.49 x 0.49	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	12.2	V

Mechanical Drawing



COB24064-06

Graphic 240x64dots

Part number list

WG24064J-□□□-□□#

Feature

1.Bulit-in controller RA6963 or equivalent
2.Bulit-in oscillation and nagative voltage
3.+5V single power supply
4. 8080 interface

Pin Assignment

Pin No.	Symbol	Description
1	FG	Frame ground
2	V_{SS}	Ground
3	V_{DD}	Power supply for logic
4	V_O	Contrast Adjustment
5	/WR	Data write. Write data into LCD Controller
6	/RD	Data read. Read data from LCD Controller
7	/CE	Enable signal
8	C/D	Data/ Instruction select signal
9	V_{EE}	Negative Voltage Output
10	/RESET	Controller reset signal, Active Low
11	DB0	Data bus line
12	DB1	Data bus line
13	DB2	Data bus line
14	DB3	Data bus line
15	DB4	Data bus line
16	DB5	Data bus line
17	DB6	Data bus line
18	DB7	Data bus line
19	FS	Selection of font; H : 6 * 8 , L : 8 * 8
20	NC	No connection
21	A	Power supply for B/L +
22	K	Power supply for B/L -

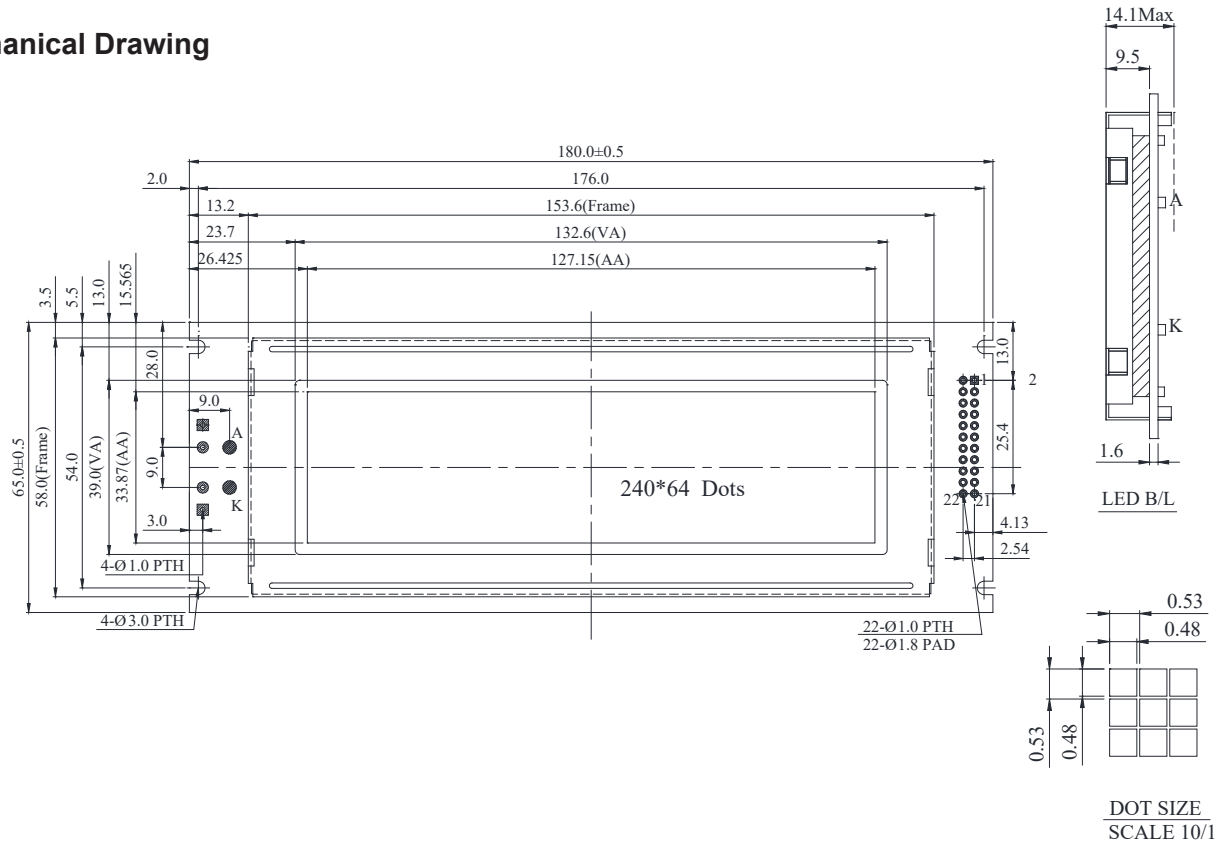
Mechanical Data

Item	Standard Value	Unit
Module Dimension	180.0 x 65.0	mm
Active Area	127.15 x 33.87	mm
Dot Pitch	0.53 x 0.53	mm
Dot Size	0.48 x 0.48	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	14.5	V

Mechanical Drawing



COB24064-07

Graphic 240x64dots

Part number list

BG24064B□□□□□$

Feature

1.Built-in controller LC7981 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.(Option) Built-in Negative voltage

Pin Assignment

Pin	Symbol	Function
1	Vss	Power supply (GND)
2	Vdd	Power supply (+5V)
3	Vo	Contrast Adjustment
4	RS	Data/instruction select
5	R/W	Data read/write
6	E	Enable signal
7~14	DB0~7	Data bus line
15	/CS	Chip select
16	/RST	Reset signal
17	Vee	Negative Voltage output (-15V)
18	A	LED B/L V+
19	K	LED B/L V-
20	FGND	Frame GND

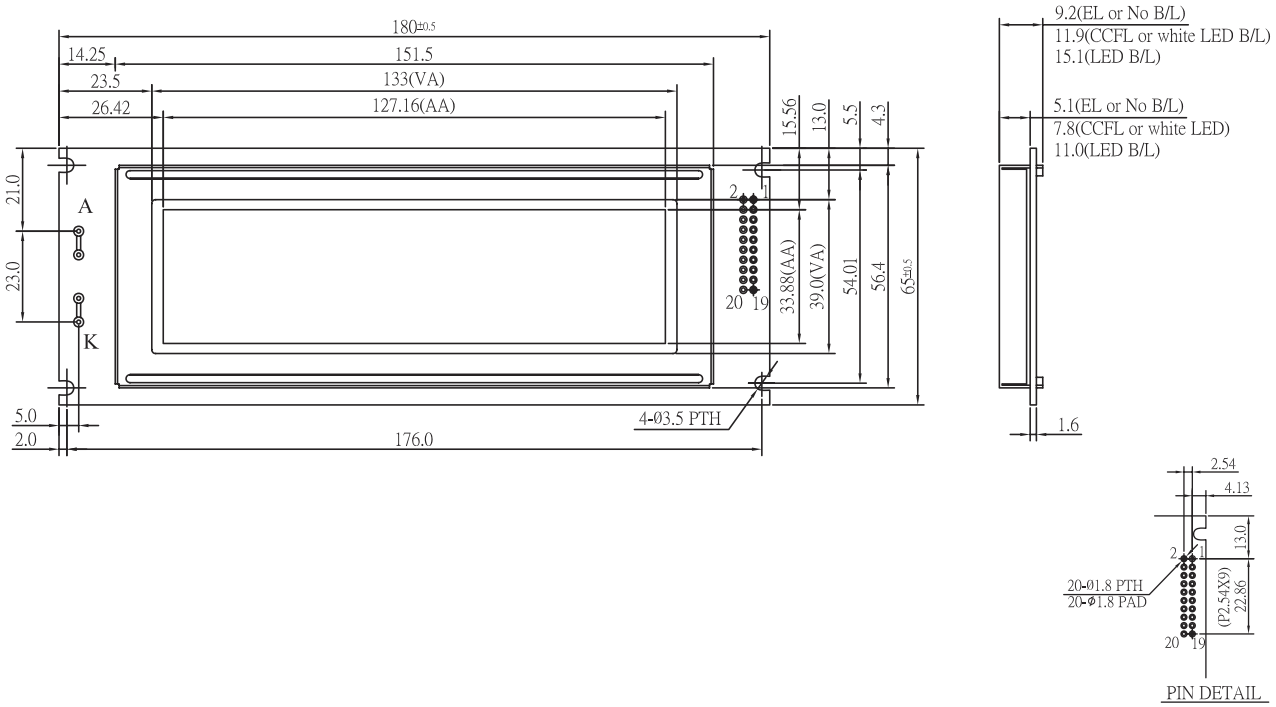
Mechanical Data

Item	Standard Value	Unit
Module Dimension	180.0 x 65.0	mm
Active Area	127.16 x 33.88	mm
Dot Pitch	0.53 x 0.53	mm
Dot Size	0.49 x 0.49	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	12.6	V

Mechanical Drawing



COB24064-08

Graphic 240x64dots

Part number list

BG24064C□□□□□$

Feature

1.Bulit-in controller ST7920
2.Bulit-in oscillation and positive voltage
3.+5V single power supply
4.6800 interface
5.Built-in Chinese font

Pin Assignment

Pin	Symbol	Function
1	FG	Frame ground
2	Vss	Power supply (GND)
3	Vdd	Power supply (+5V)
4	Vo	Contrast Adjustment
5	E1	Chip select 1 uper 240x32
6	R/W	H:data read, L:data write
7	E2	Chip select 2 lower 240x32
8	RS	Command/data
9	Vee	Positive Voltage output
10	/RST	Reset signal
11~18	DB0~7	Data bus line
19	A	Power supply for LED backlight V+ GND
20	K	Power supply for LED backlight (GND)

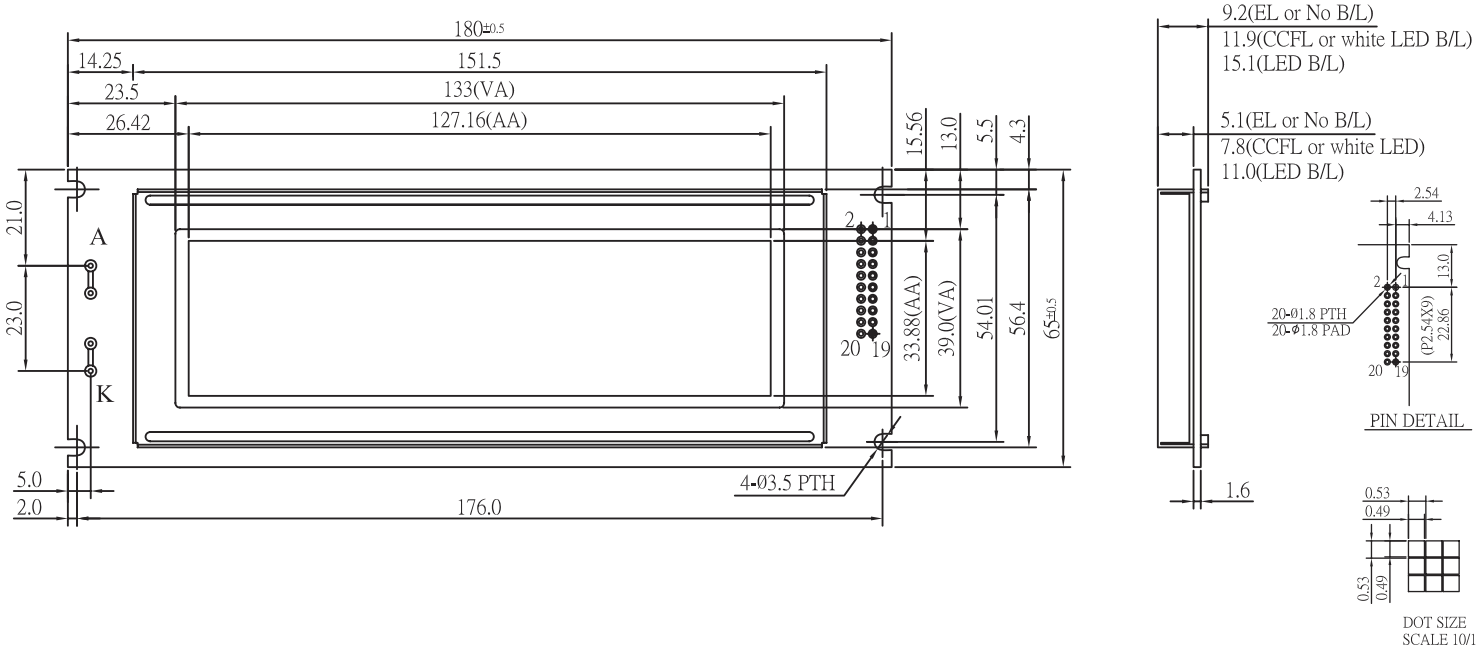
Mechanical Data

Item	Standard Value	Unit
Module Dimension	180.0 x 65.0	mm
Active Area	127.16 x 33.88	mm
Dot Pitch	0.53 x 0.53	mm
Dot Size	0.49 x 0.49	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	5.5	V

Mechanical Drawing



COB24064-09

Graphic 240x64dots

Part number list

BG24064D□□□□□□$

Feature

1.No bulit-in controller
2.+5V single power supply
3.Built-in negative voltage

Pin Assignment

Pin	Symbol	Function
1	FLM	First Line Marker
2	CP	Data Shift Clock
3	LP	Data Latch Clock
4	M	AC signal for LCD driver output
5	Vdd	Power supply (+5V)
6	Vss	Power supply (GND)
7	A	Backlight power supply(+)
8~11	DB0~DB3	Data bus line
12	Vo	Contrast adjustment
13	K	Backlight power supply(GND)
14	FGND	Frame GND

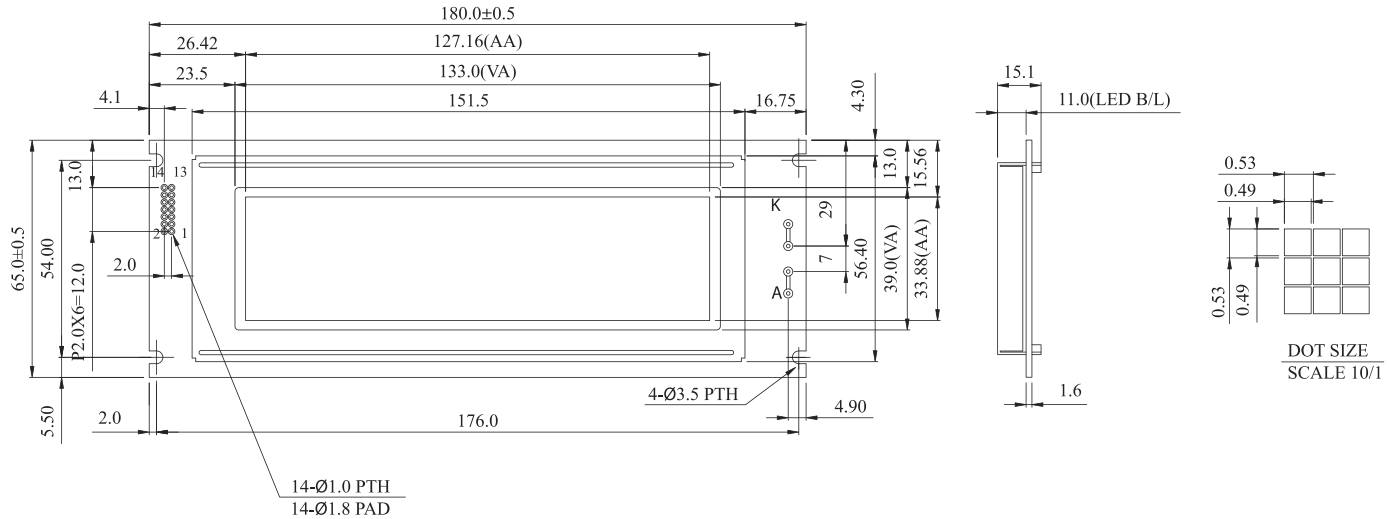
Mechanical Data

Item	Standard Value	Unit
Module Dimension	180.0 x 65.0	mm
Active Area	127.16 x 33.88	mm
Dot Pitch	0.53 x 0.53	mm
Dot Size	0.49 x 0.49	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	12.5	V

Mechanical Drawing



COG24064-01

Graphic 240x64dots

Part number list

WO24064D-□□□-□□#

Feature

1.Bulit-in controller ST7586S
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	VG	VG is the power of SEG-drivers.
2	XV0	Negative operating voltage of COM-drivers.
3	V0	Positive operating voltage for Vop generator.
4	VM	VM is the non-select voltage level of COM-drivers.
5	VDDA	Analog power for internal booster.
6	V_{SS}	Ground
7	VD1	VD1 is the power source of digital circuits.
8	VDDI	Power of interface I/O circuit.
9	CSB	Chip select input pins
10	IF3	These pins select interface operation mode. "110" : 80 series。 "100" : 68 series。 "011" : SPI-4 。"010" : SPI-3
11	IF2	
12	IF1	
13	RSTB	Controller reset signal, Active Low
14	/RD(E)	8080 family: Read signal, 6800 family: Enable clock
15	D7	Data bus line
16	D6	Data bus line
17	D5	Data bus line
18	D4	Data bus line
19	D3	Data bus line
20	D2	Data bus line
21	D1	Data bus line
22	D0	Data bus line
23	NC	No connection
24	/WR(R/W)	8080 family: Write signal, 6800 family: Read/Write signal
25	A0(SCL)	Data/ Instruction select signal / In serial mode used as SCL (serial-clock)
26	V_{SS}	Ground

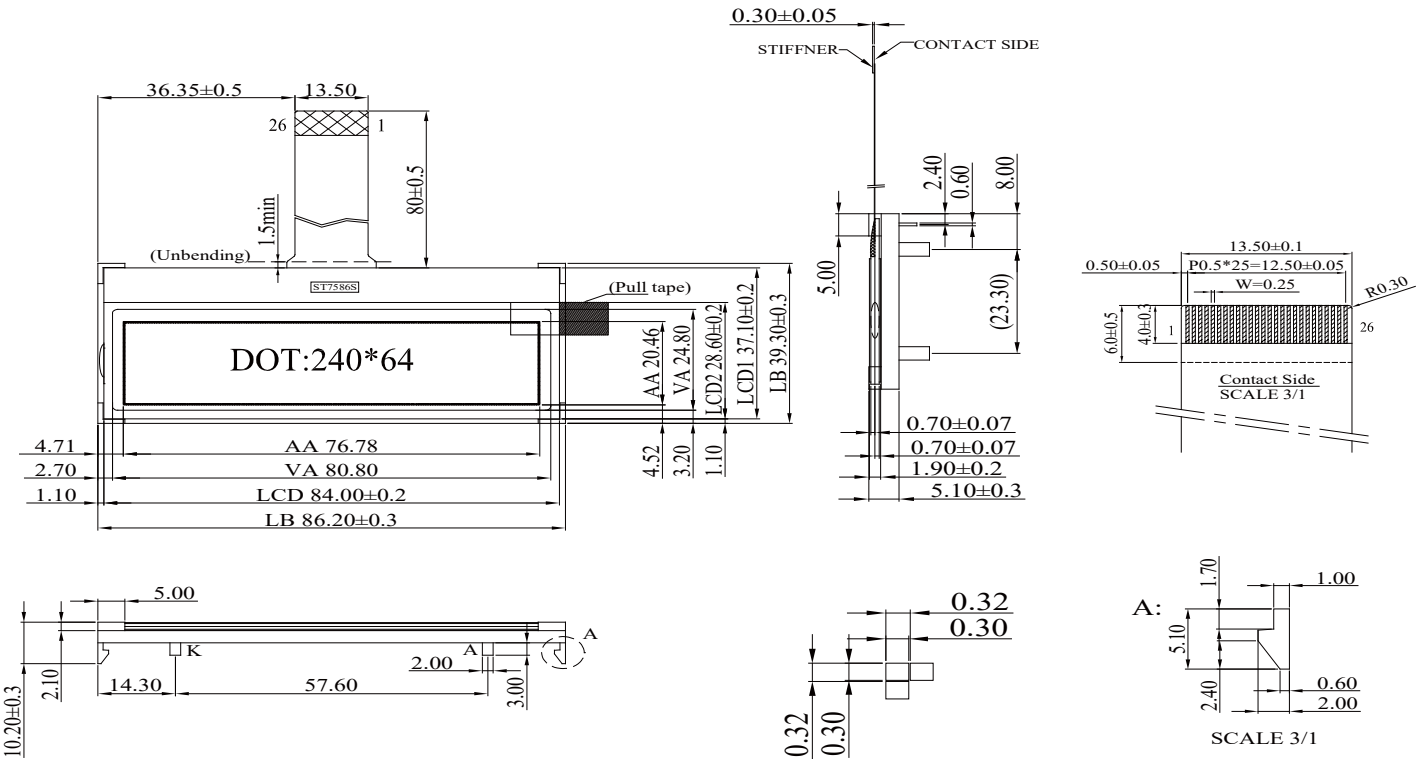
Mechanical Data

Item	Standard Value	Unit
Module Dimension	86.2 x 39.3	mm
Active Area	76.78 x 20.46	mm
Dot Pitch	0.32 x 0.32	mm
Dot Size	0.30 x 0.30	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	10.0	V

Mechanical Drawing



COG24064-02

Graphic 240x64dots

Part number list

WO24064C-□□□-□□#

Feature

1.Bulit-in controller ST7586S
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	VG	VG is the power of SEG-drivers.
2	XV0	Negative operating voltage of COM-drivers.
3	V0	Positive operating voltage for Vop generator.
4	VM	VM is the non-select voltage level of COM-drivers.
5	VDDA	Analog power for internal booster.
6	V_{SS}	Ground
7	VD1	VD1 is the power source of digital circuits.
8	VDDI	Power of interface I/O circuit.
9	CSB	Chip select input pins
10	IF3	These pins select interface operation mode. "110" : 80 series。 "100" : 68 series。 "011" : SPI-4 。"010" : SPI-3
11	IF2	
12	IF1	
13	RSTB	Controller reset signal, Active Low
14	/RD(E)	8080 family: Read signal, 6800 family: Enable clock
15	D7	Data bus line
16	D6	Data bus line
17	D5	Data bus line
18	D4	Data bus line
19	D3	Data bus line
20	D2	Data bus line
21	D1	Data bus line
22	D0	Data bus line
23	NC	No connection
24	/WR(R/W)	8080 family: Write signal, 6800 family: Read/Write signal
25	A0(SCL)	Data/ Instruction select signal / In serial mode used as SCL (serial-clock)
26	V_{SS}	Ground

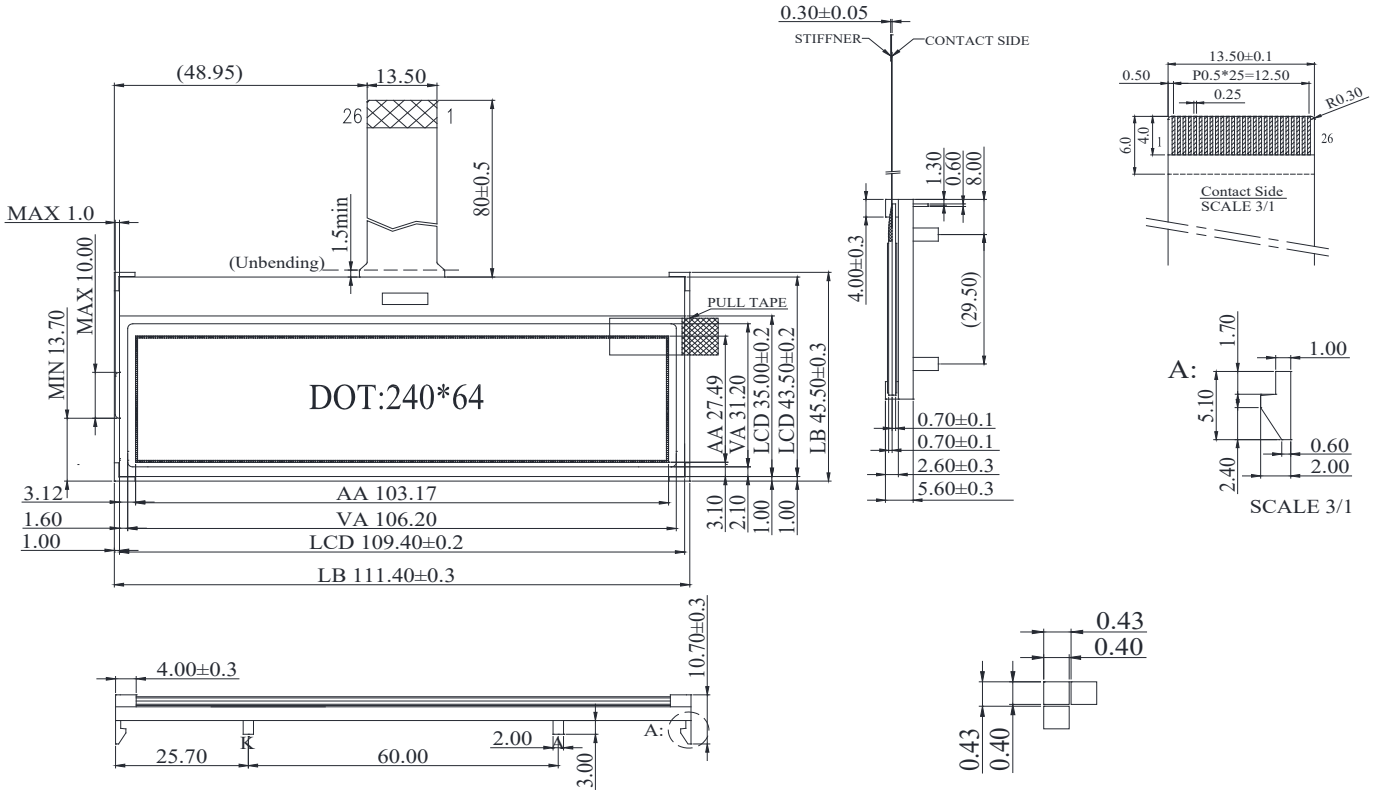
Mechanical Data

Item	Standard Value	Unit
Module Dimension	111.4 x 45.5	mm
Active Area	103.17 x 27.49	mm
Dot Pitch	0.43 x 0.43	mm
Dot Size	0.40 x 0.40	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	10.0	V

Mechanical Drawing



COG24064-03

Graphic 240x64dots

Part number list

WO24064A1-□□□-□□#

Feature

1.Bulit-in controller ST7565P
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	NC	No connection
2	FR	Scan start-up signal
3	CL	External clock 2KHZ
4	/DOF	This is the LCD blanking control terminal.
5	/CS1	The chip select signal
6	CS2	The chip select signal
7	/RES	Controller reset signal, Active Low
8	A0	Data/ Instruction select signal
9	/WR	Data write. Write data into LCD Controller
10	/RD	Data read. Read data from LCD Controller
11~18	DB0~DB7	Data bus line
19	V_{DD}	Power supply for logic
20	V_{SS}	Ground
21	Vout	Positive Voltage output
22	C3+	DC/DC voltage converter.
23	C1-	DC/DC voltage converter.
24	C1+	DC/DC voltage converter.
25	C2+	DC/DC voltage converter.
26	C2-	DC/DC voltage converter.
27	V4	Bias voltage levels for LCD driving
28	V3	Bias voltage levels for LCD driving
29	V2	Bias voltage levels for LCD driving
30	V1	Bias voltage levels for LCD driving
31	V0	Bias voltage levels for LCD driving
32	VR	LCD Contrast Adjustment when IRS = "L"
33	C86	Interface selection 6800/8080
34	P/S	Selects the interface type: Serial or Parallel.
35	NC	No connection
36	NC	No connection

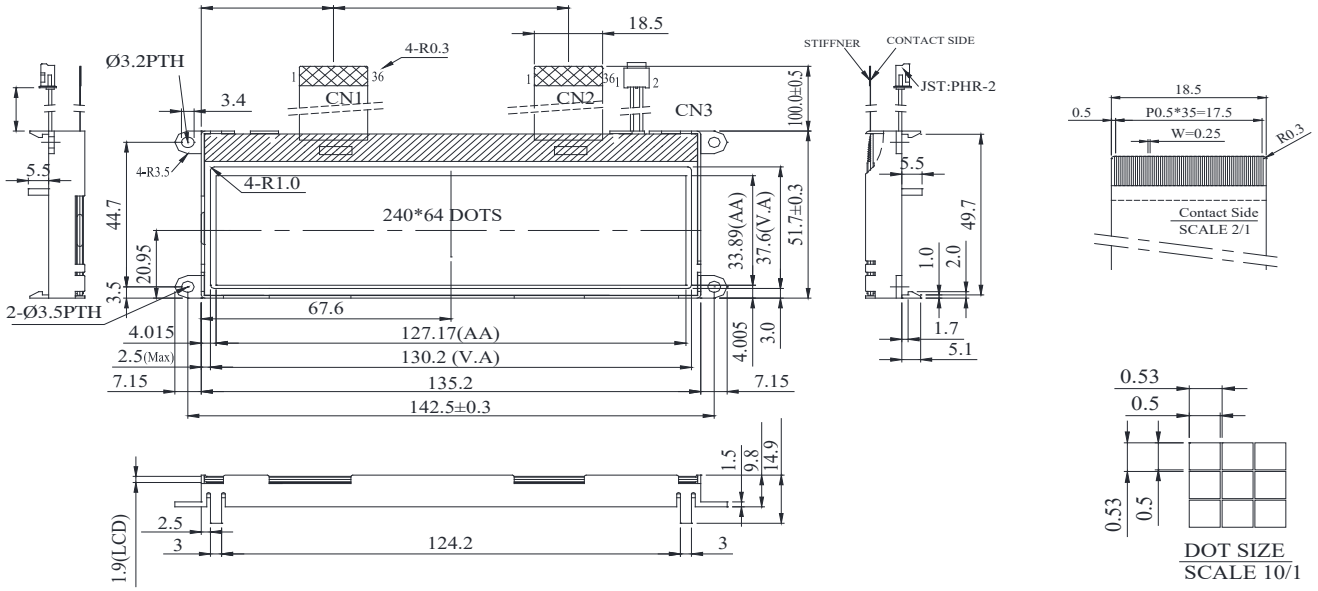
Mechanical Data

Item	Standard Value	Unit
Module Dimension	149.5 x 51.7	mm
Active Area	127.17 x 33.89	mm
Dot Pitch	0.53 x 0.53	mm
Dot Size	0.50 x 0.50	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	V0-Vss	11.0	V

Mechanical Drawing



COG24064-04

Graphic 240x64dots

Part number list

WO24064B-□□□-□□#

Feature

1.Bulit-in controller ST7586S
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	VG	VG is the power of SEG-drivers.
2	XV0	Negative operating voltage of COM-drivers.
3	V0	Positive operating voltage for Vop generator.
4	VM	VM is the non-select voltage level of COM-drivers.
5	VDDA	Analog power for internal booster.
6	V_{SS}	Ground
7	VD1	VD1 is the power source of digital circuits.
8	VDDI	Power of interface I/O circuit.
9	CSB	Chip select input pins
10	IF3	These pins select interface operation mode. "110" : 80 series。 "100" : 68 series。 "011" : SPI-4 。"010" : SPI-3
11	IF2	
12	IF1	
13	RSTB	Controller reset signal, Active Low
14	/RD(E)	8080 family: Read signal, 6800 family: Enable clock
15	D7	Data bus line
16	D6	Data bus line
17	D5	Data bus line
18	D4	Data bus line
19	D3	Data bus line
20	D2	Data bus line
21	D1	Data bus line
22	D0	Data bus line
23	NC	No connection
24	/WR(R/W)	8080 family: Write signal, 6800 family: Read/Write signal
25	A0(SCL)	Data/ Instruction select signal / In serial mode used as SCL (serial-clock)
26	V_{SS}	Ground

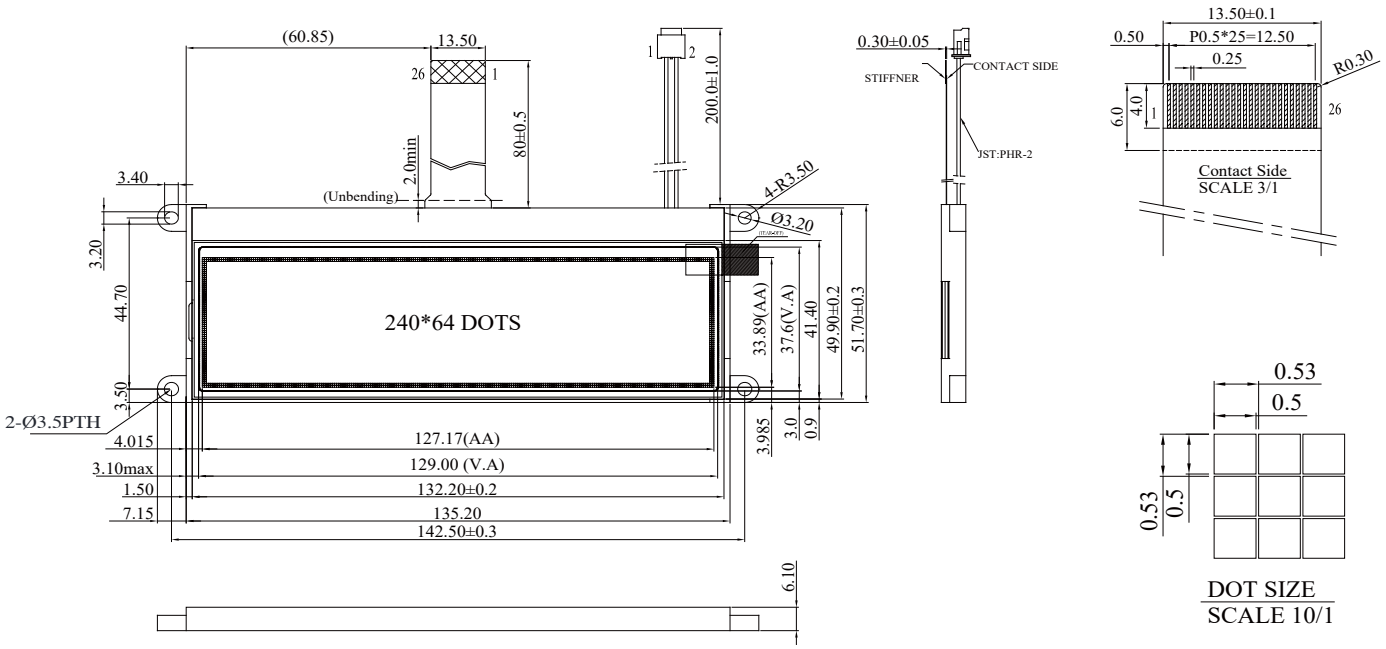
Mechanical Data

Item	Standard Value	Unit
Module Dimension	149.5 x 51.7	mm
Active Area	127.17 x 33.89	mm
Dot Pitch	0.53 x 0.53	mm
Dot Size	0.50 x 0.50	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	V0-XV0	10.0	V

Mechanical Drawing



COG24064-05

Graphic 240x64dots

Part number list

WX24064B1-□□□-□□#

Feature

1.Bulit-in controller ST7565P
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 interface

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	R/W	Read/Write select signal
6	E	Enable signal
7~14	DB0~DB7	Data bus line
15	/CS1	This is the chip select signal. When /CS1 = "L" and CS2 = "H", then the chip select becomes active, and data/command I/O is enabled.
16	/CS2	This is the chip select signal. When /CS1 = "L" and CS2 = "H", then the chip select becomes active, and data/command I/O is enabled.
17	/RST	Controller reset signal, Active Low
18	80/86	Interface selection 6800/8080
19	A	Power supply for B/L +
20	K	Power supply for B/L -

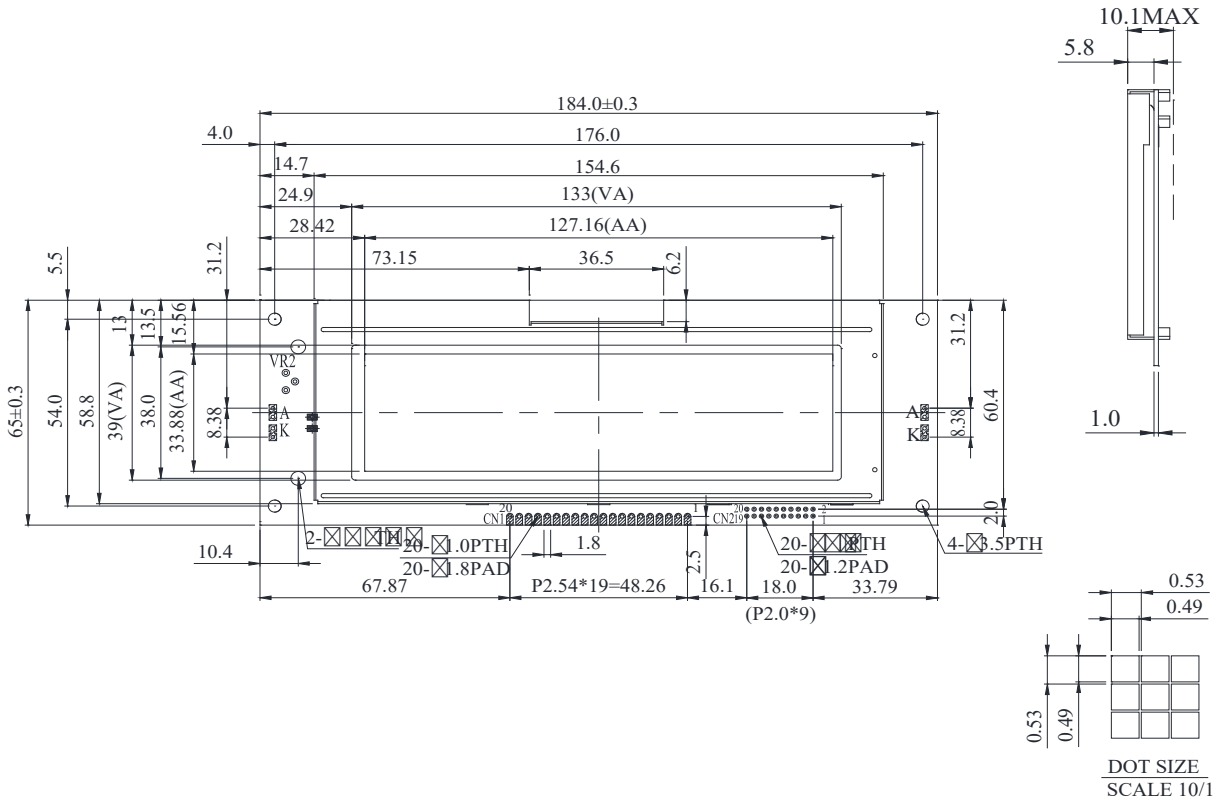
Mechanical Data

Item	Standard Value	Unit
Module Dimension	184.0 x 65.0	mm
Active Area	127.16 x 33.88	mm
Dot Pitch	0.53 x 0.53	mm
Dot Size	0.49 x 0.49	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	V0-Vss	11.0	V

Mechanical Drawing



COB240128-01

Graphic 240x128dots

Part number list

SG240128F□□□-□□-□□-□

Feature

1.Built-in controller RA8822 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5.(Option) Bulit-in Negative voltage

Pin Assignment

Pin No.	Symbol	Description
1	FRM	Frame Start Signal
2	Vss	Ground
3	VDD	Power supply for logic
4	Vo	Contrast Adjustment
5	/WR	Write Signal
6	/RD	Read Signal
7	A0	Data/ Instruction select signal
8	/CS	Chip Select
9	VEE	Power supply voltage for LCD
10	/RES	Reset Signal
11~18	DB0~DB7	Data bus line
19	BUSY	Busy Signal
20	INT	Interrupt Signal
21	A	LED Power (+)
22	K	LED Power (-)

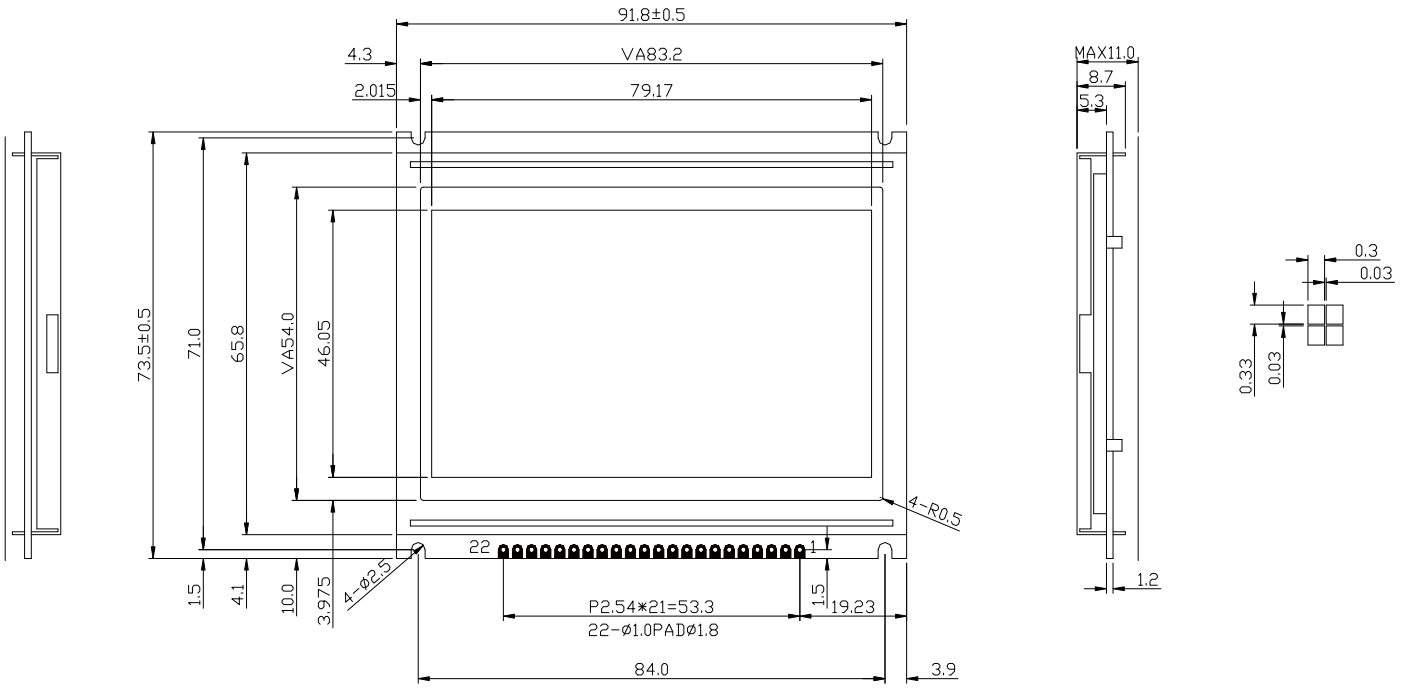
Mechanical Data

Item	Standard Value	Unit
Module Dimension	91.8 x 74.0	mm
Active Area	79.17 x 46.05	mm
Dot Pitch	0.36 x 0.36	mm
Dot Size	0.30 x 0.30	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	13.0	V

Mechanical Drawing



COB240128-02

Graphic 240x128dots

Part number list

SG240128E□□□-□□-□□-□

Feature

1.No bulit-in controller
2.+3V / +5V single power supply
3.Built-in negative voltage
4.EL Backlight

Pin Assignment

Pin No.	Symbol	Description
1	VDD	Power supply for logic
2	FGND	Frame Ground
3	CL2	Segment Shift Clock Signal
4	/DISPOFF	Display OFF
5	FRM	Frame Start Signal
6	CL1	Common Fata Shift Signal
7	Vss	Ground
8	NC	No Connection
9~12	DB0~DB3	Data bus line
14	Vo	Contrast Adjustment
15	Vss	Ground
16	NC	No Connection
17	VEL	Power Supply for EL(+)
18	VELG	Power Supply for EL(-)

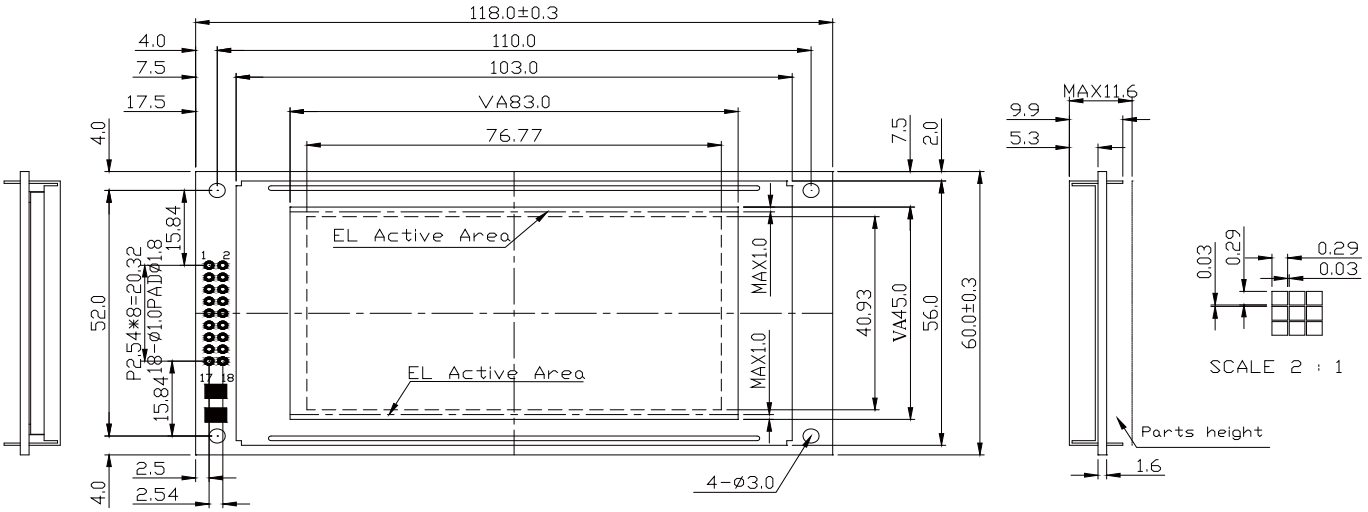
Mechanical Data

Item	Standard Value	Unit
Module Dimension	118.0 x 60.0	mm
Active Area	76.77 x 40.93	mm
Dot Pitch	0.32 x 0.32	mm
Dot Size	0.29 x 0.29	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	18.0	V

Mechanical Drawing



COB240128-03

Graphic 240x128dots

Part number list

BG240128B2□□□□□$
WG240128B-□□□-□□#
SG240128B□□□-□□-□□-□

Feature

1.Built-in controller T6963C or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5.(Option) Bulit-in Negative voltage
6.(Option) +3V single power supply

Pin Assignment

Pin	Symbol	Function
1	Vss	Power supply (GND)
2	Vdd	Power supply(+5V)
3	Vo	Contrast adjustment
4	C/D	Command/data
5	/RD	Data read
6	/WR	Data write
7~14	DB0~7	Data bus line
15	/CE	Chip enable
16	RST	Reset
17	Vee	Negative voltage output
18	MD2	Column No. select (H:32 columns, L:40 columns)
19	FS	Font selection (H: 6x8, L:8x8)
20	NC	No connection

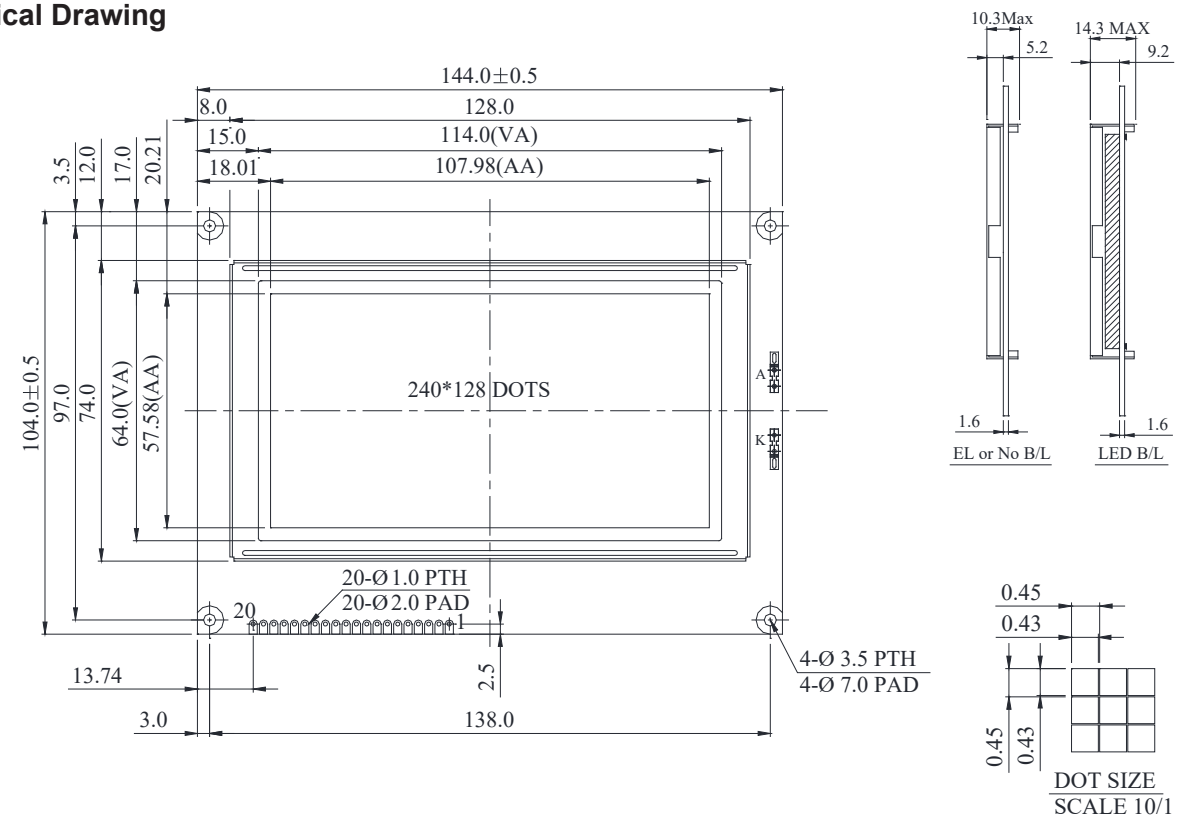
Mechanical Data

Item	Standard Value	Unit
Module Dimension	144.0 x 104.0	mm
Active Area	107.98 x 57.58	mm
Dot Pitch	0.45 x 0.45	mm
Dot Size	0.43 x 0.43	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	19.5	V

Mechanical Drawing



COB240128-04

Graphic 240x128dots

Part number list

WG240128E-□□□-□□#

Feature

1.Built-in controller RA6963 or equivalent
2.Bulit-in oscillation and negative voltage
3.+3V / +5V single power supply
4. 8080 interface

Pin Assignment

Pin	Symbol	Function
1	Vee	Negative voltage output
2	Vss	Power supply (GND)
3	Vdd	Power supply(+5V)
4	Vo	Contrast adjustment
5	/WR	Data write
6	/RD	Data read
7	/CE	Chip enable
8	C/D	Command/data
9	RST	Reset
10~17	DB0~7	Data bus line
18	FS	Font selection (H: 6x8, L:8x8)

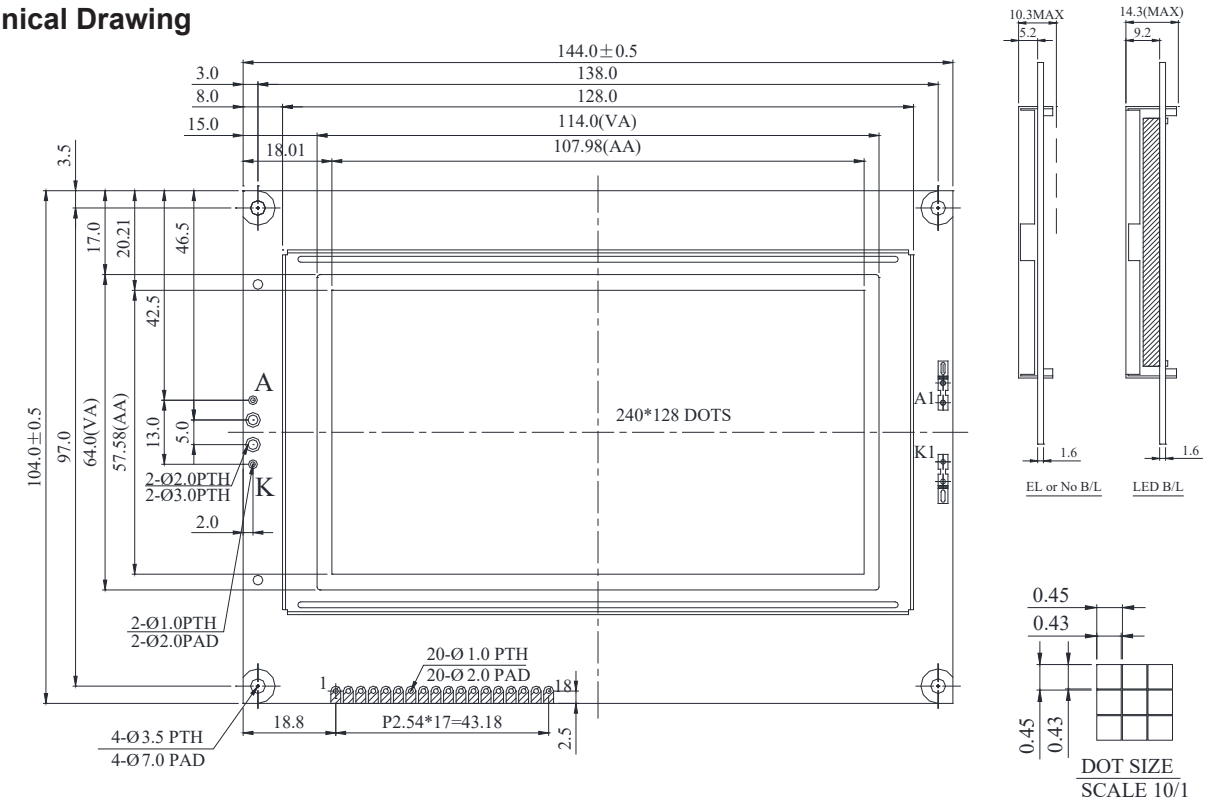
Mechanical Data

Item	Standard Value	Unit
Module Dimension	144.0 x 104.0	mm
Active Area	107.98 x 57.58	mm
Dot Pitch	0.45 x 0.45	mm
Dot Size	0.43 x 0.43	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	19.5	V

Mechanical Drawing



COB240128-05

Graphic 240x128dots

Part number list

BG240128B3□□□□□$

Feature

1.Built-in controller LC7981 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 interface
5.(Option) Bulit-in Negative voltage

Pin Assignment

Pin	Symbol	Function
1	Vss	Power supply (GND)
2	Vdd	Power supply(+5V)
3	Vo	Contrast adjustment
4	RS	Data/Instruction select
5	R/W	Read/Write select
6	E	Enable signal
7~14	DB0~7	Data bus line
15	/CS	Chip select
16	/RST	Reset signal
17	Vee	Negative voltage output
18	A	Power supply for B/L (+)
19	K	Power supply for B/L (GND)
20	NC	No connection

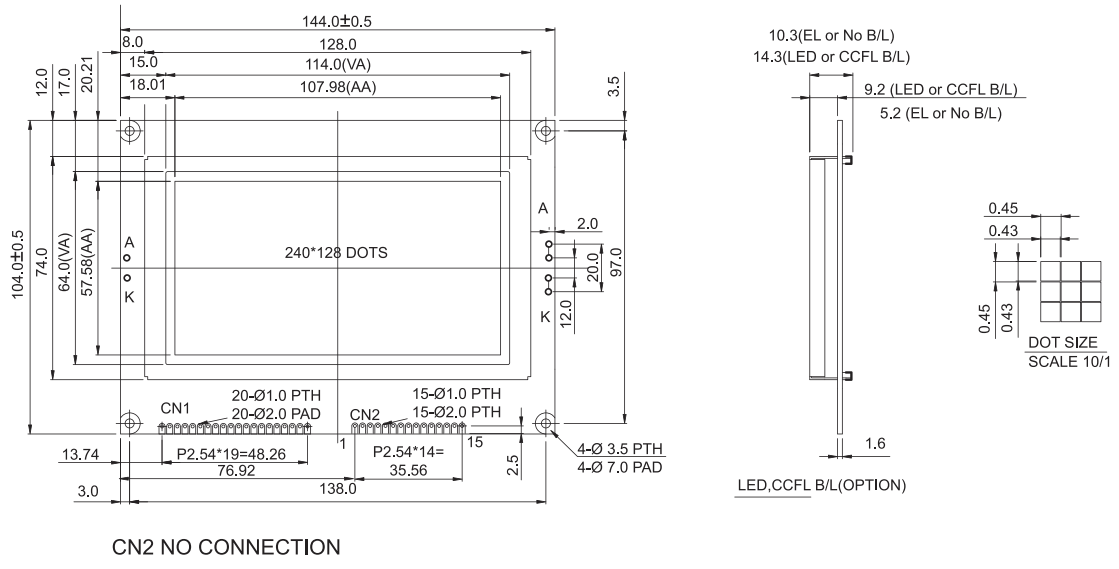
Mechanical Data

Item	Standard Value	Unit
Module Dimension	144.0 x 104.0	mm
Active Area	107.98 x 57.58	mm
Dot Pitch	0.45 x 0.45	mm
Dot Size	0.43 x 0.43	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	18.5	V

Mechanical Drawing



CN2 NO CONNECTION

COB240128-06

Graphic 240x128dots

Part number list

WG240128D-□□□-□□#

Feature

1.Built-in controller LC7981 or equivalent
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4. 6800 interface

Pin Assignment

Pin	Symbol	Function
1	Vss	Power supply (GND)
2	Vdd	Power supply(+5V)
3	Vo	Contrast adjustment
4	RS	Data/Instruction select
5	R/W	Read/Write select
6	E	Enable signal
7~14	DB0~7	Data bus line
15	/CS	Chip select
16	/RST	Reset signal
17	Vee	Negative voltage output
18	NC	No connection
19	A	Power supply for B/L (+)
20	K	Power supply for B/L (GND)

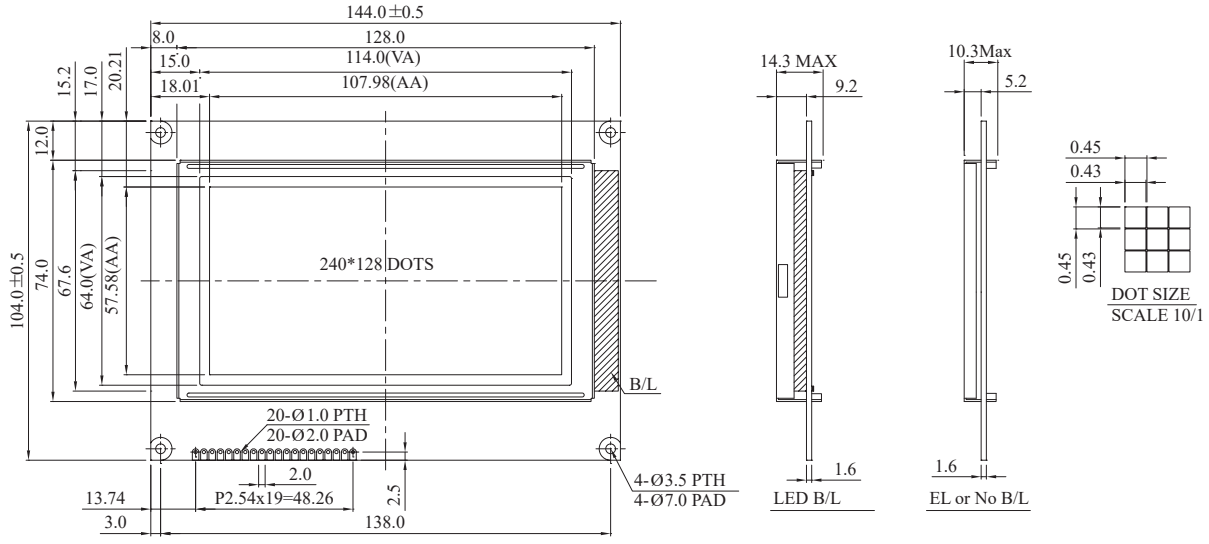
Mechanical Data

Item	Standard Value	Unit
Module Dimension	144.0 x 104.0	mm
Active Area	107.98 x 57.58	mm
Dot Pitch	0.45 x 0.45	mm
Dot Size	0.43 x 0.43	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	19.1	V

Mechanical Drawing



COB240128-07

Graphic 240x128dots

Part number list

BG240128E□□□□□$

Feature

1.No Built-in controller
2.+5V single power supply
3.(Option) Bulit-in Negative voltage

Pin Assignment

Pin	Symbol	Function
1	FLM	First Line Marker
2	CP	Data Shift Clock
3	LP	Data Latch Clock
4	M	AC signal for LCD driver output
5	Vdd	Power supply (+5V)
6	Vss	Power supply (GND)
7	NV(Vee)	Negative voltage output
8~11	DB0~DB3	Data bus line
12	Vo	Contrast adjustment
13	/DispOff	H: Display ON L: Display OFF
14	A	Backlight power supply(+)
15	K	Backlight power supply(GND)

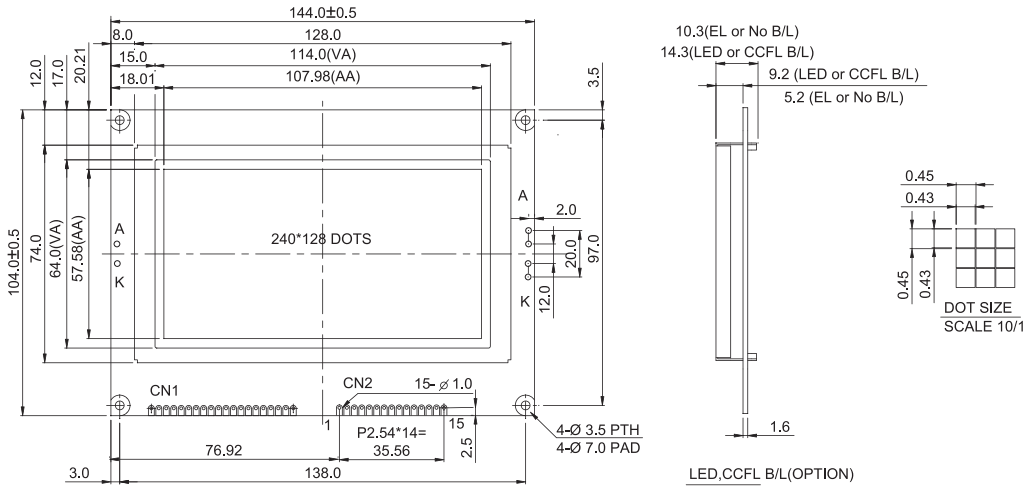
Mechanical Data

Item	Standard Value	Unit
Module Dimension	144.0 x 104.0	mm
Active Area	107.98 x 57.58	mm
Dot Pitch	0.45 x 0.45	mm
Dot Size	0.43 x 0.43	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	18.5	V

Mechanical Drawing



CN1 NO CONNECTION

COB240128-08

Graphic 240x128dots

Part number list

BG240128E1□□□□□$

Feature

1.No Built-in controller
2.+5V single power supply
3.(Option) Bulit-in Negative voltage

Pin Assignment

Pin	Symbol	Function
1	FLM	First Line Marker
2	CP	Data Shift Clock
3	LP	Data Latch Clock
4	M	AC signal for LCD driver output
5	Vdd	Power supply (+5V)
6	Vss	Power supply (GND)
7	Vee	Negative voltage output
8~11	DB0~DB3	Data bus line
12	Vo	Contrast adjustment
13	NC	No connection
14	A	Backlight power supply(+)
15	K	Backlight power supply(GND)

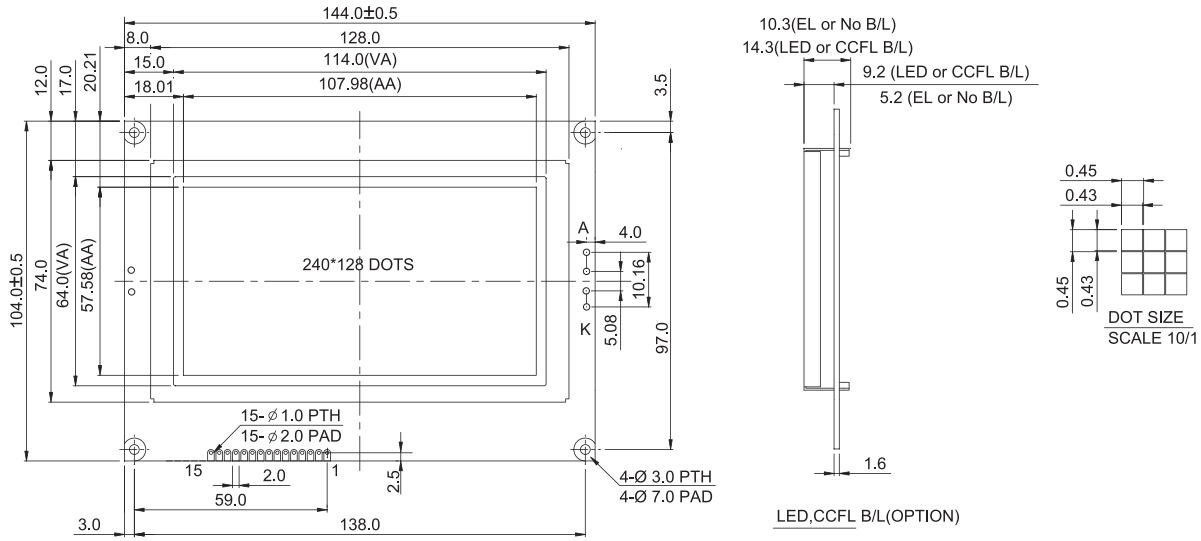
Mechanical Data

Item	Standard Value	Unit
Module Dimension	144.0 x 104.0	mm
Active Area	107.98 x 57.58	mm
Dot Pitch	0.45 x 0.45	mm
Dot Size	0.43 x 0.43	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	18.5	V

Mechanical Drawing



COB240128-09

Graphic 240x128dots

Part number list

SG240128D□□□-□□-□□-□

Feature

1.No Built-in controller
2.+3V / +5V single power supply
3.(Option) Bulit-in Negative voltage

Pin Assignment

Pin No.	Symbol	Description
1	FRM	Frame Start Signal
2	M	Control Signal for AC driving
3	CL1	Common Fata Shift Signal
4	CL2	Segment Shift Clock Signal
5	VDD	Power supply for logic
6	Vss	Ground
7	VEE	Power supply voltage for LCD
8~11	DB0~DB3	Data bus line
12	Vo	Contrast Adjustment
13	NC	No Connection

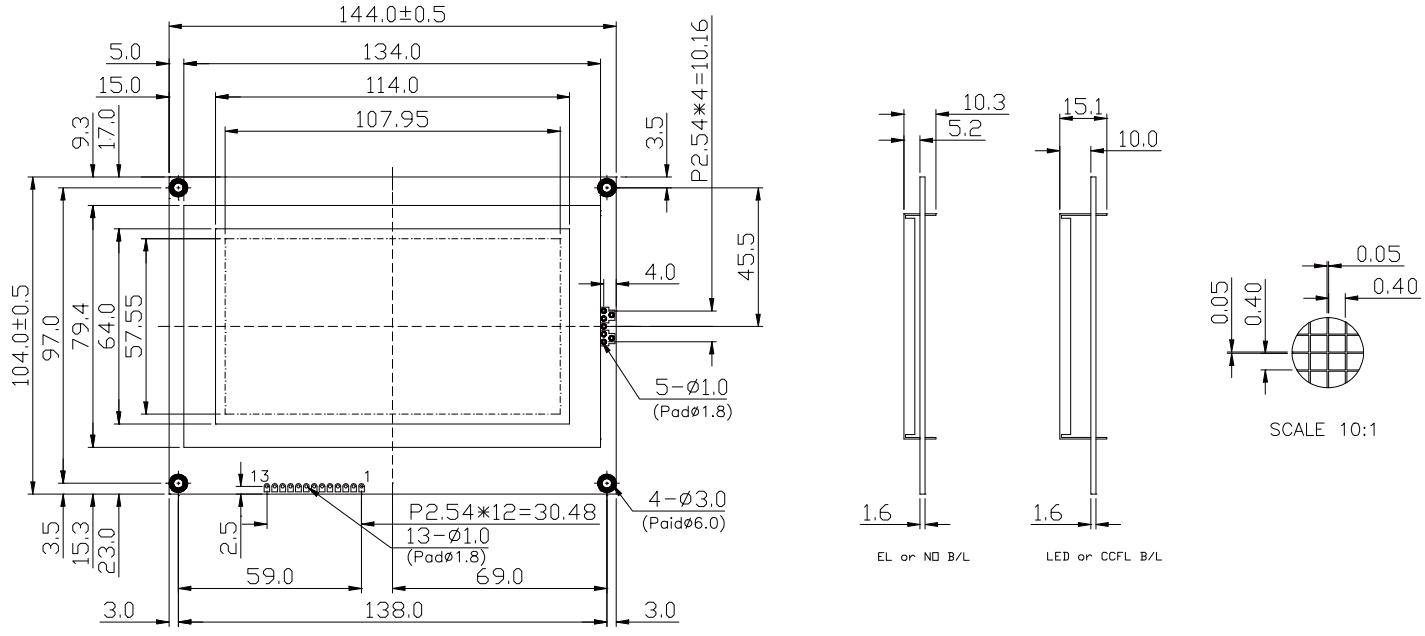
Mechanical Data

Item	Standard Value	Unit
Module Dimension	144.0 x 104.0	mm
Active Area	107.98 x 57.58	mm
Dot Pitch	0.45 x 0.45	mm
Dot Size	0.43 x 0.43	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	18.0	V

Mechanical Drawing



COB240128-10

Graphic 240x128dots

Part number list

BG240128A□□□□□$
WG240128A-□□□-□□#
SG240128A□□□-□□-□□-□

Feature

1.Built-in controller T6963C or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 8080 interface
5.(Option) Bulit-in Negative voltage
6.(Option) +3V single power supply

Pin Assignment

Pin	Symbol	Function
1	FGND	Frame GND
2	Vss	Power supply(GND)
3	Vdd	Power supply for logic(+5V)
4	Vo	Contrast adjustment
5	/WR	Data write
6	/RD	Data read
7	/CE	Chip enable
8	C/D	Code/Data
9	NC/Vee	No connection/ Negative voltage output
10	/RST	Controller reset
11~18	DB0-7	Data bus line
19	FS	Font selection (H: 6x8, L:8x8)
20	RV	Reverse (H: reverse L: normal)

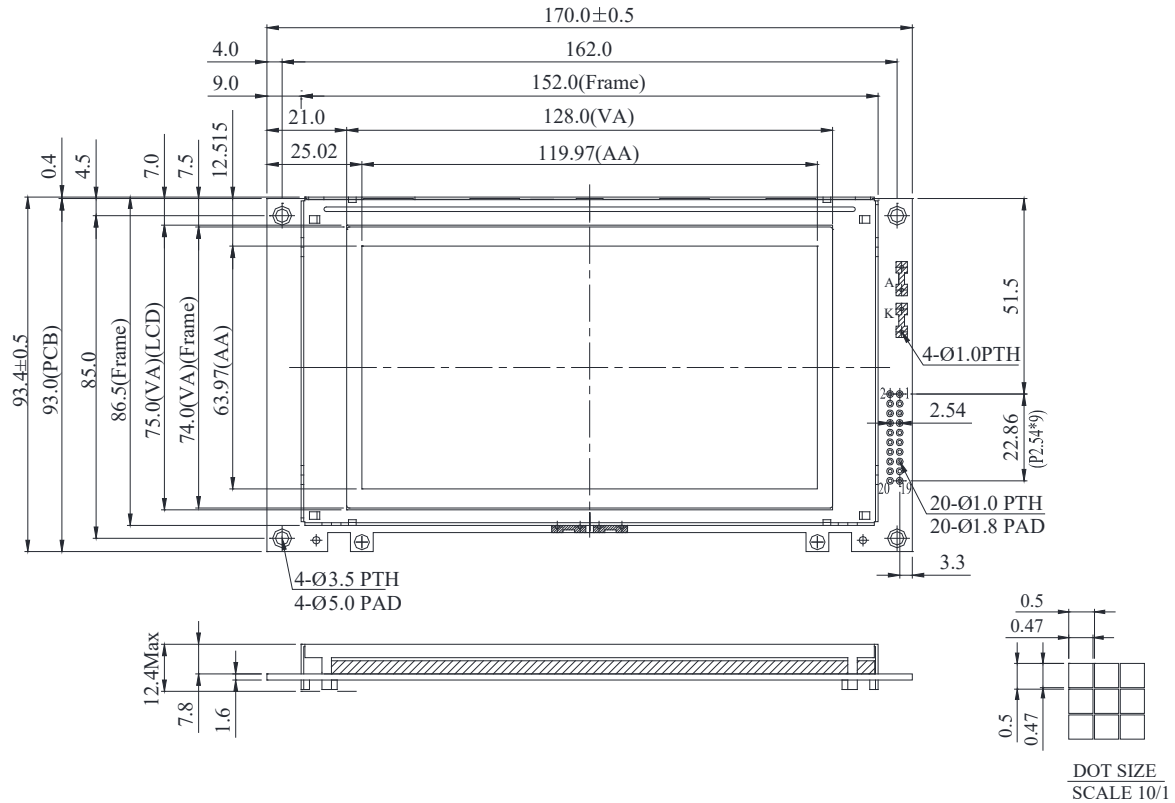
Mechanical Data

Item	Standard Value	Unit
Module Dimension	144.0 x 93.4	mm
Active Area	119.97 x 63.97	mm
Dot Pitch	0.50 x 0.50	mm
Dot Size	0.47 x 0.47	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	18.7	V

Mechanical Drawing



COB240128-11

Graphic 240x128dots

Part number list

BG240128G□□□□□$

Feature

1.Built-in controller RA8835 or equivalent
2.Bulit-in oscillation
3.+5V single power supply
4. 6800 / 8080 interface
5.(Option) Bulit-in Negative voltage

Pin Assignment

Pin	Symbol	Function
1	/RES	Reset signal
2	/RD	Data read
3	/WR	Data write
4	SEL2	8080 or 6800 inteerface selet
5	SEL1	8080 or 6800 inteerface selet
6	/CS	Chip select
7	Ao	Data type select
8~15	D0~D7	Data bus line
16	VDD	Power supply
17	VSS	Power supply (GND)
18	Vo	Contrast adjustment
19	VLC	Negative Voltage output
20	FGND	Frame GND

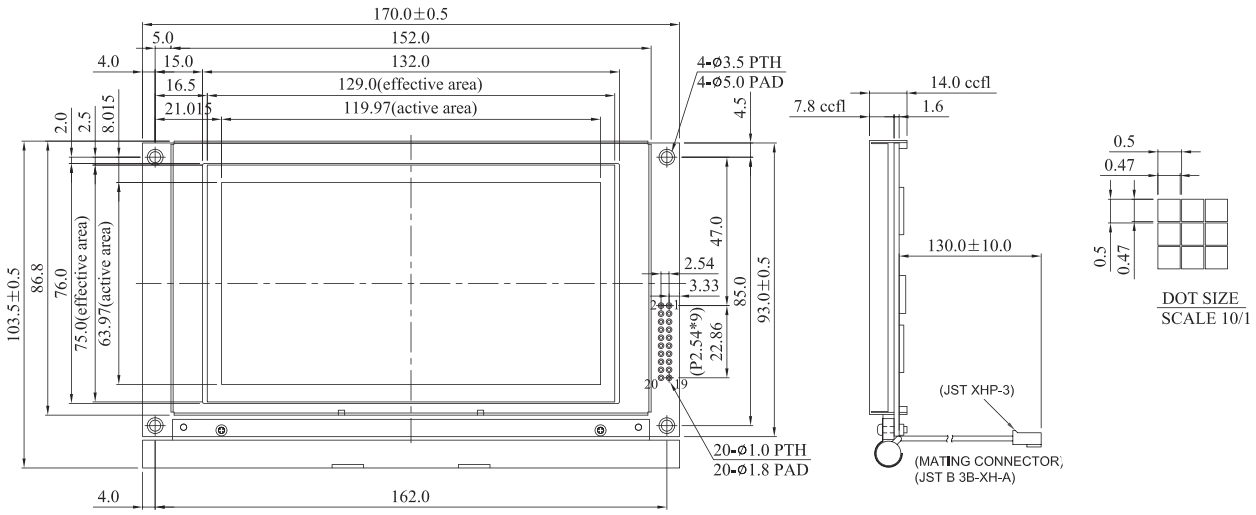
Mechanical Data

Item	Standard Value	Unit
Module Dimension	170.0 x 103.5	mm
Active Area	119.97 x 63.97	mm
Dot Pitch	0.50 x 0.50	mm
Dot Size	0.47 x 0.47	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	18.8	V

Mechanical Drawing



COG240128-01

Graphic 240x128dots

Part number list

WO240128A-□□□-□□#

Feature

1.Bulit-in controller UC1608
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 / SPI interface

Pin Assignment

Pin No.	Symbol	Description
1	VB1-	DC/DC voltage converter.
2	VB1+	DC/DC voltage converter.
3	VB0-	DC/DC voltage converter.
4	VB0+	DC/DC voltage converter.
5	V_{LCD}	Bias voltage levels for LCD driving
6	VBIAS	Contrast Adjustment
7	V_{SS}	Ground
8	V_{DD}	Power supply for logic
9	D7	Data bus line
10	D6	Data bus line
11	D5	Data bus line
12	D4	Data bus line
13	D3	Data bus line
14	D2	Data bus line
15	D1	Data bus line
16	D0	Data bus line
17	WR1	8080 family: Read signal, 6800 family: Enable clock
18	WR0	8080 family: Write signal, 6800 family: Read/Write signal
19	CD	Data/ Instruction select signal
20	RST	Controller reset signal, Active Low
21	CS	Chip select input pins
22	BM0	Interface selection: "00" : SPI mode , "10" : 8080 mode, "11" : 6800 mode
23	BM1	

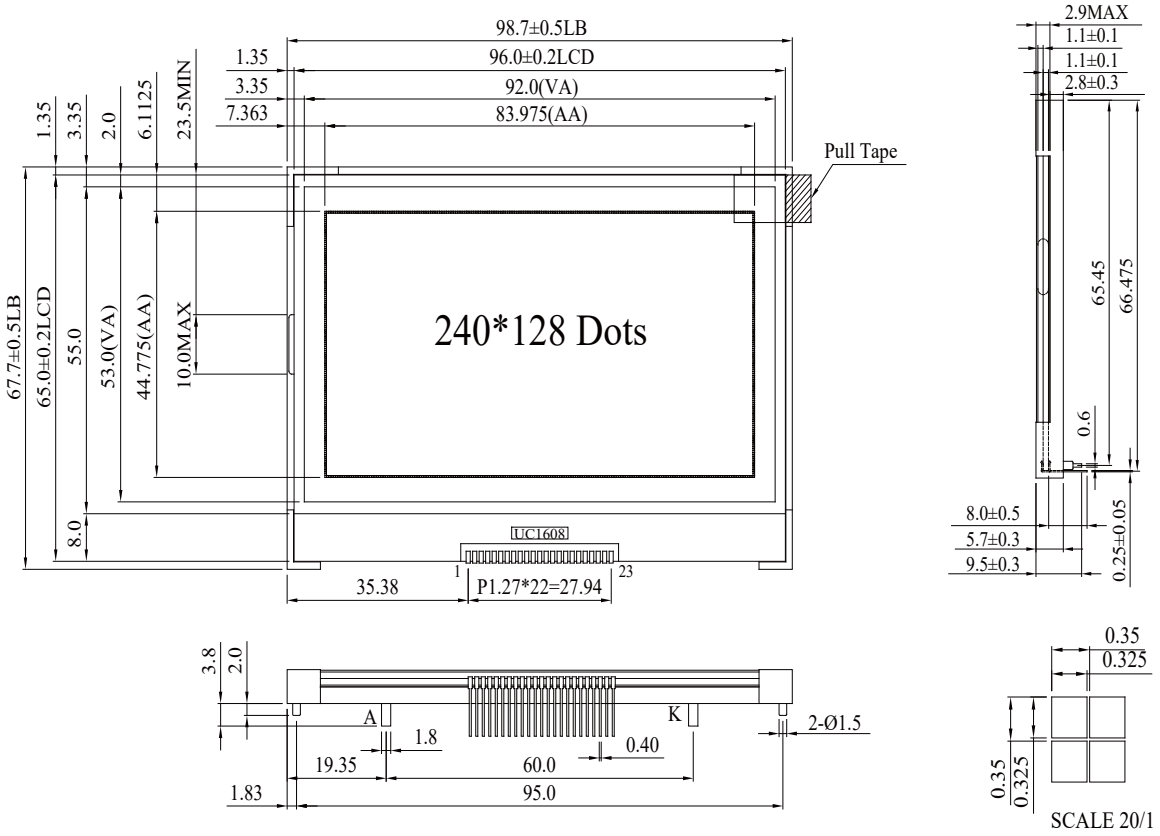
Mechanical Data

Item	Standard Value	Unit
Module Dimension	98.7 x 67.7	mm
Active Area	83.975 x 44.775	mm
Dot Pitch	0.35 x 0.35	mm
Dot Size	0.325 x 0.325	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vo-Vss	15.5	V

Mechanical Drawing



TAB240128-01

Graphic 240x128dots

Part number list

BP240128B2□□□□$

Feature

1.Bulit-in controller UC1608
2.Bulit-in oscillation and voltage regulator
3.+3V single power supply
4.6800 / 8080 interface
5.FSTN transflective

Pin Assignment

Pin	Symbol	Function
1	Res	Reset Signal
2	CS	Chip Select
3	RS	Data instruction select
4	WR	Data write
5	RD	Data read
6~13	DB0~DB7	Data bus
14	VDD	Power supply
15	VSS	Power supply (GND)
16	NC	NO connection
17	NC	NO connection
18	NC	NO connection
19	LED+	Power supply for B/L(+)
20	LED-	Power supply for B/L(GND)

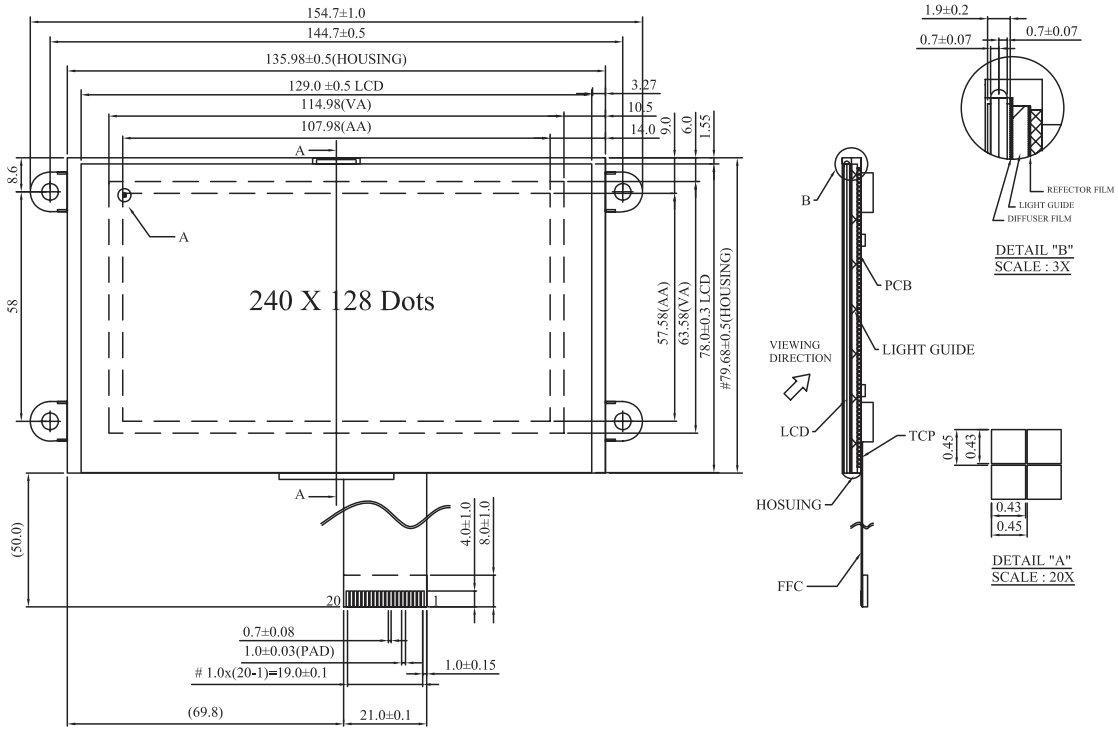
Mechanical Data

Item	Standard Value	Unit
Module Dimension	157.4 x 79.68	mm
Active Area	107.98 x 57.58	mm
Dot Pitch	0.45 x 0.45	mm
Dot Size	0.43 x 0.43	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	V0-Vss	15.0	V

Mechanical Drawing



COG240160-01

Graphic 240x160dots

Part number list

WO240160A-□□□-□□#

Feature

1.Bulit-in controller ST7529
2.Bulit-in oscillation and voltage regulator
3.+3.3V single power supply
4.6800 / 8080 interface

Pin Assignment

Pin No.	Symbol	Description
1	V_{DD}	Power supply for logic
2	V_{SS}	Ground
3	/CS	Chip select input pins
4	RS	Data/ Instruction select signal
5	/WR	Data write. Write data into LCD Controller
6	/RD	Data read. Read data from LCD Controller
7	DB0	Data bus line
8	DB1	Data bus line
9	DB2	Data bus line
10	DB3	Data bus line
11	DB4	Data bus line
12	DB5	Data bus line
13	DB6	Data bus line
14	DB7	Data bus line
15	/RST	Controller reset signal, Active Low
16	BLA	Power supply for B/L +

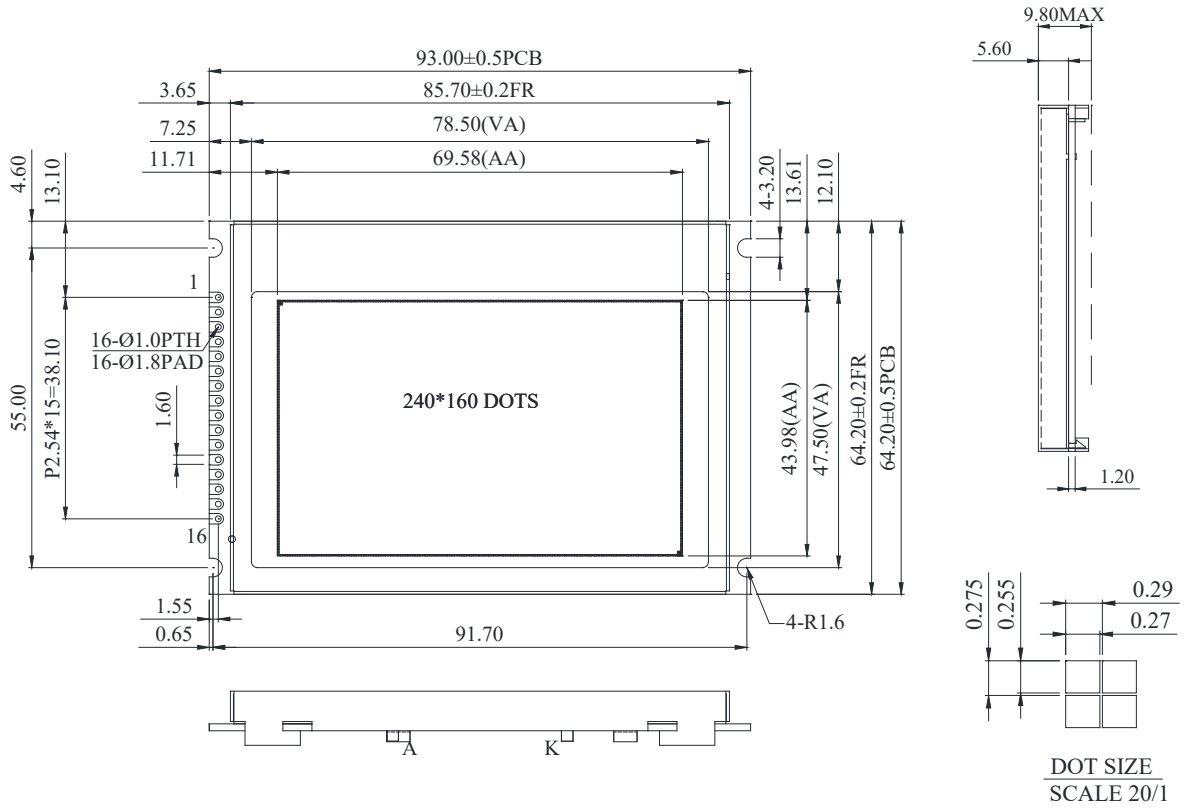
Mechanical Data

Item	Standard Value	Unit
Module Dimension	93.4 x 64.2	mm
Active Area	69.58 x 43.98	mm
Dot Pitch	0.29 x 0.275	mm
Dot Size	0.27 x 0.255	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	Vo-Vss	14.5	V

Mechanical Drawing



TAB240160-01

Graphic 240x160dots

Part number list

BP240160B□□□□$

Feature

1.Bulit-in controller RA8835 or or equivalent
2.Bulit-in oscillation and positive voltage
3.+3V /+5V single power supply
4.6800 / 8080 interface
5.FSTN LCD
6.(Option) Touch panel

Pin Assignment

Pin	Symbol	Function
1	/RST	Reset signal
2	/RD	80s:read signal/68s:enable signal (E)
3	/WR	80s:write signal/68s: R/W signal
4	/CS	Chip select
5	Ao	Data latch pulse
6~13	DB0-7	Data bus line
14	Vdd	Power supply (+3V ~ +5V)
15	Vss	Power supply (GND)
16	Vlcd	Positive voltage output (+26V)
17	Vadj	Contrast adjustment (Vadj - Vss)
18	BL_on	BL on/off signal (H: on L: off)
19	A	Power supply for B/L +
20	K	Power supply for B/L -
21	Y1	Touch panel upper signal (Y axis)
22	X1	Touch panel right signal (X axis)
23	Y2	Touch panel lower signal (Y axis)
24	X2	Touch panel left signal (X axis)

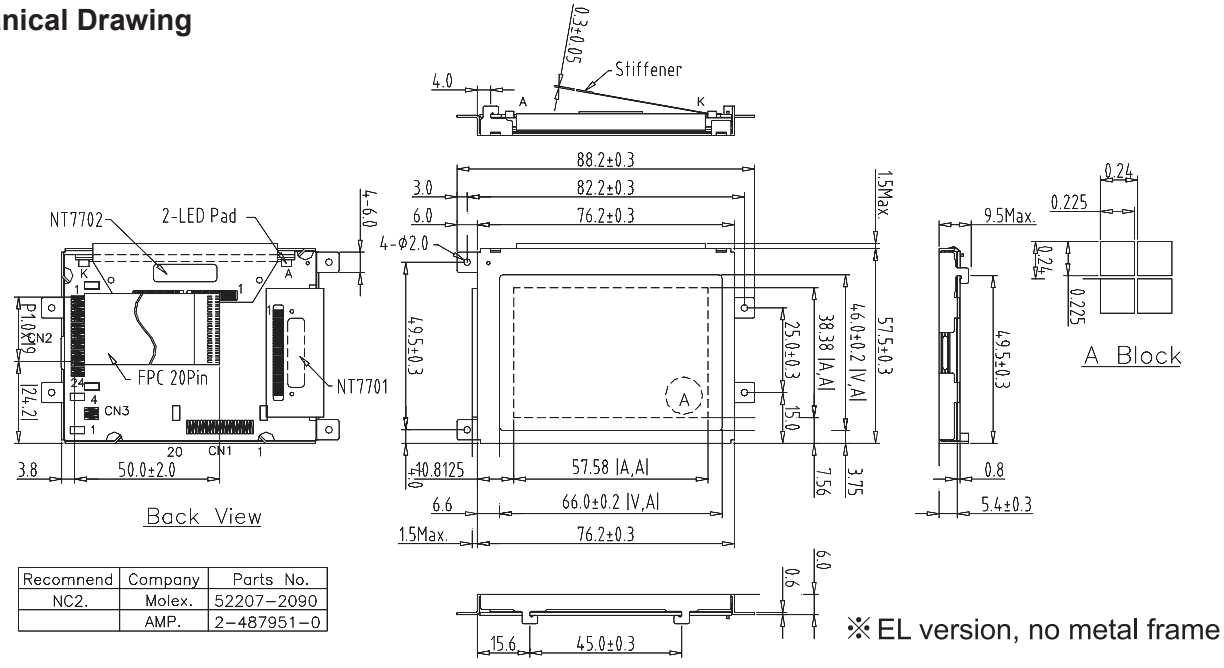
Mechanical Data

Item	Standard Value	Unit
Module Dimension	88.2 x 59.0	mm
Active Area	57.58 x 38.38	mm
Dot Pitch	0.24 x 0.24	mm
Dot Size	0.225 x 0.225	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vadj-Vss	19.5	V

Mechanical Drawing



Recomnend	Company	Parts No.
NC2.	Molex.	52207-2090
	AMP.	2-487951-0

※EL version, no metal frame

TAB240160-02

Graphic 240x160dots

Part number list

BP240160C□□□□$

Feature

1.No Built-in controller
2.+3V / +5V single power supply
3.Built-in positive voltage
4.FSTN LCD
5.(Option) Touch panel

Pin Assignment

Pin	Symbol	Function
1~4	D0~D3	Data bus line
5	/DISPOFF	Display off control
6	FLM	First Line Marker
7	NC	No connection
8	LP	Data latch clock
9	CP	Data shift clock
10	Vdd	Power supply (+3V ~ +5V)
11	Vss	Power supply (GND)
12	Vlcd	Positive voltage output (+27V)
13	Vadj	Contrast adjustment (Vadj - Vss)
14	LED/EL_on	LED/EL on/off signal (H: on L: off)
15	Y1	Touch panel upper signal (Y axis)
16	X1	Touch panel right signal (X axis)
17	Y2	Touch panel lower signal (Y axis)
18	X2	Touch panel left signal (X axis)
19~20	BL1- BL2	Power supply for LED & EL B/L (when EL inverter not built-in)

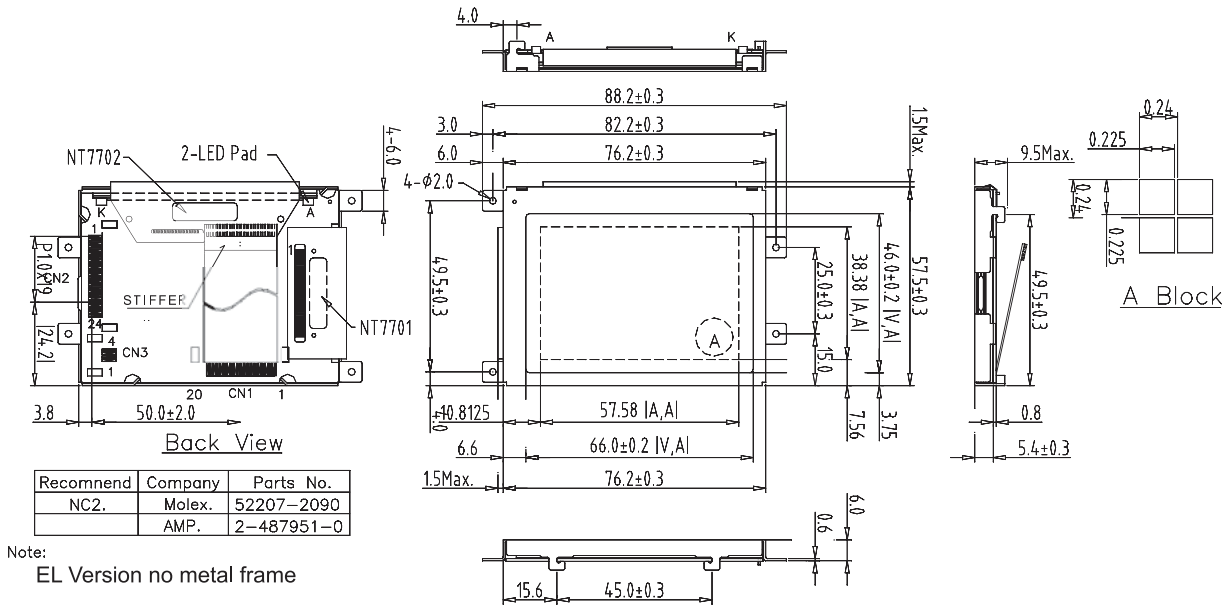
Mechanical Data

Item	Standard Value	Unit
Module Dimension	88.2 x 59.0	mm
Active Area	57.58 x 38.38	mm
Dot Pitch	0.24 x 0.24	mm
Dot Size	0.225 x 0.225	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vadj-Vss	19.1	V

Mechanical Drawing



Recomnend	Company	Parts No.
NC2.	Molex.	52207-2090
	AMP.	2-487951-0

Note:
EL Version no metal frame

COB25664-01

Graphic 256x64dots

Part number list

SG25664A□□□-□□-□□-□

Feature

1.Bulit-in controller ST7920
2.Bulit-in oscillation and negative voltage
3.+5V single power supply
4.6800 interface
5.Built-in Chinese font

Pin Assignment

Pin No.	Symbol	Description
1	Vss	Ground
2	VDD	Power supply for logic
3	Vo	Contrast Adjustment
4	RS	Read Select
5	R/W	Read / Write
6	E1	Enable Signal for IC1
7	E2	Enable Signal for IC2
8~15	DB0~DB7	Data bus line
16	A	LED Power (+)
17	K	LED Power (-)
18	NC	No Connection
19	NC	No Connection
20	NC	No Connection

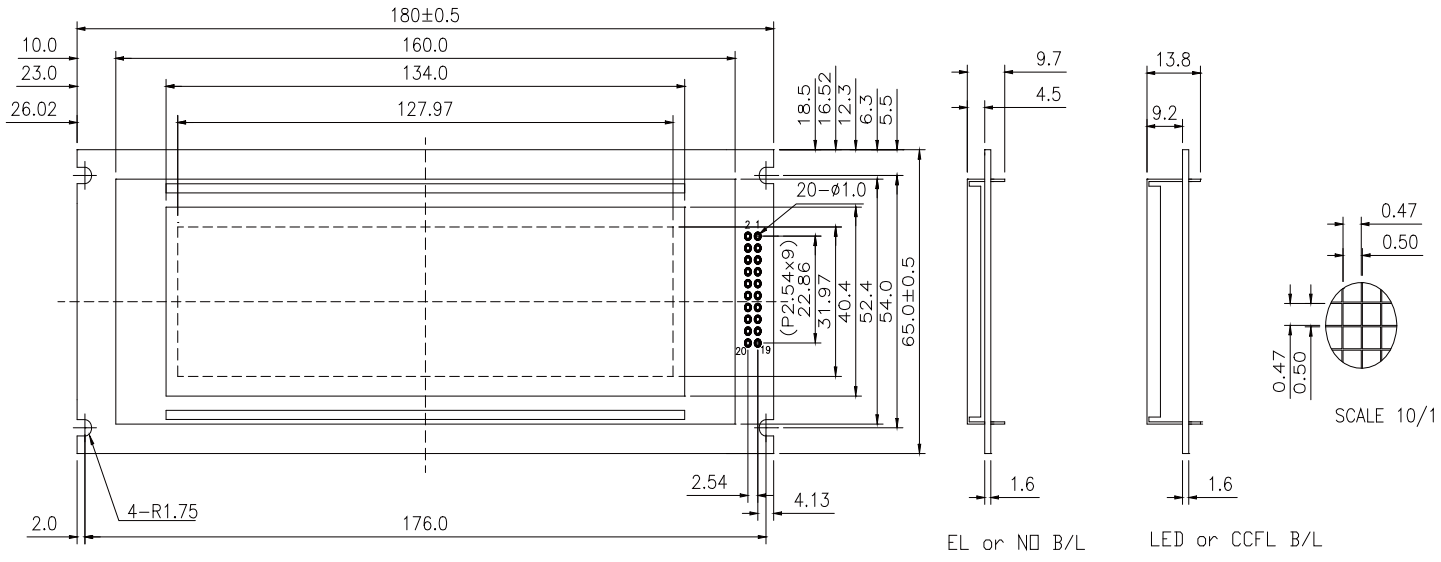
Mechanical Data

Item	Standard Value	Unit
Module Dimension	180.0 x 65.0	mm
Active Area	127.97 x 31.97	mm
Dot Pitch	0.50 x 0.50	mm
Dot Size	0.47 x 0.47	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	6.0	V

Mechanical Drawing



COB320240-01

Graphic 320x240dots

Part number list

SG320240E□□□-□□-□□-□

Feature

1.Diagonal 3.8 inch
2.No Built-in controller
3.+3.3V single power supply
4.Bulit-in Negative voltage
5.Bulit-in Electric Volume
6.FFC

Pin Assignment

Pin No.	Symbol	Description
1	VDIN	Electric Volume data input
2	VCLK	Electric Volume data input
3	VSTRB	Electric Volume data input
4	VDD	Power supply for logic
5	FLM	Frame Start Signal
6	VSS	Ground
7	CL1	Common Data Shift Signal
8	VSS	Ground
9	M	Control Signal for AC driving
10	/DISPOFF	Display OFF
11	CL2	Segment Shift Resister Signal
12~13	NC	No Connection
14~17	DB0~DB7	Data bus line
18~22	FGND	Frame Ground
23	VDD	Power supply for logic
24	/EL_ON	EL/LED Backlight Signal

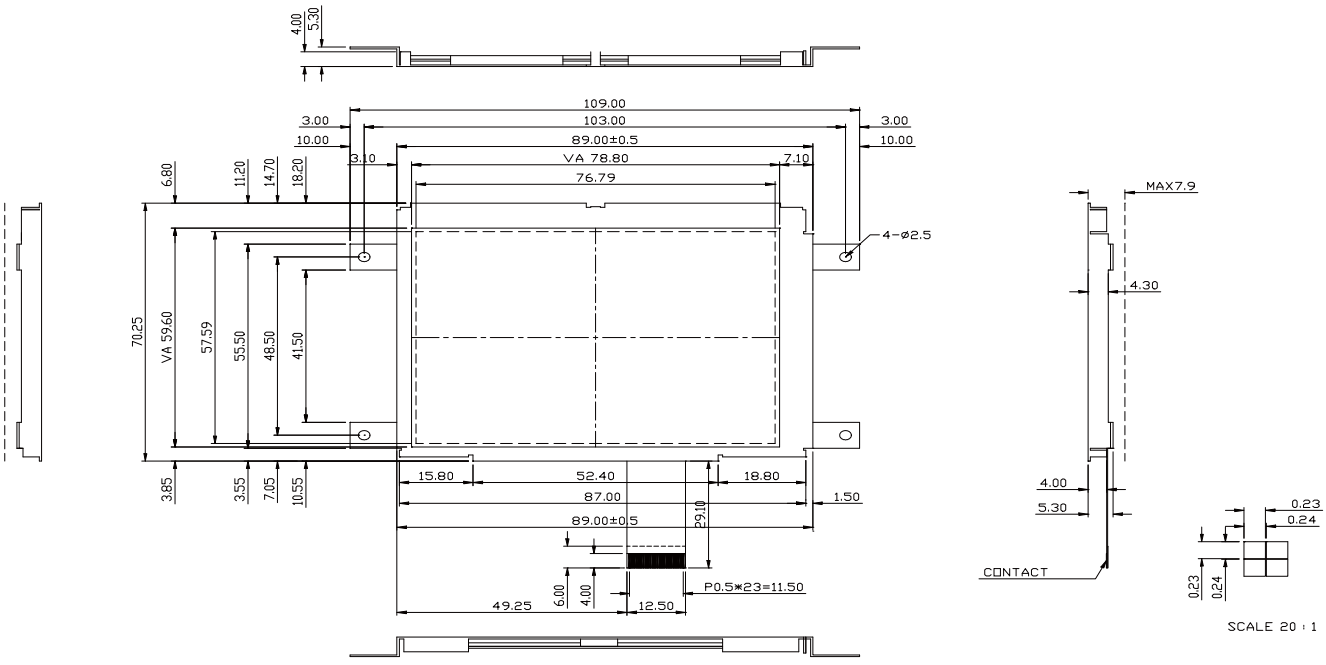
Mechanical Data

Item	Standard Value	Unit
Module Dimension	109.0 x 70.25	mm
Active Area	76.79 x 57.59	mm
Dot Pitch	0.50 x 0.50	mm
Dot Size	0.47 x 0.47	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3.3	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	21.0	V

Mechanical Drawing



COB320240-02

Graphic 320x240dots

Part number list

WG320240O-□□□-□□#

Feature

1.Diagonal 4.7 inch
2.Bulit-in controller RA8835
3.Bulit-in oscillation and negative voltage
4.+5V single power supply
5.6800/8080 interface
6.Pin header
7.(Option) No bulit-in controller

Pin Assignment

Pin No.	Symbol	Description
1	GND	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	/WR	Data write. Write data into LCD Controller
5	/RD	Data read. Read data from LCD Controller
6	CS	Chip select input pins
7	A0	Data/ Instruction select signal
8	RES	Controller reset signal, Active Low
9~16	DB0~DB7	Data bus line
17	NC	No connection
18	V_{EE}	Negative Voltage Output
19	A	Power supply for B/L +
20	K	Power supply for B/L -

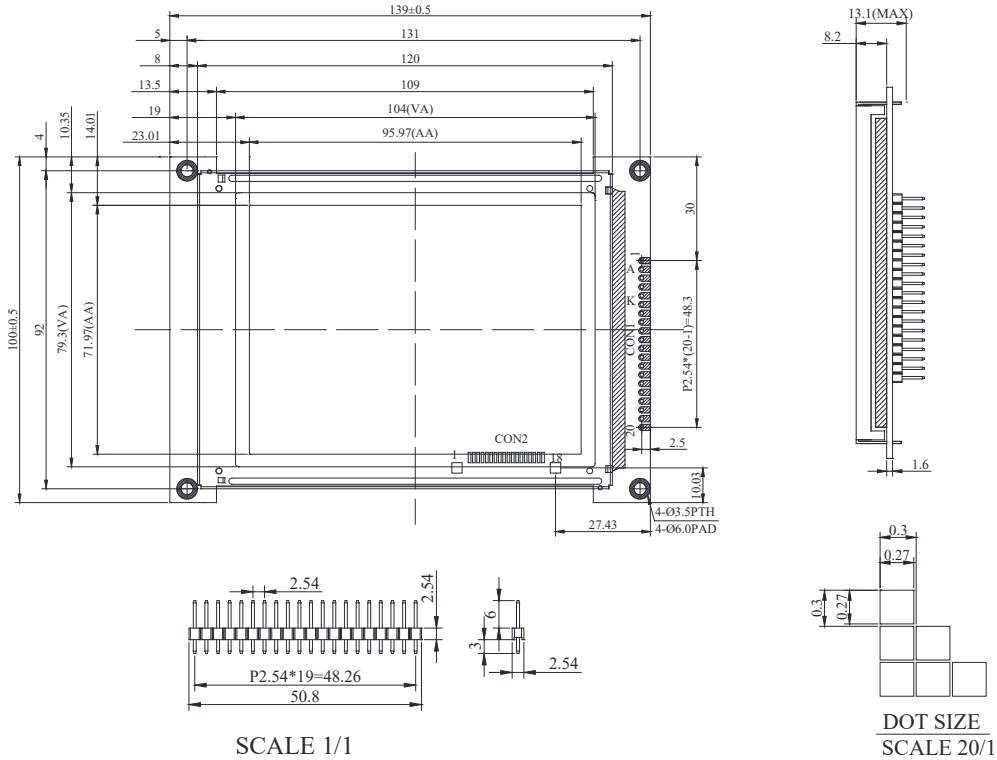
Mechanical Data

Item	Standard Value	Unit
Module Dimension	139.0 x 100.0	mm
Active Area	95.97 x 71.97	mm
Dot Pitch	0.30 x 0.30	mm
Dot Size	0.27 x 0.27	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	21.6	V

Mechanical Drawing



SCALE 1/1

DOT SIZE
SCALE 20/1

COB320240-03

Graphic 320x240dots

Part number list

WG320240D0-□□□-□□#

Feature

1.Diagonal 4.7 inch
2.Bulit-in controller RA8835
3.Bulit-in oscillation and negative voltage
4.+5V single power supply
5.6800/8080 interface
6.(Option)FFC connector

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	/WR	Data write. Write data into LCD Controller
6	/RD	Data read. Read data from LCD Controller
7~14	DB0~DB7	Data bus line
15	CS	Chip select input pins
16	RES	Controller reset signal, Active Low
17	V_{EE}	Negative Voltage Output
18	DISPOFF	Display off H:ON L:OFF
19	A	Power supply for B/L +
20	K	Power supply for B/L -

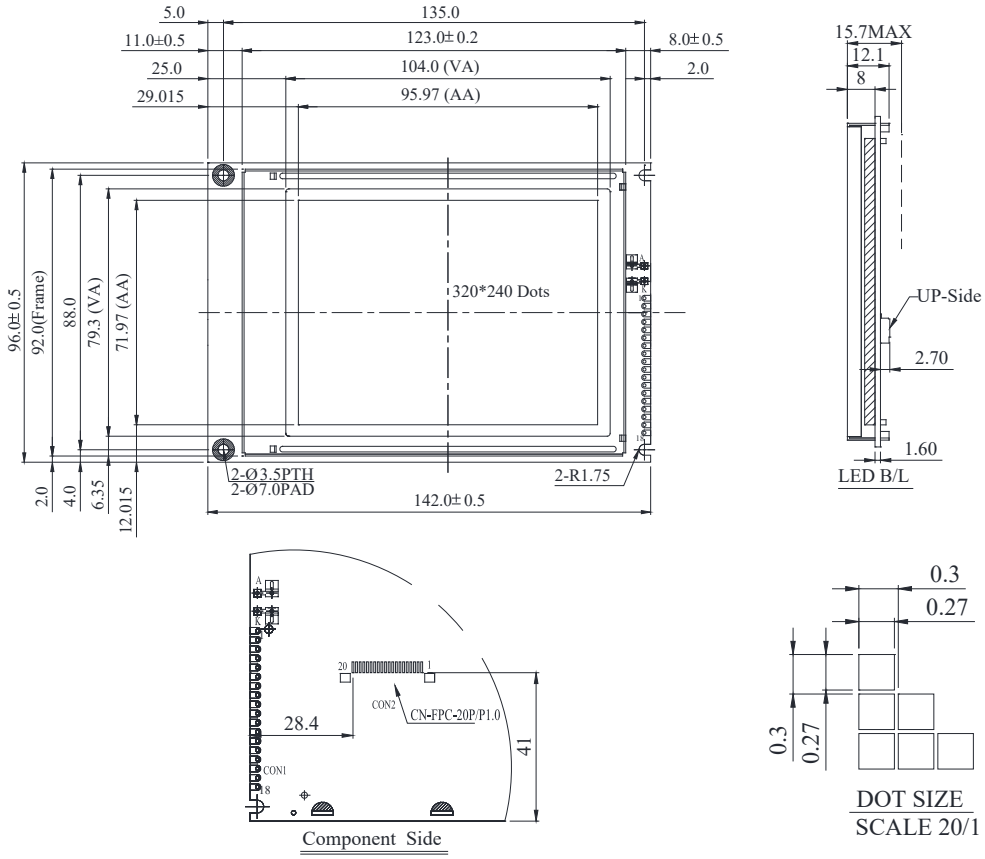
Mechanical Data

Item	Standard Value	Unit
Module Dimension	142.0 x 96.0	mm
Active Area	95.97 x 71.97	mm
Dot Pitch	0.30 x 0.30	mm
Dot Size	0.27 x 0.27	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	21.6	V

Mechanical Drawing



COB320240-04

Graphic 320x240dots

Part number list

WG320240D1-□□□-□□#

BG320240C□□□□□$

Feature

1.Diagonal 4.7 inch
2.No Built-in controller
3.+5V single power supply
4.Bulit-in Negative voltage
5.FFC connector
6.(Option) +3V single power supply

Pin Assignment

Pin	Symbol	Function
1	FLM	First line marker
2	M	Frame reverse signal
3	LP	Data latch
4	CP	Data shift
5	/DISPOFF	Display off signal (H:on L:off)
6~9	DB0-3	Data bus line
10	Vdd	+5V(+3V option)
11	Vss	Power supply (GND)
12	Vee	Negative voltage output
13	Vo	Contrast adjustment
14	FGND	Frame Ground

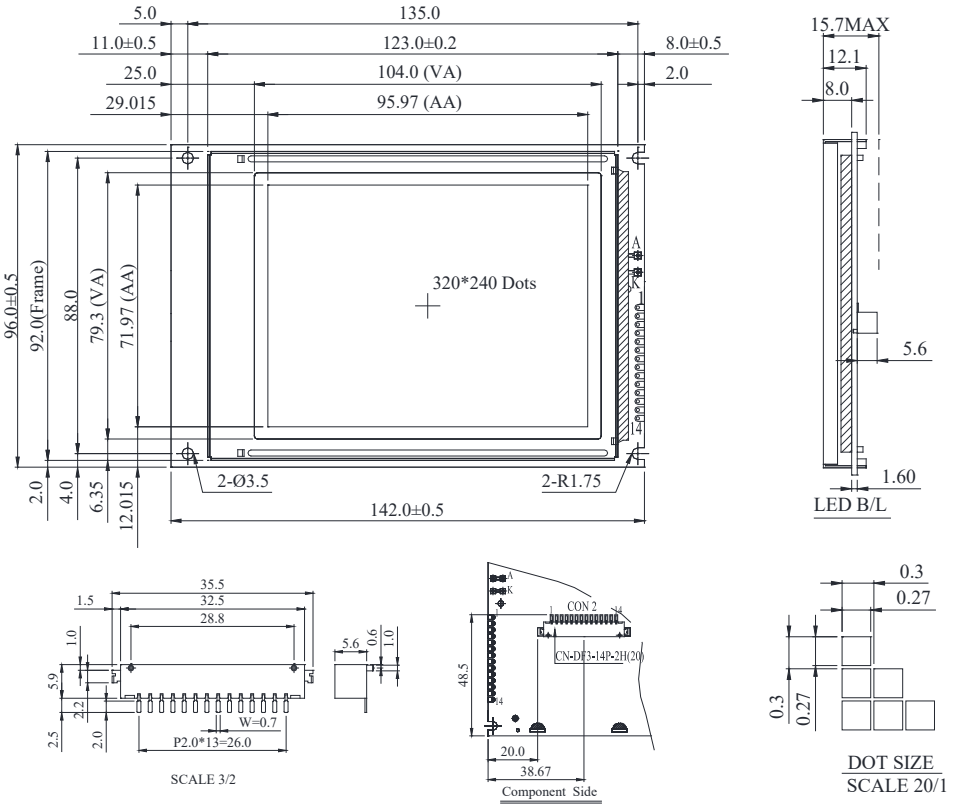
Mechanical Data

Item	Standard Value	Unit
Module Dimension	142.0 x 96.0	mm
Active Area	95.97 x 71.97	mm
Dot Pitch	0.30 x 0.30	mm
Dot Size	0.27 x 0.27	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	22.9	V

Mechanical Drawing



COB320240-05

Graphic 320x240dots

Part number list

BG320240D□□□□□$

Feature

1.Diagonal 4.7 inch
2.No Built-in controller
3.+5V single power supply

Pin Assignment

Pin	Symbol	Function
1	FLM	First line marker
2	M	Alternate signal input pin for LCD driving
3	LP	Data latch
4	CP	Data shift
5	/DISPOFF	Display off signal (H:on L:off)
6~9	DB0-3	Data bus line
10	Vdd	Power supply for Logic
11	Vss	Ground
12	Vee	Input of negative power
13	Vo	Driving voltage for LCD
14	FGND	Frame Ground

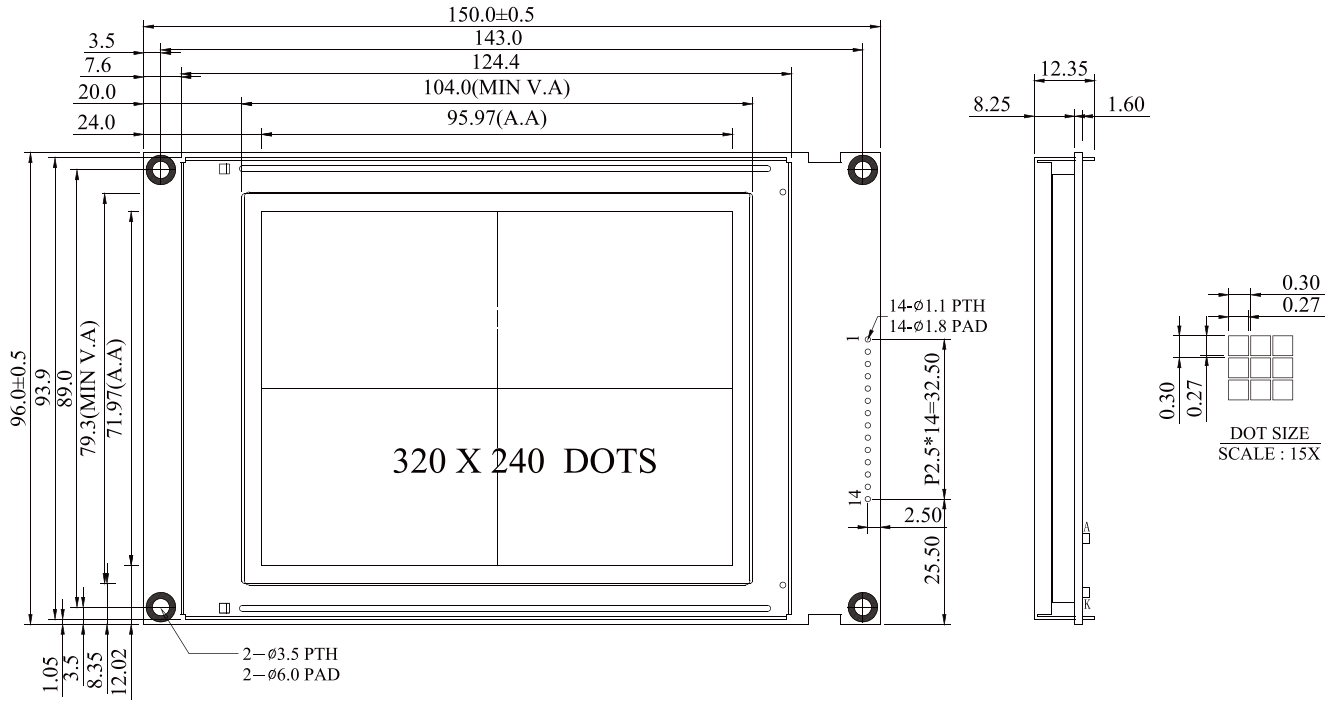
Mechanical Data

Item	Standard Value	Unit
Module Dimension	150.0 x 96.0	mm
Active Area	95.97 x 71.97	mm
Dot Pitch	0.30 x 0.30	mm
Dot Size	0.27 x 0.27	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	20.8	V

Mechanical Drawing



COB320240-06

Graphic 320x240dots

Part number list

BG320240B□□□□□$

BG320240B1□□□□□$

Feature

1.Diagonal 5.7 inch
2.Bulit-in controller S1D13700 (BG320240B)
  Bulit-in controller RA8835 (BG320240B1)
3.Bulit-in oscillation
4.+5V single power supply
5.6800/8080 interface
6.(Option) Built-in negative voltage
7.(Option) +3V single power supply

Pin Assignment

Pin	Symbol	Function
1	Vss	Power supply (GND)
2	Vdd	+5V(+3V option)
3	Vo	Contrast Adjustment
4	E	Enable signal
5	R/W	Read /write signal
6	Ao	Data / Instruction
7~14	DB0-7	Data bus line
15	/CS	Chip select
16	/RST	Reset signal
17	Vee	Negative voltage output
18	FGND	Frame Ground
19	NC	No connection
20	/Display off	Display off

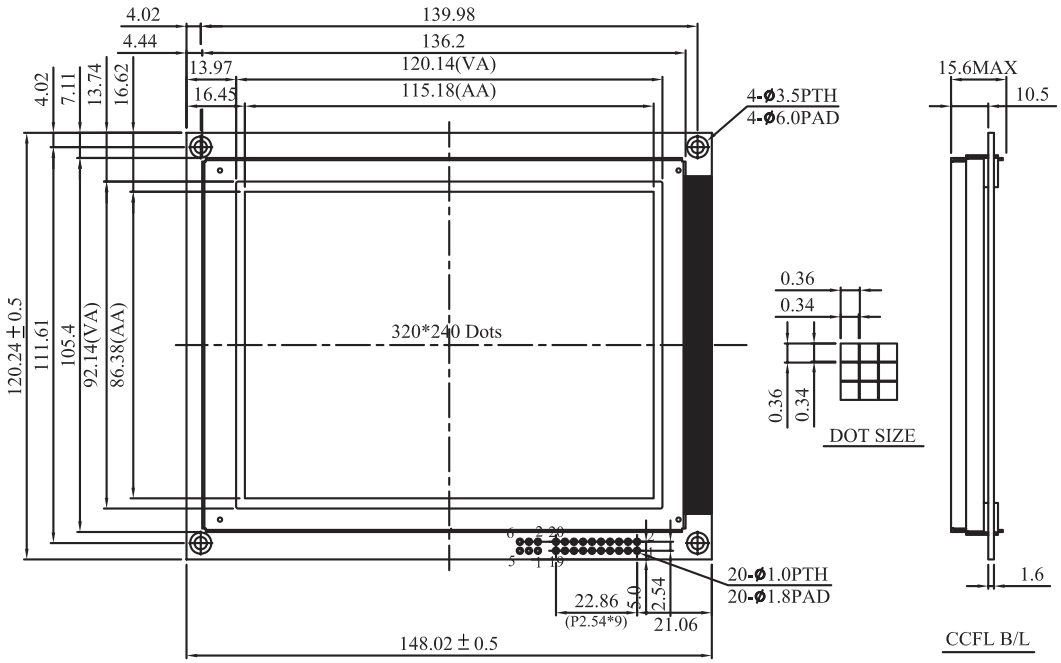
Mechanical Data

Item	Standard Value	Unit
Module Dimension	148.02 x 120.24	mm
Active Area	115.18 x 86.38	mm
Dot Pitch	0.36 x 0.36	mm
Dot Size	0.34 x 0.34	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	23.6	V

Mechanical Drawing



COB320240-07

Graphic 320x240dots

Part number list

WG320240CX-□□□-□□#

WG320240C0-□□□-□□#

Feature

1.Diagonal 5.7 inch
2.Bulit-in controller S1D13700 (WG320240CX)
  Bulit-in controller RA8835 (WG320240C0)
3.Bulit-in oscillation and negative voltage
4.+5V single power supply
5.6800/8080 interface
6.(Option) Pin19&20 for Backlight

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	/RD	Data read. Read data from LCD Controller
5	/WR	Data write. Write data into LCD Controller
6	A0	Data/ Instruction select signal
7~14	DB0~DB7	Data bus line
15	/CS	Chip select input pins
16	/RES	Controller reset signal, Active Low
17	V_{EE}	Negative Voltage Output
18	FGND	Frame ground
19	NC	No connection
20	NC	No connection

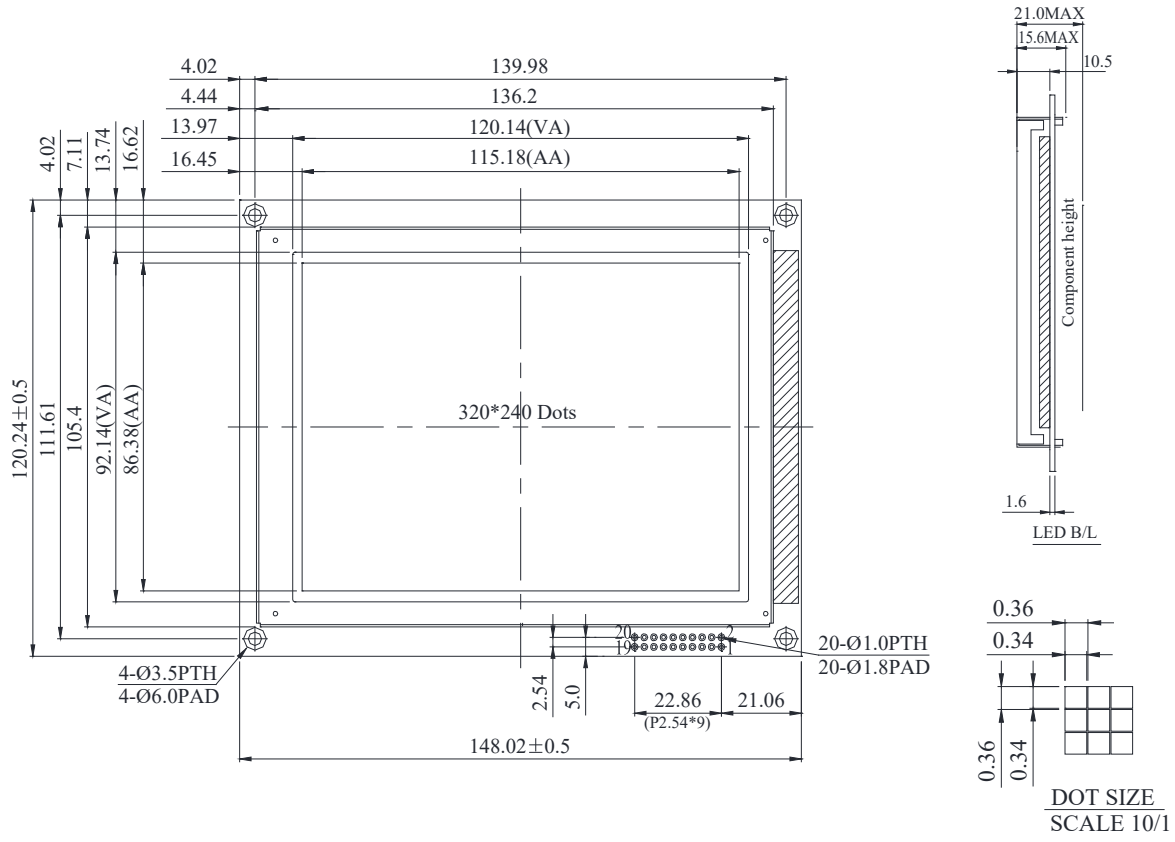
Mechanical Data

Item	Standard Value	Unit
Module Dimension	148.02 x 120.24	mm
Active Area	115.18 x 86.38	mm
Dot Pitch	0.36 x 0.36	mm
Dot Size	0.34 x 0.34	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	23.6	V

Mechanical Drawing



COB320240-08

Graphic 320x240dots

Part number list

SG320240D□□□-□□-□□-□

Feature

1.Diagonal 5.7 inch
2.No Built-in controller
3.+5V single power supply

Pin Assignment

Pin No.	Symbol	Description
1	Vss	Ground
2	VDD	Power supply for logic
3	Vo	Contrast Adjustment
4	FLM	Frame Signal
5	CL1	Common Data Shift Signal
6	CL2	Segment Shift Register Signal
7	M	Control Signal for AC driving
8~11	DB0~DB3	Data bus line
12	VLCD	Power supply voltage for LCD

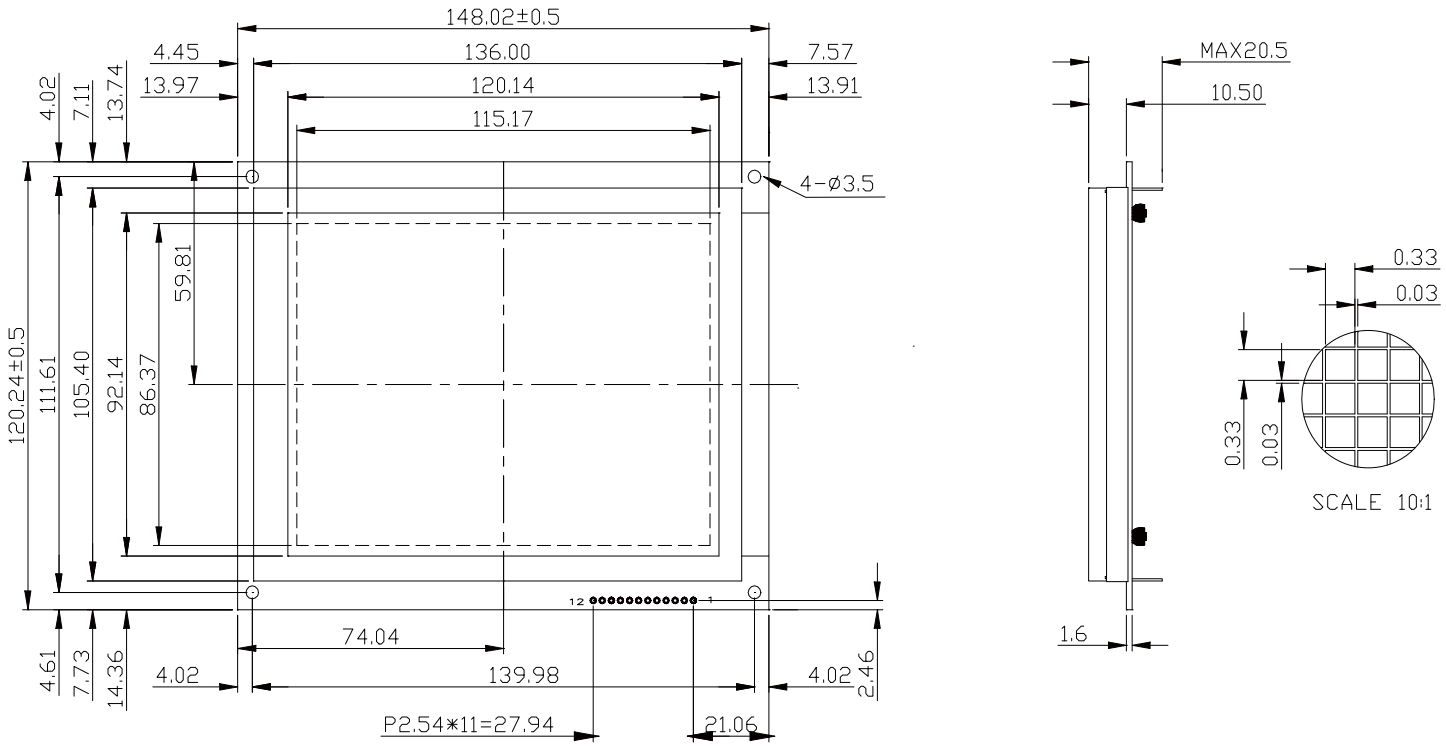
Mechanical Data

Item	Standard Value	Unit
Module Dimension	148.02 x 120.24	mm
Active Area	115.17 x 86.37	mm
Dot Pitch	0.36 x 0.36	mm
Dot Size	0.33 x 0.33	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	23.5	V

Mechanical Drawing



COB320240-09

Graphic 320x240dots

Part number list

BG320240G□□□□□$

Feature

1.Diagonal 5.7 inch
2.Bulit-in controller RA8806
3.Bulit-in oscillation
4.+5V single power supply
5.6800/8080 interface
6.FFC
7.(Option) Built-in negative voltage
8.(Option) +3V single power supply

Pin Assignment

Pin	Symbol	Function
1	LED A	Power supply for B/L (+)
2	VSS	Ground
3	VDD	Power supply for Logic (option +3V)
4	VO	Driving voltage for LCD
5	/WR	8080 family: Write signal, 6800 family: R/W signal
6	/RD	8080 family: Read signal, 6800 family: Enable clock
7	AO	Command / Data Select Input
8	/CS	Chip select , Active L
9	VEE	Negative voltage output –21.3V (Optional)
10	/RES	Controller reset signal, Active L
11~18	DB0~DB7	Data bus
19	BUSY	Busy Signal Output
20	INT	Interrupt Signal Output
21	LED A	Power supply for B/L (+)
22	LED K	Power supply for B/L (GND)

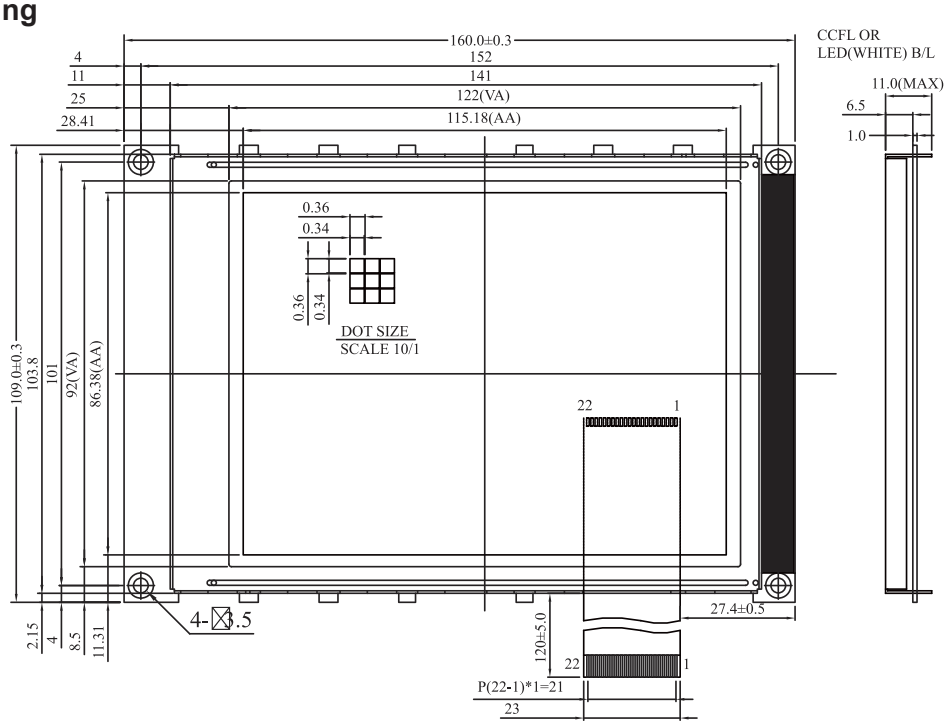
Mechanical Data

Item	Standard Value	Unit
Module Dimension	160.0 x 109.0	mm
Active Area	115.18 x 86.38	mm
Dot Pitch	0.36 x 0.36	mm
Dot Size	0.34 x 0.34	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	23.7	V

Mechanical Drawing



COB320240-10

Graphic 320x240dots

Part number list

WG320240B0-□□□-□□#

Feature

1.Diagonal 5.7 inch
2.Bulit-in controller RA8835
3.Bulit-in oscillation and negative voltage
4.+5V single power supply
5.6800/8080 interface
6.FFC connector

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	/WR	Data write. Write data into LCD Controller
6	/RD	Data read. Read data from LCD Controller
7~14	DB0~DB7	Data bus line
15	/CS	Chip select input pins
16	/RES	Controller reset signal, Active Low
17	V_{EE}	Negative Voltage Output
18	SEL	Interface selection 6800/8080
19	FG	Frame ground
20	NC	No connection

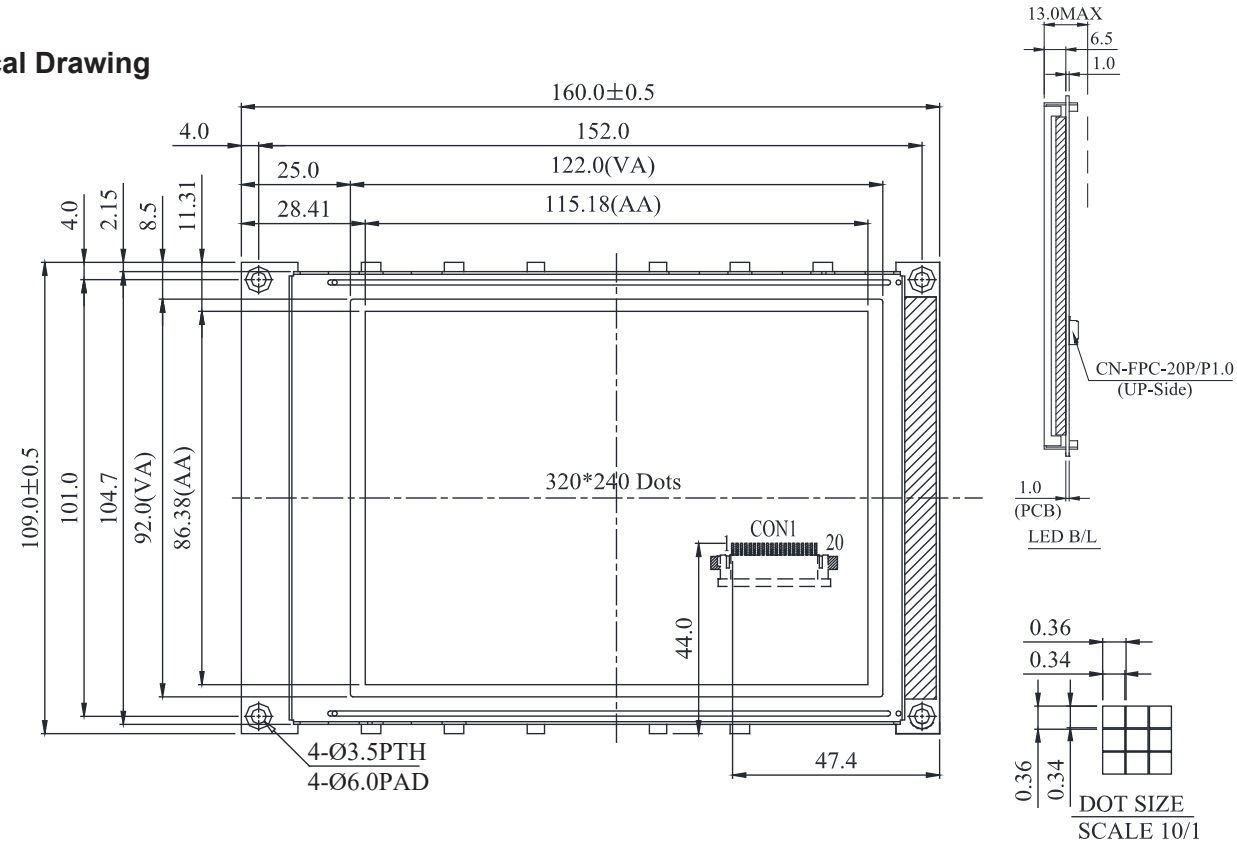
Mechanical Data

Item	Standard Value	Unit
Module Dimension	160.0 x 109.0	mm
Active Area	115.18 x 86.38	mm
Dot Pitch	0.36 x 0.36	mm
Dot Size	0.34 x 0.34	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	VDD-VO	23.6	V

Mechanical Drawing



COB320240-11

Graphic 320x240dots

Part number list

BG320240F□□□□□$

Feature

1.Diagonal 5.7 inch
2.Bulit-in controller RA8835
3.Bulit-in oscillation
4.+5V single power supply
5.6800/8080 interface
6.FFC
7.(Option) Built-in negative voltage
8.(Option) +3V single power supply

Pin Assignment

Pin	Symbol	Function
1	Vss	Power supply (GND)
2	Vdd	+5V(+3V option)
3	Vo	Contrast Adjustment
4	Ao	Data type select
5	/WR(R/W)	80s: write signal 68s:R/W signal
6	/RD(E)	80s: read signal 68s: enable clock
7~14	DB0-7	Data bus line
15	/CS	Chip select
16	/RST	Reset signal
17	Vee	Negative voltage output(-21.3)
18	SEL	uP select (H:68 series L:80 series)
19	FGND	Frame Ground
20	NC	No connection

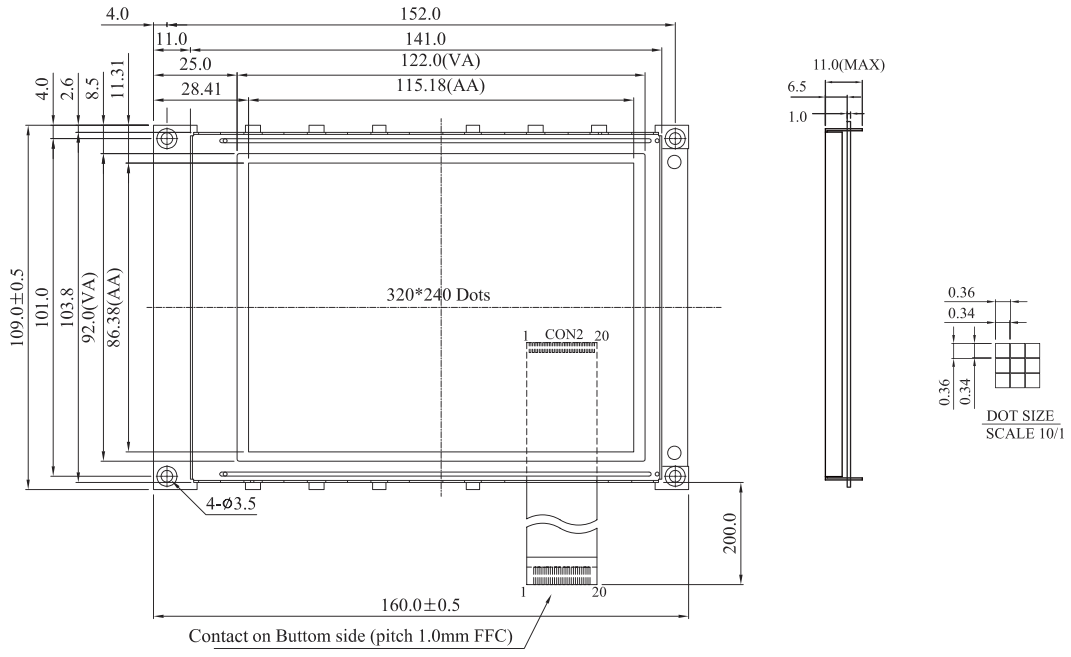
Mechanical Data

Item	Standard Value	Unit
Module Dimension	160.0 x 109.0	mm
Active Area	115.18 x 86.38	mm
Dot Pitch	0.36 x 0.36	mm
Dot Size	0.34 x 0.34	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	23.7	V

Mechanical Drawing



COB320240-12

Graphic 320x240dots

Part number list

BG320240F2□□□□□$

Feature

1.Diagonal 5.7 inch
2.Bulit-in controller S1D13700
3.Bulit-in oscillation
4.+5V single power supply
5.6800/8080 interface
6.FFC
7.(Option) Built-in negative voltage
8.(Option) +3V single power supply

Pin Assignment

Pin	Symbol	Function
1	Vss	Power supply (GND)
2	Vdd	+5V(+3V option)
3	Vo	Contrast Adjustment
4	Ao	Data type select
5	/WR(R/W)	80s: write signal 68s:R/W signal
6	/RD(E)	80s: read signal 68s: enable clock
7~14	DB0-7	Data bus line
15	/CS	Chip select
16	/RST	Reset signal
17	Vee	Negative voltage output(-21.3)
18	SEL	uP select (H:68 series L:80 series)
19	Wait	Wait
20	Display off	Display off

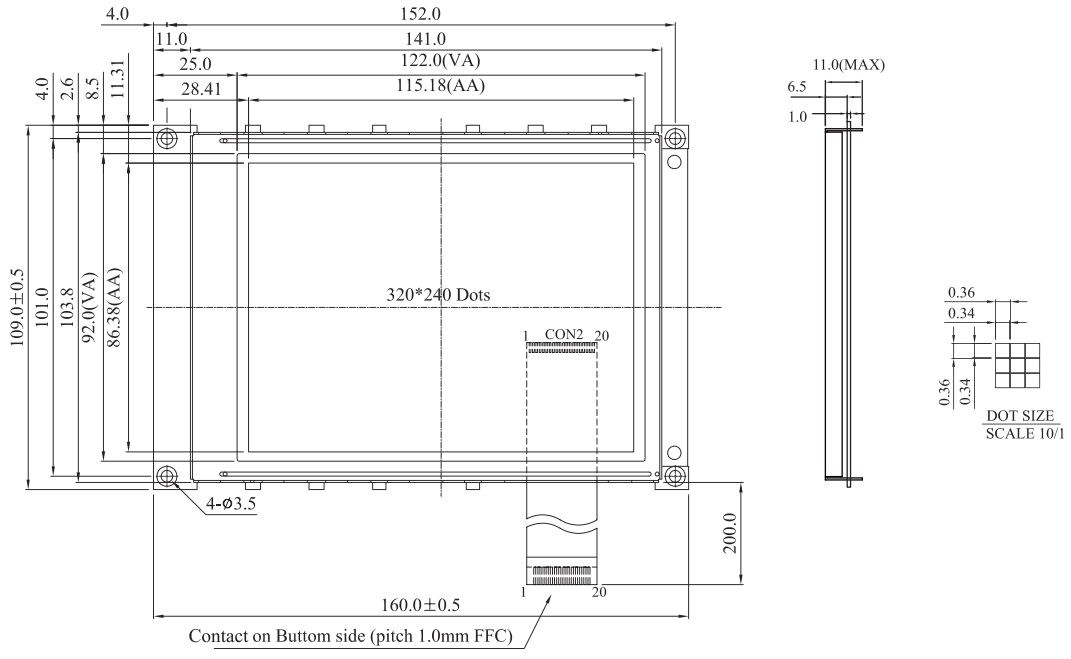
Mechanical Data

Item	Standard Value	Unit
Module Dimension	160.0 x 109.0	mm
Active Area	115.18 x 86.38	mm
Dot Pitch	0.36 x 0.36	mm
Dot Size	0.34 x 0.34	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	23.7	V

Mechanical Drawing



COB320240-13

Graphic 320x240dots

Part number list

WG320240A-□□□-□□#
BG320240A□□□□□$
SG320240F□□□-□□-□□-□

Feature

1.Diagonal 5.7 inch
2.No Built-in controller
3.+5V single power supply
4.FFC
5.(Option) Built-in negative voltage
6.(Option) +3V single power supply

Pin Assignment

Pin	Symbol	Function
1~4	DB0~3	Data bus line
5	/DISPOFF	Display off signal (H:on L:off)
6	FLM	First line marker
7	NC	No connection
8	LP	Data latch
9	CP	Data shift
10	Vdd	+5V(+3V option)
11	Vss	Power supply (GND)
12	Vee	Negative voltage output
13	Vo	Contrast adjustment
14	FGND	Frame Ground

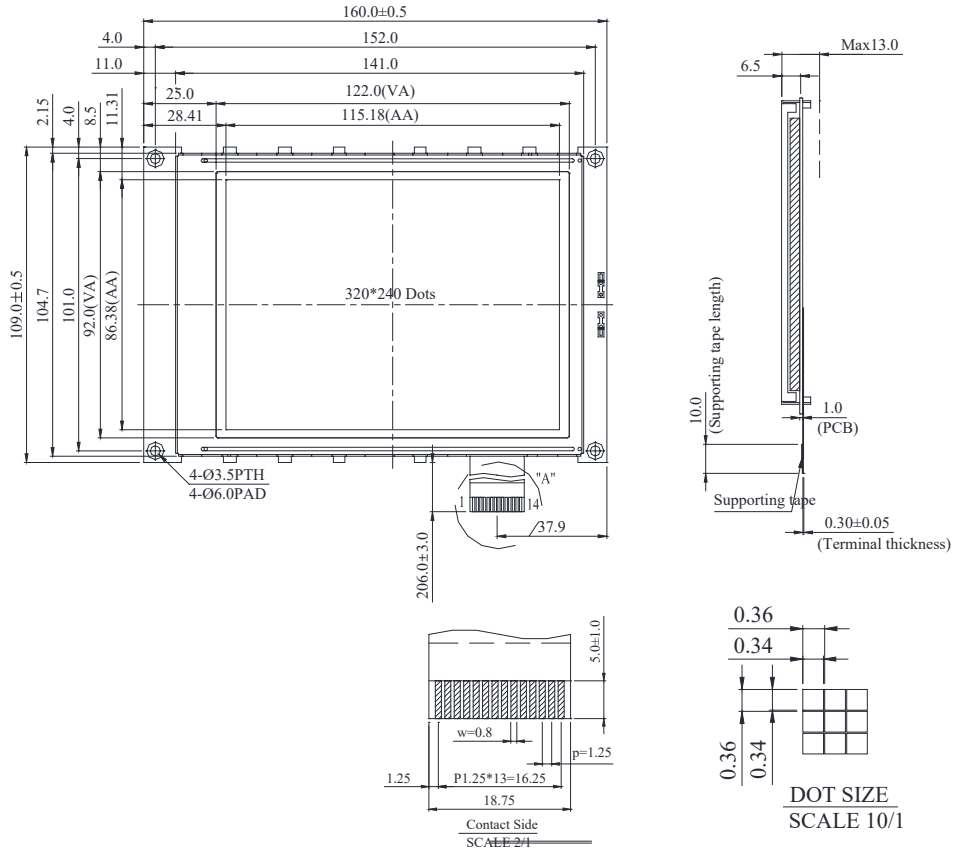
Mechanical Data

Item	Standard Value	Unit
Module Dimension	160.0 x 109.0	mm
Active Area	115.18 x 86.38	mm
Dot Pitch	0.36 x 0.36	mm
Dot Size	0.34 x 0.34	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	5.0	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	VDD-VO	23.6	V

Mechanical Drawing



COG320240-01

Graphic 320x240dots

Part number list

WO320240A-□□□-□□#

Feature

1.Diagonal 5.7 inch
2.No Built-in controller
3.+3V / +5V single power supply
4.Built-in positive voltage

Pin Assignment

Pin No.	Symbol	Description
1	D0	Data bus line
2	D1	Data bus line
3	D2	Data bus line
4	D3	Data bus line
5	/DISPOFF	Display off H:ON L:OFF
6	FRAME	Scan start-up signal
7	NC	No connection
8	LOAD	Data latch pulse
9	CP	Data shift pulse
10	V_{DD}	Power supply for logic
11	V_{SS}	Ground
12	V_{EE}	Postive Voltage Output
13	V_O	Contrast Adjustment
14	NC	No connection

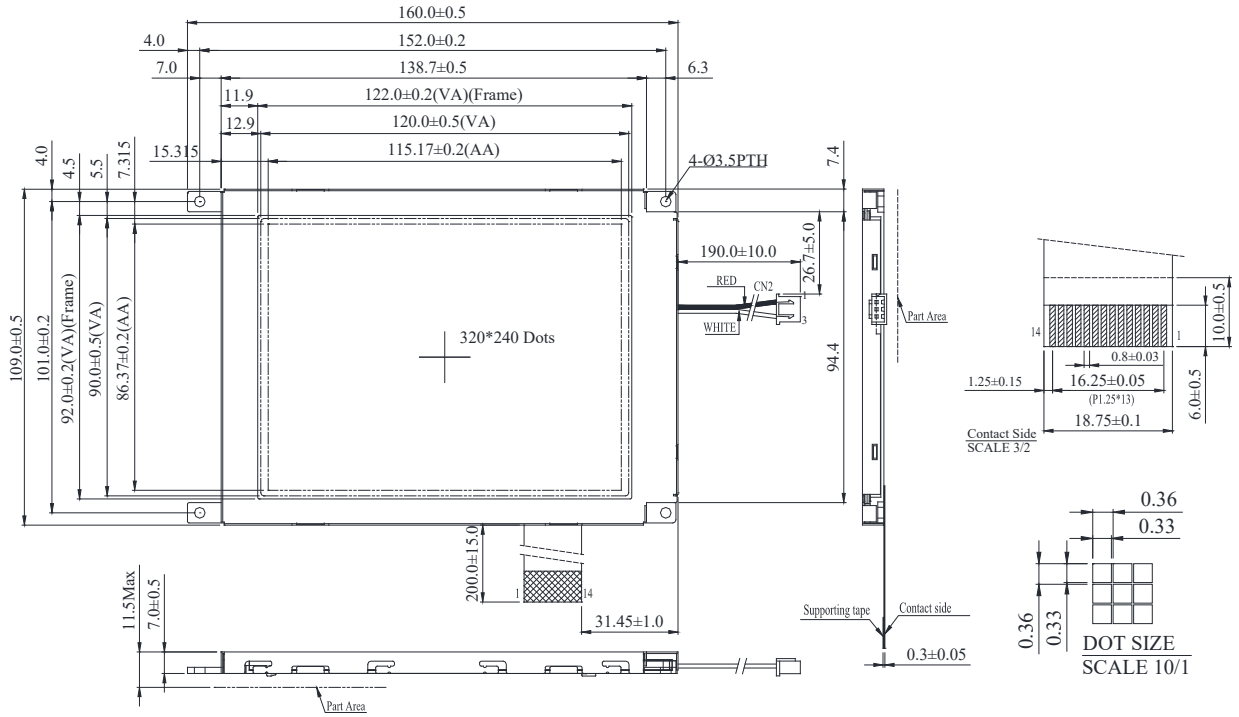
Mechanical Data

Item	Standard Value	Unit
Module Dimension	160.0 x 109.0	mm
Active Area	115.17 x 86.37	mm
Dot Pitch	0.36 x 0.36	mm
Dot Size	0.33 x 0.33	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vo-Vss	23.0	V

Mechanical Drawing



COG320240-02

Graphic 320x240dots

Part number list

WO320240B-□□□-□□#

Feature

1.Diagonal 5.7 inch
2.Bulit-in controller RA8835
3.Bulit-in oscillation and positive voltage
4.+3V / +5V single power supply
5.6800/8080 interface

Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	WR	Data write. Write data into LCD Controller
6	RD	Data read. Read data from LCD Controller
7~14	DB0~DB7	Data bus line
15	CS	Chip select input pins
16	RES	Controller reset signal, Active Low
17	V_{EE}	Postive Voltage Output
18	SEL1	Interface selection 6800/8080
19	FGND	Frame ground
20	NC	No connection

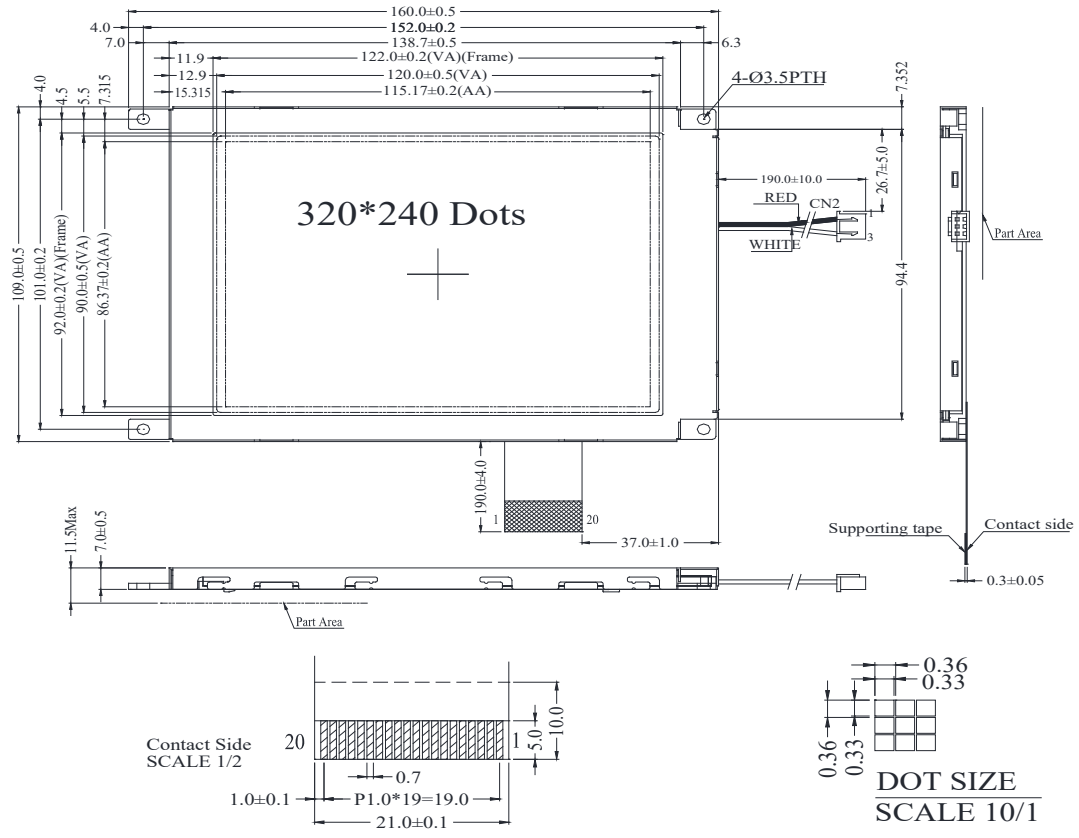
Mechanical Data

Item	Standard Value	Unit
Module Dimension	160.0 x 109.0	mm
Active Area	115.17 x 86.37	mm
Dot Pitch	0.36 x 0.36	mm
Dot Size	0.33 x 0.33	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vo-Vss	23.0	V

Mechanical Drawing



TAB320240-01

Graphic 320x240dots

Part number list

BP320240E□□□□$

Feature

1.Diagonal 3.8 inch
2.Bulit-in controller RA8835
3.Bulit-in oscillation and positive voltage
4.+3V / +5V single power supply
5.6800/8080 interface
6.FSTN LCD
7.(Option) Touch panel

Pin Assignment

Pin	Symbol	Function
1	/RST	Reset signal
2	/RD	80s:read signal/68s:enable signal (E)
3	/WR	80s:write signal/68s: R/W signal
4	/CS	Chip select
5	Ao	Data type select
6~13	DB0-7	Data bus line
14	Vdd	Power supply (+3V ~ +5V)
15	Vss	Power supply (GND)
16	Vadj	Contrast Adjustment
17	NC	NC
18	SK*/X1**	Serial clock/touch panel left signal (X axis)
19	D0*/X2**	Data output/touch panel right signal (X axis)
20	D1*/Y1**	Data input/touch panel upper signal (Y axis)
21	CS*/Y2**	Chip select/touch panel lower signal (Y axis)
22	INT	Interrupt
23~24	LED A/K	Power supply for LED/L
Remark	*Built-in touch panel controller/oller/ ** External touch panel controller	

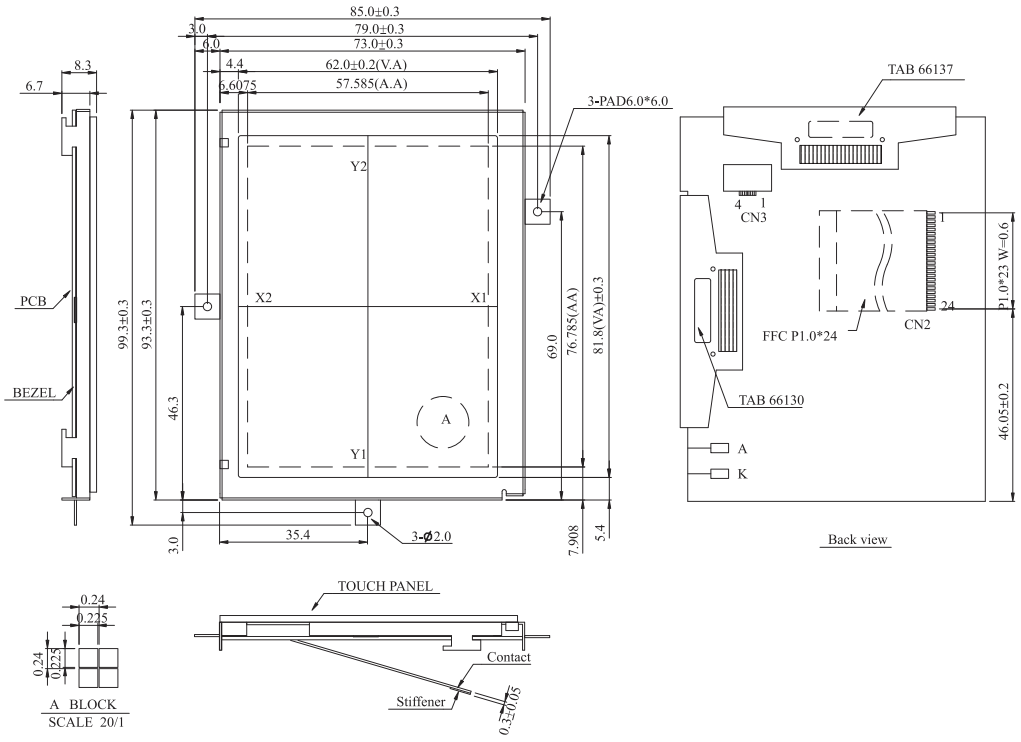
Mechanical Data

Item	Standard Value	Unit
Module Dimension	85.0 x 99.3	mm
Active Area	57.585 x 76.785	mm
Dot Pitch	0.24 x 0.24	mm
Dot Size	0.225 x 0.225	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25°C	Vadj-Vss	0.5	V

Mechanical Drawing



TAB320240-02

Graphic 320x240dots

Part number list

BP320240F□□□□$

Feature

1.Diagonal 3.8 inch
2.No Built-in controller
3.Bulit-in positive voltage
4.+3V / +5V single power supply
5.FSTN LCD
6.(Option) Touch panel

Pin Assignment

Pin	Symbol	Function
1~4	DB0-3	Data Bus
5	/Dispoff	L:display off
6	FLM	Start line signal
7	M	Alternate signal
8	LP	Data latch clock
9	CP	Data Shift clock
10	Vdd	Power supply (+3V ~ +5V)
11	Vss	Power supply (GND)
12	EL-on	H:EL on
13	Vadj	Contrast Adjustment
14	/RST	Reset signal
15	SK*/X1**	Serial clock/touch panel left signal (X axis)
16	D0*/X2**	Data output/touch panel right signal (X axis)
17	D1*/Y1**	Data input/touch panel upper signal (Y axis)
18	CS*/Y2**	Chip select/touch panel lower signal (Y axis)
19	INT	Interrupt
20,21	LED A.K	Power supply for LED B/L
22,24	NC	

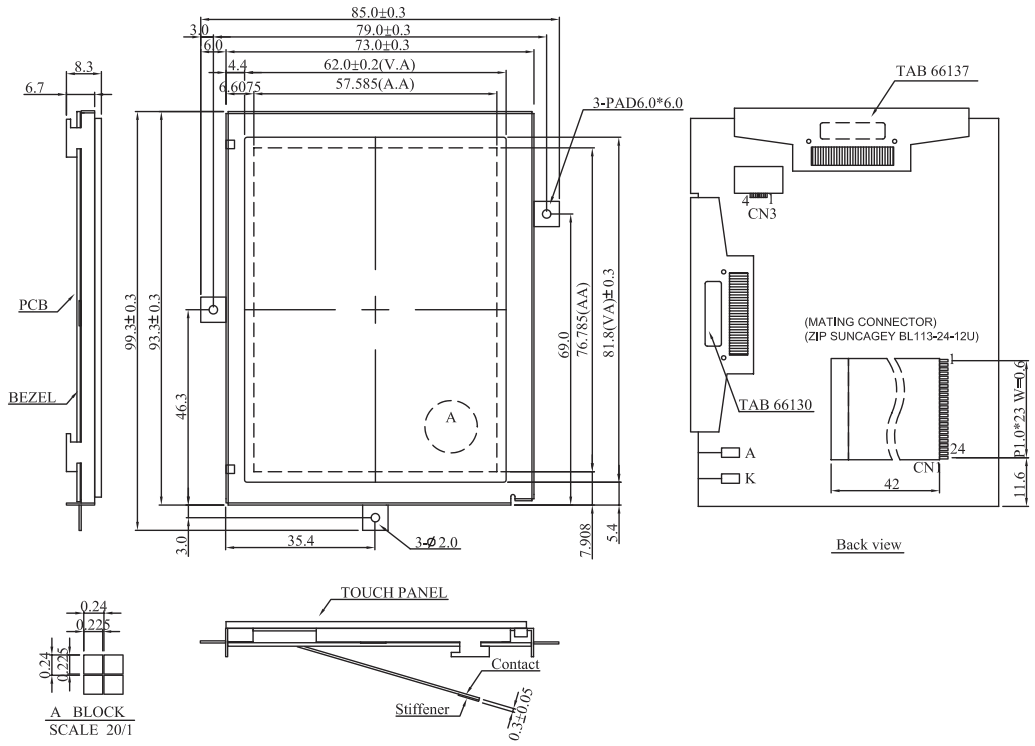
Mechanical Data

Item	Standard Value	Unit
Module Dimension	85.0 x 99.3	mm
Active Area	57.585 x 76.785	mm
Dot Pitch	0.24 x 0.24	mm
Dot Size	0.225 x 0.225	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vadj-Vss	0.5	V

Mechanical Drawing



TAB320240-03

Graphic 320x240dots

Part number list

BP320240H□□□□$

Feature

1.Diagonal 3.8 inch
2.Bulit-in controller RA8835
3.Bulit-in oscillation and positive voltage
4.+3V / +5V single power supply
5.6800/8080 interface
6.FSTN LCD
7.(Option) Touch panel

Pin Assignment

Pin	Symbol	Function
1	Vss	Power supply (GND)
2	Vdd	Power supply (+3V ~ +5V)
3	Vadj	Contrast Adjustment
4	/RD	80s:read signal/68s:enable signal (E)
5	/WR	80s:write signal/68s: R/W signal
6	Ao	Data type select
7~14	DB0-7	Data bus line
15	/CS	Chip select
16	/RST	Reset signal
17	/DISPO	Display off H:on L:off
18	NC	No Connection
19	A	Power supply for B/L +
20	K	Power supply for B/L -
21	X1	Touch panel left signal (X axis)
22	Y1	Touch panel upper signal (Y axis)
23	X2	Touch panel right signal (X axis)
24	Y2	Touch panel lower signal (Y axis)

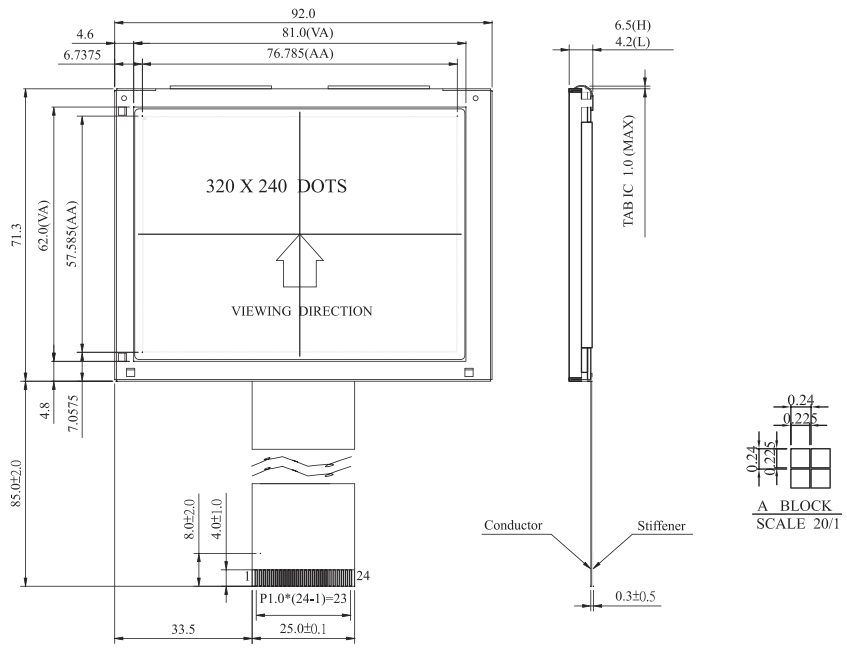
Mechanical Data

Item	Standard Value	Unit
Module Dimension	92.0 x 71.3	mm
Active Area	76.785 x 57.785	mm
Dot Pitch	0.24 x 0.24	mm
Dot Size	0 225 x 0.225	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vadj-Vss	0.5	V

Mechanical Drawing



TAB320240-04

Graphic 320x240dots

Part number list

BP320240G□□□□$

Feature

1.Diagonal 3.8 inch
2.No Built-in controller
3.Bulit-in positive voltage
4.+3V / +5V single power supply
5.FSTN LCD
6.(Option) Touch panel

Pin Assignment

Pin	Symbol	Function
1	FLM	Start line signal
2	M	Alternate signal
3	LP	Data latch clock
4	CP	Data shift clock
5	/Dispoff	L:display off
6~9	DB0-3	Data bus
10	Vdd	Power supply (+3V ~ +5V)
11	Vss	Power supply (GND)
12	Vadj	Contrast adjustment
13	Vss	Power supply (GND)
14	EL-on	H:EL on
15	A	Power supply for B/L(+)
16	K	Power supply for B/L(GND)
17	X1	Touch panel left signal (X axis)
18	Y1	Touch panel upper signal (Y axis)
19	X2	Touch panel right signal (X axis)
20	Y2	Touch panel lower signal (Y axis)

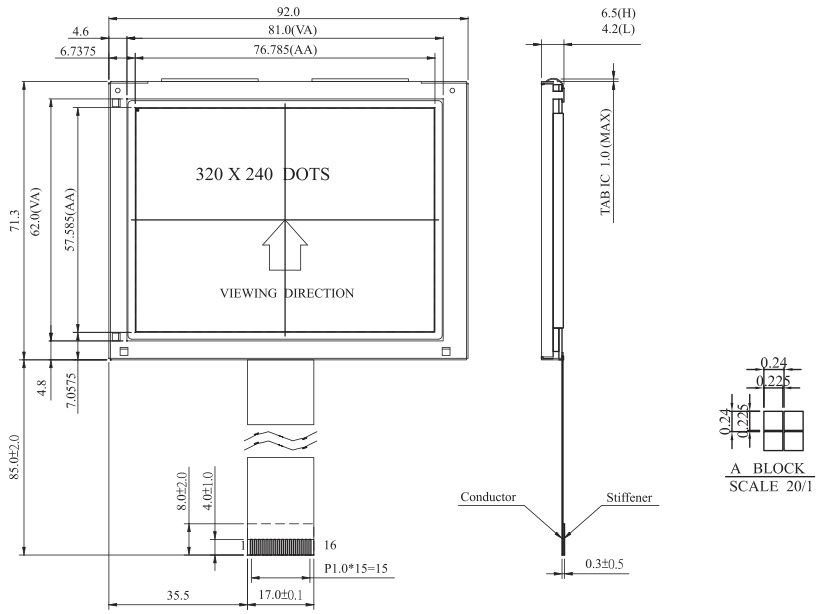
Mechanical Data

Item	Standard Value	Unit
Module Dimension	92.0 x 71.3	mm
Active Area	76.785 x 57.785	mm
Dot Pitch	0.24 x 0.24	mm
Dot Size	0 225 x 0.225	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vadj-Vss	0.5	V

Mechanical Drawing



TAB320240-05

Graphic 320x240dots

Part number list

BP320240A□□□□$

Feature

1.Diagonal 3.8 inch
2.No Built-in controller
3.+3V single power supply
4.Built-in positive voltage
5.FSTN LCD and EL Backlight
6.(Option) Touch panel

Pin Assignment

Pin	Symbol	Function
1	CL2	Data shift clock
2	CL1	Data latch clock
3	FLM	Scan start-up signal
4	M	Alternate signal
5~8	DB0~DB3	Data Bus
9	Vee	Power supply for LCD
10	Vdd	Power supply (+3V)
11	Vss	Power supply(GND)
12	BLE	H:EL on L:EL off
13	V ELG	Power supply for EL (0V)
14	V EL	Power supply for EL (+3~5V)

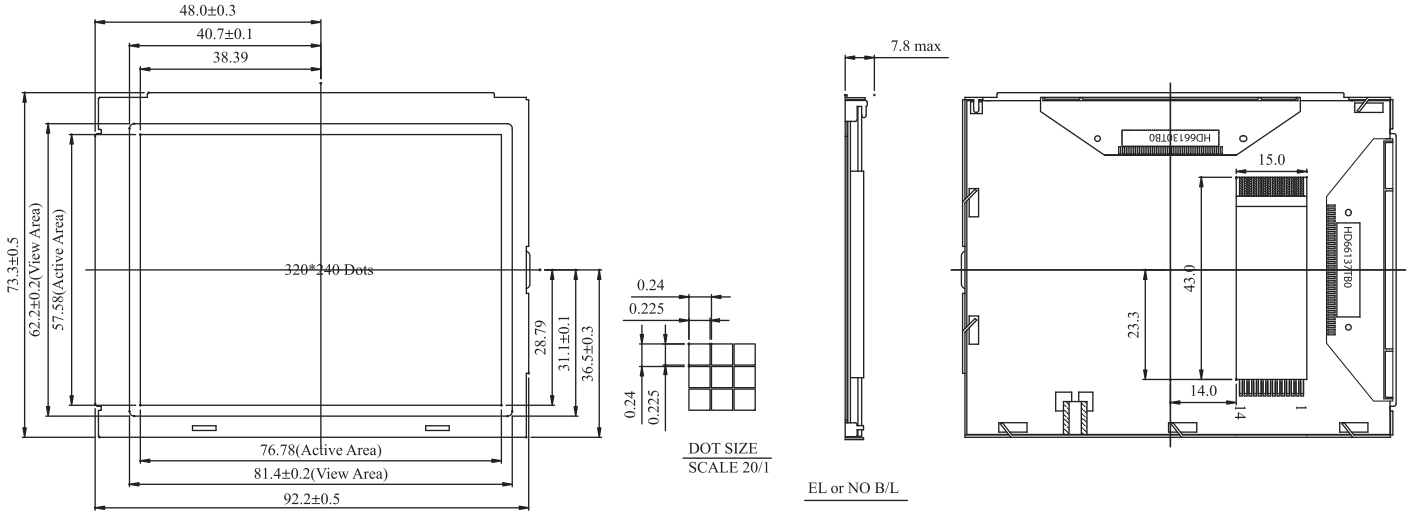
Mechanical Data

Item	Standard Value	Unit
Module Dimension	92.2 x 79.3	mm
Active Area	76.785 x 57.585	mm
Dot Pitch	0.24 x 0.24	mm
Dot Size	0.225 x 0.225	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vo-Vss	17.5	V

Mechanical Drawing



TAB320240-06

Graphic 320x240dots

Part number list

WX320240G-□□□-□□#

Feature

1.Diagonal 3.8 inch
2.No Built-in controller
3.+3V / +5V single power supply
4.(Option) Bulit-in positive voltage
5.(Option) Touch panel

Pin Assignment

Pin No.	Symbol	Description
1	CL2	Data shift pulse
2	CL1	Data latch pulse
3	FLM	Scan start-up signal
4	M	Frame reverse signal(alternate signal)
5	DB0	Data bus line
6	DB1	Data bus line
7	DB2	Data bus line
8	DB3	Data bus line
9	V_O	Contrast Adjustment
10	V_{DD}	Power supply for logic
11	V_{SS}	Ground
12	NC	No connection
13	K	Power supply for B/L -
14	A	Power supply for B/L +
15	DISP	Display off H:ON L:OFF
16	V_{EE}	Postive Voltage Output

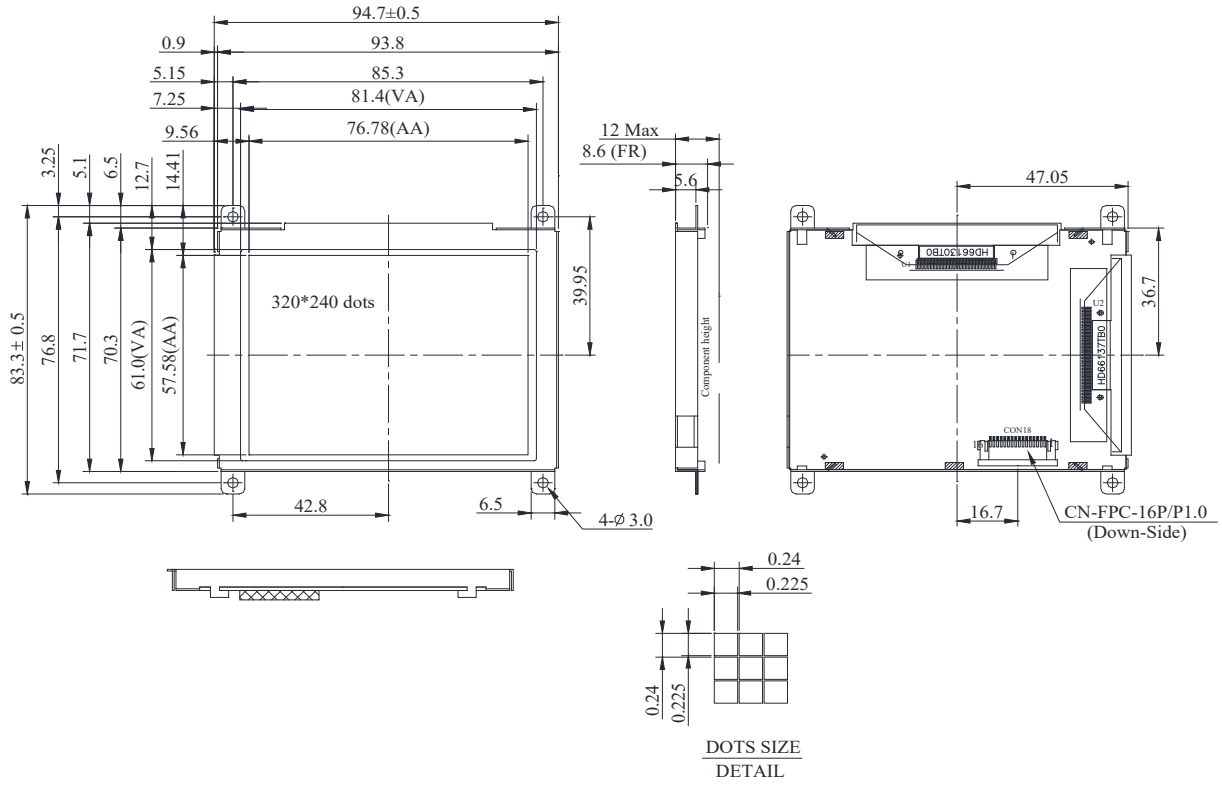
Mechanical Data

Item	Standard Value	Unit
Module Dimension	94.7 x 83.3	mm
Active Area	76.785 x 57.585	mm
Dot Pitch	0.24 x 0.24	mm
Dot Size	0.225 x 0.225	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vo-Vss	21.7	V

Mechanical Drawing



TAB320240-07

Graphic 320x240dots

Part number list

WX320240D-□□□-□□#

Feature

1.Diagonal 3.8 inch
2.Bulit-in controller RA8835
3.Bulit-in oscillation and positive voltage
4.+3V / +5V single power supply
5.6800/8080 interface
6.(Option) Touch panel
7.(Option) WX320240H with Chinese font controller RA8806

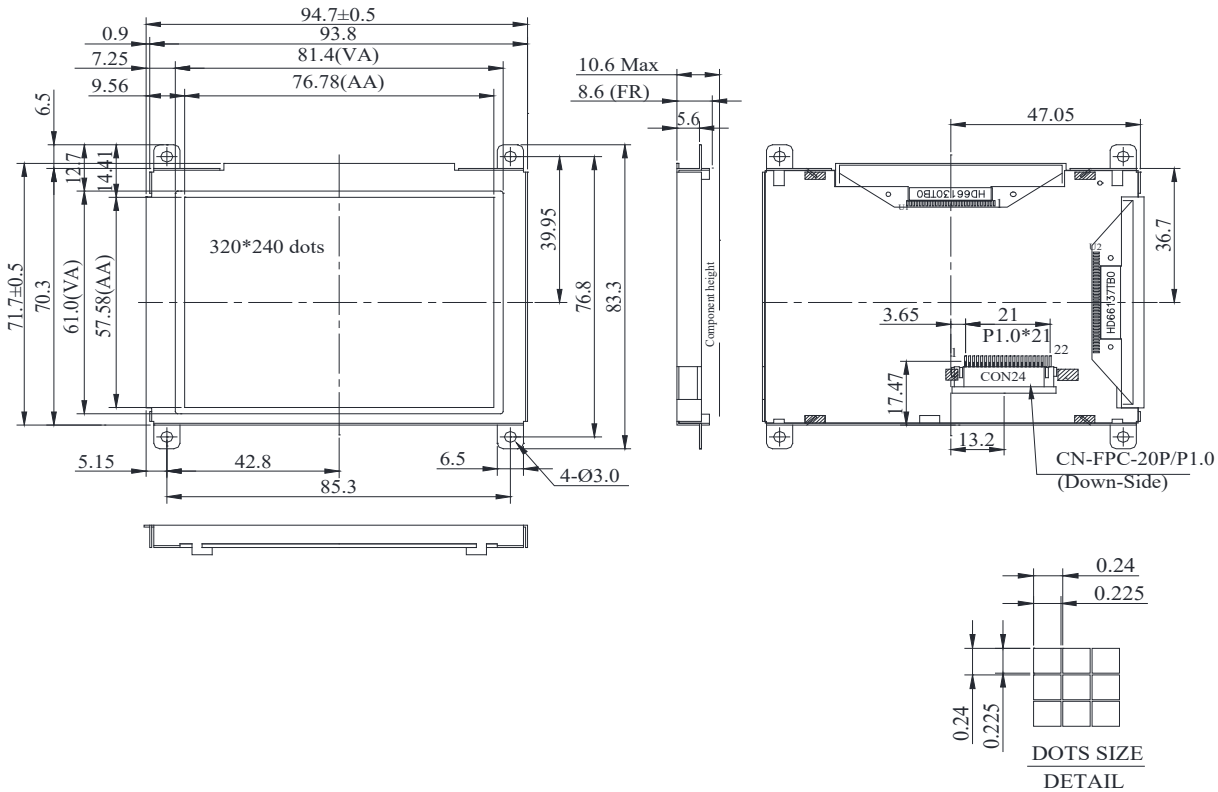
Pin Assignment

Pin No.	Symbol	Description
1	V_{SS}	Ground
2	V_{DD}	Power supply for logic
3	V_O	Contrast Adjustment
4	A0	Data/ Instruction select signal
5	WR	Data write. Write data into LCD Controller
6	RD	Data read. Read data from LCD Controller
7~14	DB0-DB7	Data bus line
15	CS	Chip select input pins
16	RES	Controller reset signal, Active Low
17	V_{EE}	Postive Voltage Output
18	SEL1	Interface selection 6800/8080
19	A	Power supply for B/L +
20	K	Power supply for B/L -

Mechanical Data

Item	Standard Value	Unit
Module Dimension	94.7 x 83.3	mm
Active Area	76.785 x 57.585	mm
Dot Pitch	0.24 x 0.24	mm
Dot Size	0.225 x 0.225	mm

Electrical Characteristics

Item	Symbol	Standard Value typ.	Unit
Input Voltage	VDD	3 / 5	V
Recommended LCD Driving Voltage for Normal Temp. Version module @25ºC	Vo-Vss	21.7	V

Mechanical Drawing