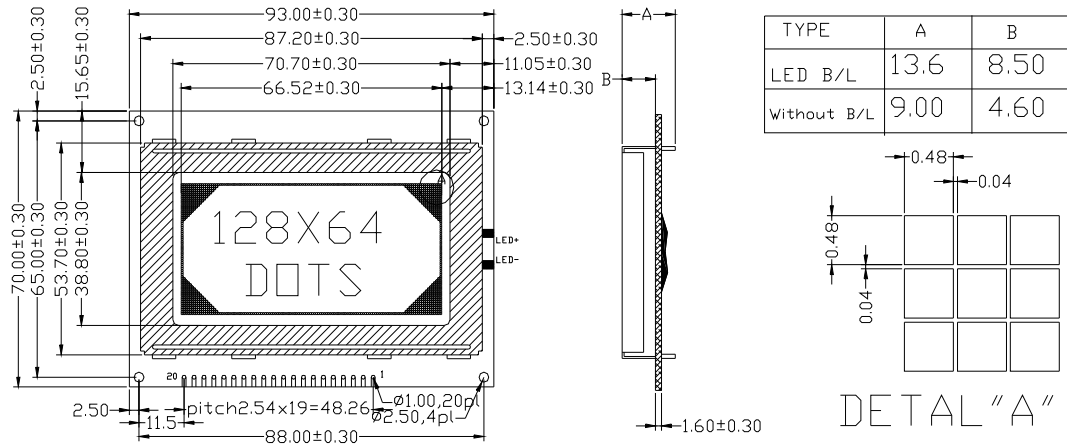


EXTERNAL DIMENSIONS AND DISPLAY PATTERN



MECHANICAL DATA (Nominal dimensions)

ITEM	SPECIFICATION	UNIT
Module Size(WxH)	93.0X70.0	mm
Viewing Area(WxH)	70.7X38.8	mm
Internal Area(WxH)	66.52X33.24	mm
Dot pitch(WxH)	0.48X0.48	mm
Dot Size(WxH)	0.52X0.52	mm
DOTS	128X64	dot

Absolute Maximum Ratings

Item	Symbol	Condition	Standard Value		unit
			min	max	
Supply Voltage for Logic	$V_{DD}-V_{SS}$	$T_a=25^{\circ}\text{C}$	0	6.5	V
Supply Voltage for LCD	$V_{DD}-V_{EE}$		0	18.0	V
Input Voltage	V_i		0	V_{DD}	V

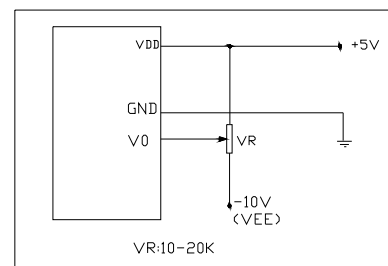
PIN CONFIGURATION

ITEM	SYMBOL	Level	DESCRIPTION
1	VSS	0	Ground
2	VDD	+5V	Supply voltage for logic
3	V_0	-	For LCD drive voltage
4	D/I	H/L	H:Display data L:Display instruction
5	R/W	H/L	H:Read signal sL:Write signal
6	E	H/L	Enable
7-14	DB0-DB7	-	Data bus
15	CS1	H/L	H:Read chip 1
16	CS2	H/L	H:Read chip 2
17	RET	H/L	Reset signal
18	VEE	-10V	Negative voltage for LCD driving
19	LED+	+5V	For LED backlight
20	LED-	0V	For LED backlight

ELECTRICAL CHARACTERISTICS

Power supply

Item	Symbol	Condition	Standard value			Unit
			min.	typ.	max.	
Supply Voltage for Logic	$V_{DD}-V_{SS}$	-	4.75	5.0	5.25	V
Supply Voltage for LCD	$V_{DD}-V_0$	-	-	13.0	-	V
Input high Voltage	V_{IH}	-	0.7 V_{DD}	-	V_{DD}	V
Input low Voltage	V_{IL}	-	0	-	0.3 V_{DD}	V
Supply Current for Logic	V_{OH}	$-I_{OH}=0.2\text{mA}$	-	4.0	-	mA
Supply Current for LCD	V_{OL}	$I_{OL}=1.2\text{mA}$	-	3.0	-	mA
With B/L	I_{LED}	$V_{DD}=5.0\text{V}$	-	150	-	mA
Drive method	1/64Duty		1/9Bias			



Block diagram

