

● Part Numbering System

P C 16 02 * * * - * * * - * - *
 1 2 3 4 5 6 7 8 9 - 10 11

No	Code *1	Description	Remark
1	P	"P" refers to Powertip Technology Corporation	Brand initial
2	C	Character type	LCD module type
	G	Graphic type	
	E	COG product	
	F	COF product	
	H	CSTN product	
	D	None LCD modules products	
	T	Total solution products for specific customers	
	S	Engineering sample (This code will be changed while mass production)	Sampling code
3	08,16,20, ...	As PC refers to the number of characters per line	Characters per line
	97, 120, 128, ...	As PG refers to the number of dots per row	Dots per row
4	01, 02, 03, 04, ...	As PC refers to the number of the lines in the display	Lines per display
	32, 48, 64, 128, ...	As PG refers to the number of dots per column	Dots per column
5	A	Without backlight	Backlight type & color *1
	B	EL backlight, blue-green	
	D	EL backlight, yellow-green	
	E	EL backlight, white	
	F	CCFL backlight, white	
	L	LED backlight, yellow-green	
	M	LED backlight, amber	
	N	LED backlight, red	
	O	LED backlight, orange	
	S	LED backlight, green	
	U	LED backlight, blue	
W	LED backlight, white		
6	R	Standard (through hole, cable, connector and etc.)	Interface type
	Y	Straight (180°) pin header	
	Z	Perpendicular (90°) pin header	

No	Code	Description	Remark
7	None	Positive TN, black on gray	LCD type & color *1
	C	CSTN	
	H	Positive HTN, black on gray	
	S	Positive STN, navy blue on gray	
	F	Positive FSTN, black on white	
	U	Positive STN, navy blue on yellow green	
	N	Negative TN, gray on black	
	M	Negative STN, gray on navy blue	
	T	Negative FSTN, white on black	
8	0~Z	Series letter. In the case of COG, code 8 & 9 means the series number	Series number
9	00~ZZ	Reference to driver/controller code system Table A below	LSI code system
	NN	LSI is provided without built-in font table or Ram mapping display	LSI function
10	A~Z	Refer to display viewing features system Table B below	Display viewing features
11	None	No modification for standard	
	01~ZZ	Modified or additional materials on board	Version or specific notes

Driver/Controller Code System (Table A)

Display style	Character type				Graphic type			
	Manufacturer	Samsung	Novatek	Sitronix	Sunplus	Epson	Sanyo	Toshiba
English/Japanese	SO	NO	WA	LA	E4	YA	TA	
English/European	S5/S6	N5/N6/NI	WB/W5	LB/L5/L6			TA	
English/France	S3	N3		L3				
English/Russian	SH	NH		LH				
English/Chinese			WH					
English/Hebrew	S4/S8	N4/N8		L4				

Display Viewing Features System (Table B)

Operation Temperature		Normal Temperature Range(NT): 0°-50°C		Wide Temperature Range(WT): -20°-70°C	
Viewing direction		6:00	12:00	6:00	12:00
Polarizer	Reflective	A	D	G	J
	Transflective	B	E	H	K
	Transmissive	C	F	I	L

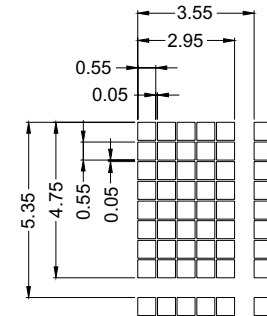
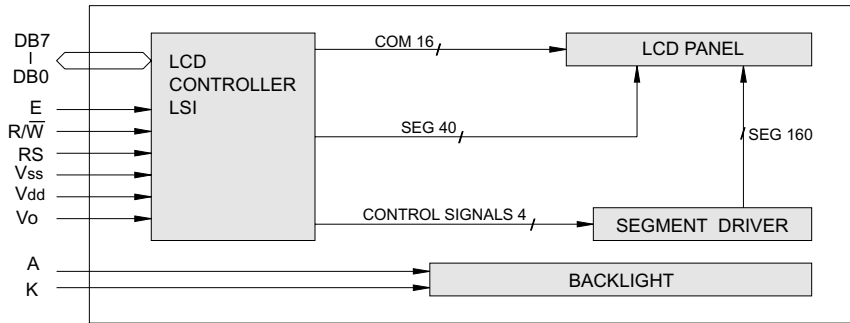
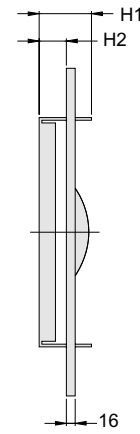
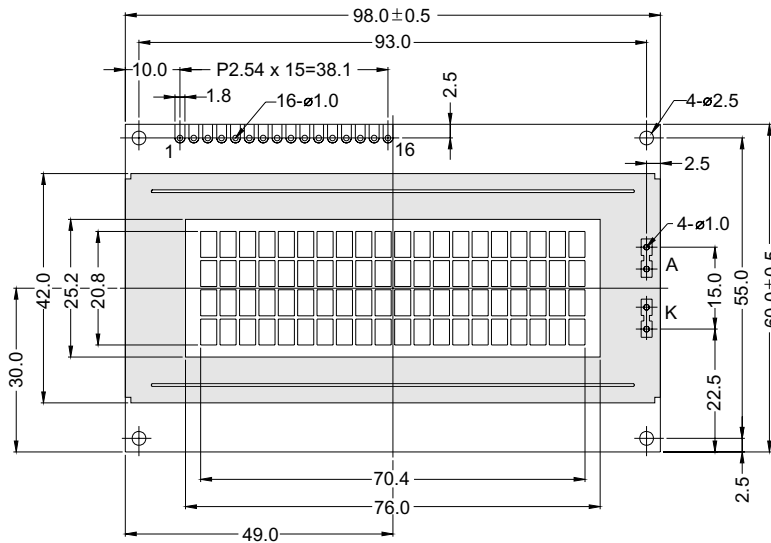
Remark:

*1. Please contact with sales to check if code combinatoin are available.

*2. The color of the display may vary slightly depending on the amount of ambient light or different production lot.



OUTLINE DIMENSION & BLOCK DIAGRAM



The tolerance unless classified $\pm 0.3\text{mm}$

MECHANICAL SPECIFICATION			
Overall Size	98.0 x 60.0	Module	H2 / H1
View Area	76.0 x 25.2	W/O B/L	5.0 / 9.6
Dot Size	0.55 x 0.55	EL B/L	5.0 / 9.6
Dot Pitch	0.60 x 0.60	LED B/L	8.7 / 13.3

PIN ASSIGNMENT		
Pin no.	Symbol	Function
1	Vss	Power supply(GND)
2	Vdd	Power supply(+)
3	Vo	Contrast Adjust
4	RS	Register select signal
5	R/W	Data read / write
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 LED B/L (+)
16	K	Power supply for LED B/L (-)

ABSOLUTE MAXIMUM RATING									
Item	Symbol	Condition	Min.	Max.	Units				
Supply for logic voltage	Vdd-Vss	25°C	-0.3	7	V				
LCD driving supply voltage	Vdd-Vee	25°C	-0.3	13	V				
Input voltage	Vin	25°C	-0.3	Vdd+0.3	V				
ELECTRICAL CHARACTERISTICS									
Item	Symbol	Condition	Min.	Typical	Max.	Units			
Power supply voltage	Vdd-Vss	25°C	2.7	-	5.5	V			
LCD operation voltage	Vop	Top	N	W	N	W	V		
		-20°C	-	7.1	-	7.5	-	7.9	V
		0°C	5.1	-	5.4	-	6.1	-	V
		25°C	5	6.1	5.3	6.4	5.8	6.7	V
		50°C	4.4	-	4.7	-	5.5	-	V
		70°C	-	5.7	-	6	-	6.3	V
LCM current consumption (No B/L)	Idd	Vdd=5V	-	2.5	4	mA			
Backlight current consumption	LED/edge	VB/L=4.2V	-	-	-	mA			
	LED/array	VB/L=4.2V	-	260	-	mA			

REMARK

LCD option: STN, TN, FSTN

Backlight Option: LED, EL Backlight feature, other Specs not available on catalog is under request.

