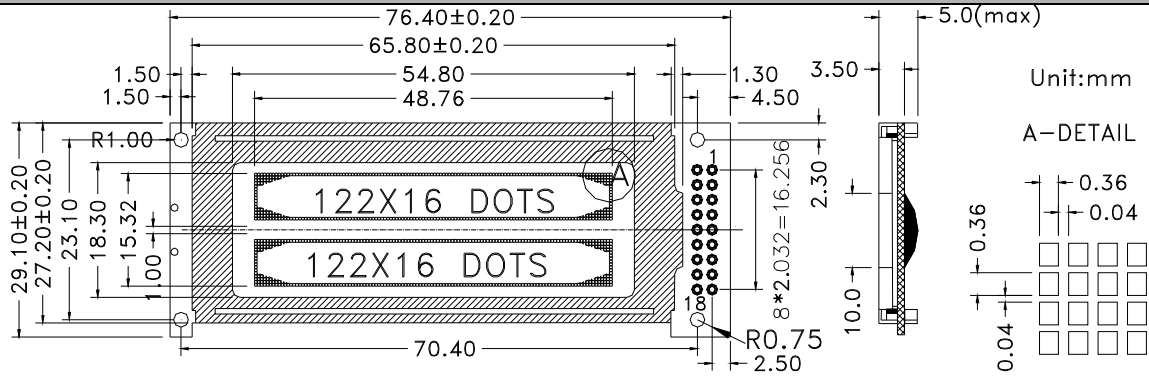




# TG12232G(L)

## TINSHARP ELECTRONICS CO.LTD

### EXTERNAL DIMENSIONS AND DISPLAY PATTERN



### MECHANICAL DATA (Nominal dimensions)

ITEM	SPECIFICATION	UNIT
Module Size( WxH )	76.4X29.1	mm
Viewing Area( WxH )	54.8X18.3	mm
Internal Area( WxH )	48.76X12.76	mm
Dot pitch( WxH )	0.40X0.40	mm
Dot Size( WxH )	0.36X0.36	mm
DOTS	122X32	dot

### PIN CONFIGURATION

ITEM	SYMBOL	Level	DESCRIPTION
1	VDD	+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 select signal
7	R/W	H/L	
8	A0	H/L	Select display data or instruction
9-16	D0-D7	-	Data bus
17	LED+	-	LED (5V)
18	LED-	-	LED (0)

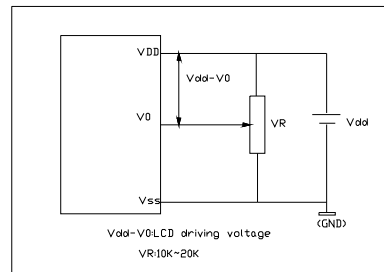
### Absolute Maximum Ratings

Item	Symbol	Condition	Standard Value		unit
			min	max	
Supply Voltage for Logic	$V_{DD}-V_{SS}$	$T_a=25^\circ\text{C}$	0	7.0	V
Supply Voltage for LCD	$V_{DD}-V_E$		0	5.0	V
Input Voltage	$V_i$		$V_{SS}-0.3$	$V_{DD}-0.3$	V

### ELECTRICAL CHARACTERISTICS

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	$I_{LED}$	$V_{DD}=5.0\text{V}$	-	40	-	mA
Drive method	1/32Duty		1/6Bias			

### Power supply



### Block diagram

