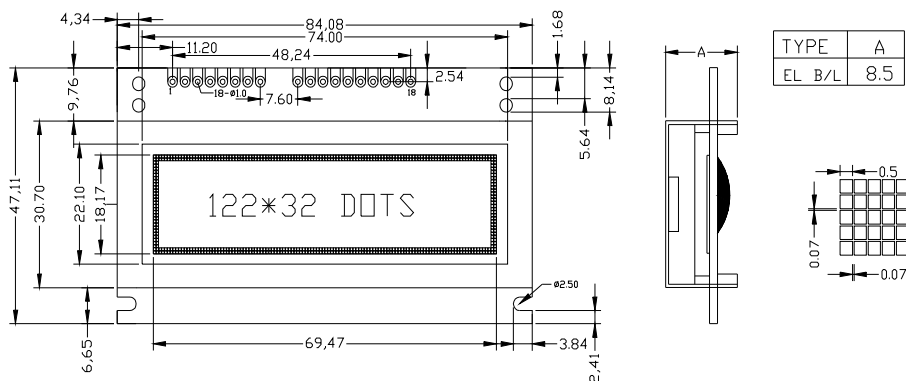


**TG12232D(EL)****TINSHARP ELECTRONICS CO.LTD****EXTERNAL DIMENSIONS AND DISPLAY PATTERN****MECHANICAL DATA (Nominal dimensions)**

ITEM	SPECIFICATION	UNIT
Module Size(WxH)	84.08X47.11	mm
Viewing Area(WxH)	74.0X22.1	mm
Internal Area(WxH)	69.47X18.17	mm
Dot pitch(WxH)	0.57x0.57	mm
Dot Size(WxH)	0.50x0.50	mm
DOTS	122x32	dot

Absolute Maximum Ratings

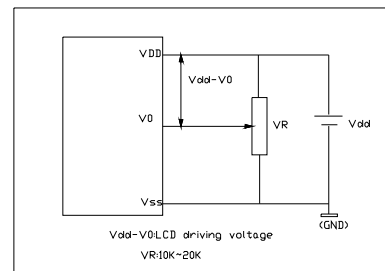
Item	Symbol	Condition	Standard Value		unit
			min	max	
Supply Voltage for Logic	$V_{DD}-V_{SS}$	$T_a=25^{\circ}\text{C}$	0	6.5	V
Supply Voltage for LCD	$V_{DD}-V_0$		0	5	V
Input Voltage	V_i		$V_{SS}-0.3$	$V_{DD}-0.3$	V

PIN CONFIGURATION

ITEM	SYMBOL	Level	DESCRIPTION
1	VDD	+3V~5V	Power supply
2	VSS	0V	Ground
3	V0	-	Power supply for LCD
4	RES	H/L	Reset signal
5	E1	H/L	Read/Write enable signal (Slave)
6	E2	H/L	Read/Write enable signal (Master)
7	R/W	H/L	Read/Write select signal
8	A0	H/L	Select display data instruction
9-16	D0-D7	-	Data bus
17	SW	-	EL backlight ON
18	NC	-	

ELECTRICAL CHARACTERISTICS**Power supply**

Item	Symbol	Condition	Standard value			Unit
			min.	typ.	max.	
Supply Voltage for Logic	$V_{DD}-V_{SS}$	-	4.5	5.0	5.5	V
Supply Voltage for LCD	$V_{DD}-V_0$	-	4.5	5.0	5.5	V
Input high Voltage	V_{IH}	-	$0.8V_{DD}$	-	V_{DD}	V
Input low Voltage	V_{IL}	-	V_{SS}	-	$0.2V_{DD}$	V
Supply Current for Logic	V_{OH}	$-I_{OH}=0.2\text{mA}$	-	3	-	mA
Supply Current for LCD	V_{OL}	$I_{OL}=1.2\text{mA}$	-	2	-	mA
With B/L	I_{EL}	$V_{DD}=5.0\text{V}$	-	35	-	mA
Drive method	1/32Duty		1/6Bias			

**Block diagram**