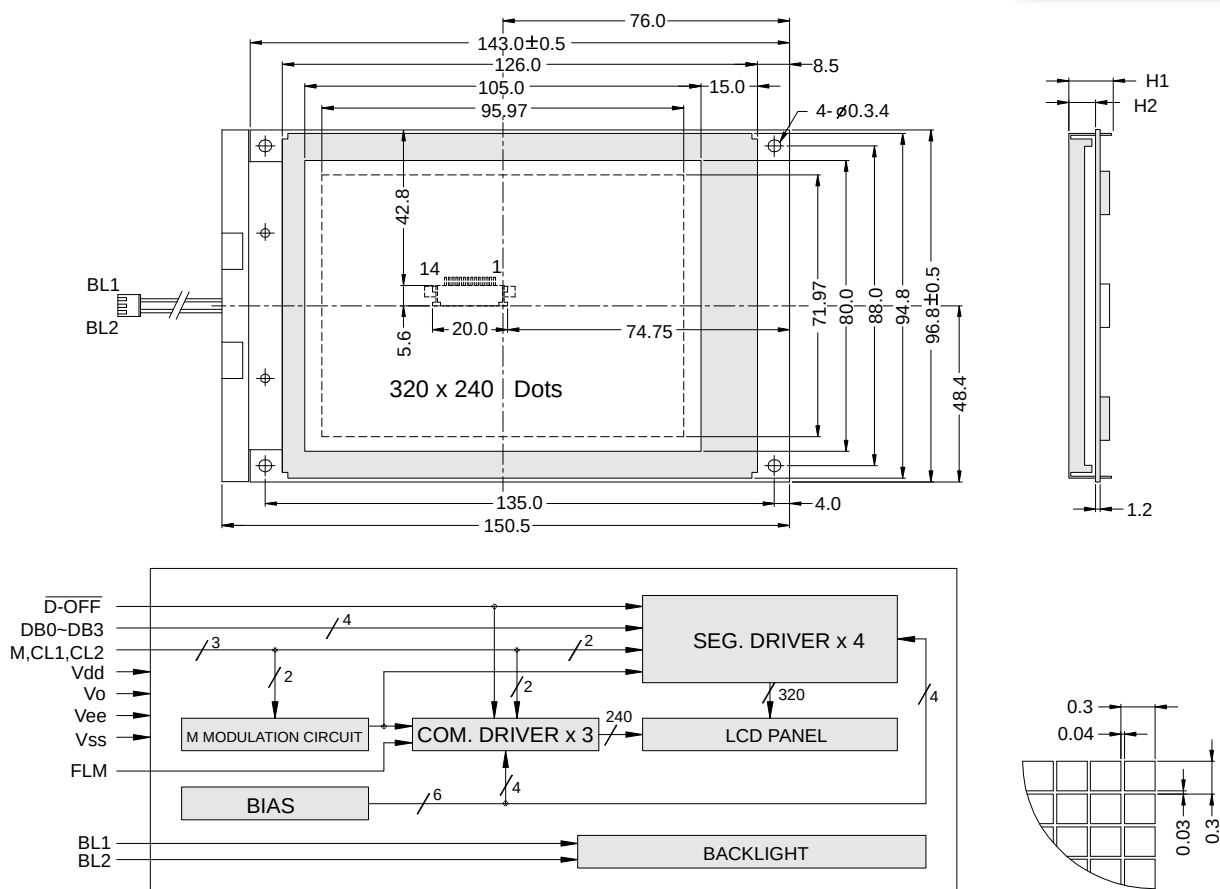




OUTLINE DIMENSION & BLOCK DIAGRAM



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

MECHANICAL SPECIFICATION			
Overall Size	143.0 x 96.8	Module	H2 / H1
View Area	105.0 x 80.0	W / O B/L	5.9 / 10.1
Dot Size	0.27 x 0.27	EL B/L	5.9 / 10.1
Dot Pitch	0.30 x 0.30	LED / CCFL B/L	8.0 / 11.7

PIN ASSIGNMENT		
Pin no.	Symbol	Function
1	FLM	Shift direction select
2	M	Synchronous signal input
3	CL1	Display data input clock
4	CL2	Display data input clock
5	D-OFF	Column output control
6-9	DB0-DB3	Data bus line
10	Vdd	Power supply(+)
11	Vss	Power supply(GND)
12	Vee	Negative voltage input
13	Vo	Contrast Adjust
14	FG	Frame ground

ABSOLUTE MAXIMUM RATING											
Item	Symbol	Condition	Min.		Max.		Units				
Supply for logic voltage	Vdd-Vss	25°C	-0.3		7.0		V				
LCD driving supply voltage	Vdd-Vee	25°C	0		35.0		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	4.5		—		5.5		V		
LCD operation voltage	Vop	Top	N	W	N	W	N	W	V		
		-20°C	—		26.9		—		29.9		V
		0°C	25.5	—	27	—	28.5	—	V		
		25°C	23.5	24.4	25	25.9	26.5	27.4	V		
		50°C	21	—	22.5	—	24	—	V		
		70°C	—		22		—		23.5		—
LCM current consumption (No B/L)	Idd	Vdd=5V	—		7		—		mA		
Backlight current consumption	LED/edge	VB/L=4.2V	—		180		—		mA		
	LED/white	VB/L=3.5V	—		120		—		mA		

REMARK

LCD option: STN, TN, FSTN

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



PRODUCTS
 OUR PRODUCTS

Products

- Mono Type Part Numbering System
- COG Part Numbering System
- EMS Part Numbering System
- Color Type Part Numbering System
- Mono COG Part Numbering System
- Self-made product Part Numbering System

Mono Type Part Numbering System

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

No	Code value	Description	Remark
1	P	Powertip products	Brand
2	C	Character type	Module type
	G	Graphic type	
3	08,16,20,24...	Character per line (for character modules)	Characters per line or row dots
	120,122,128...	Row dots (for graphic modules)	
4	01,02,03,04,...	Lines (for graphic modules)	Lines or column dots
	32,240...	Column dots (for graphic modules)	
5	A	Without backlight	
	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	Backlight mode
	O	LED backlight orange	(Type+Color)
	P	LED backlight pure-green	
	S	LED backlight green	
	T	Double LED backlight	
	U	LED backlight blue	
	V	LED backlight blue white	
	W	LED backlight white	
	R	Triple LED backlight	
6	R	Standard (Through hole, cable, connector and etc.)	Connecting type
	Y	Straight pin-header	
	Z	Right angle pin-header	
7	None	TN positive gray	
	N	TN negative blue	
	P	PBT(Pure Black Tech.)	
	Q	E-TN(Enhanced TN)	
	H	HTN Positive Gray	
	J	HTN Negative (Black/Blue)	
	S	STN positive gray	LCD Mode

	U	STN positive yellow-green	200 10000 (Type+Color)
	M	STN negative blue	
	G	ASTN(Automotive STN)	
	W	E-STN(Enhanced STN)	
	F	FSTN positive white	
	T	FSTN negative black	
	Y	E-FSTN(Enhanced FSTN)	
8	0~Z	Series number	Model name
9	00~ZZ	IC manufacturer/character pattern /total solution series number	Table A
	NN	Without controller	
10	A~Z	Refer to display viewing features system	Table B
11	No Code value	Standard product	Version
	01~ZZ	Special code	

Table A

S*	SUMSUNG LSI	T*	TOSHIBA LSI	Y*	SANYO LSI
M*	MOTOROLA LSI	E*	EPSON LSI	H*	HITACHI LSI
N*	NOVATEK	W*	SITRONIX LSI	A*	APANPEC LSI
R*	SHARP LSI	P*	PHILIPS LSI	J*	JRC LSI
U*	UMC GROUP LSI	Z*	HOTEK LSI	O*	OKI LSI
B*	RAIO	C*	ASLIC	F*	TOMATO LSI
G*	AVANT	L*	SUNPLUS LSI		

Table B

Operation Temperature		Normal Temp.(NT):0°C~50°C		Wide Temp.(WT):-20°C~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

TOP

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