



**WINSTAR Display Co.,Ltd.**  
**華凌光電股份有限公司**

## SPECIFICATION

**MODULE NO.: WO13232A**

### General Specification

Item	Dimension	Unit
Number of dots	132 x 32	—
Module dimension	65.4 x 28.2 x 9.7	mm
View area	58.3 x 19.0	mm
Active area	52.78 x 14.38	mm
Dot size	0.38 x 0.43	mm
Dot pitch	0.40 x 0.45	mm
Duty	1/33duty , 1/6 Bias	
Backlight Type	LED	
IC	ST7567A	
Interface	I2C	

# Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	$T_{OP}$	-20	—	+70	°C
Storage Temperature	$T_{ST}$	-30	—	+80	°C
Input Voltage	$V_I$	-0.3	—	$V_{DD}+0.3$	V
Digital Power Supply Voltage	$V_{DD}-V_{SS}$	-0.3	—	4	V
LCD Power supply voltage	$V_0-XV_0$	-0.3	—	18	V

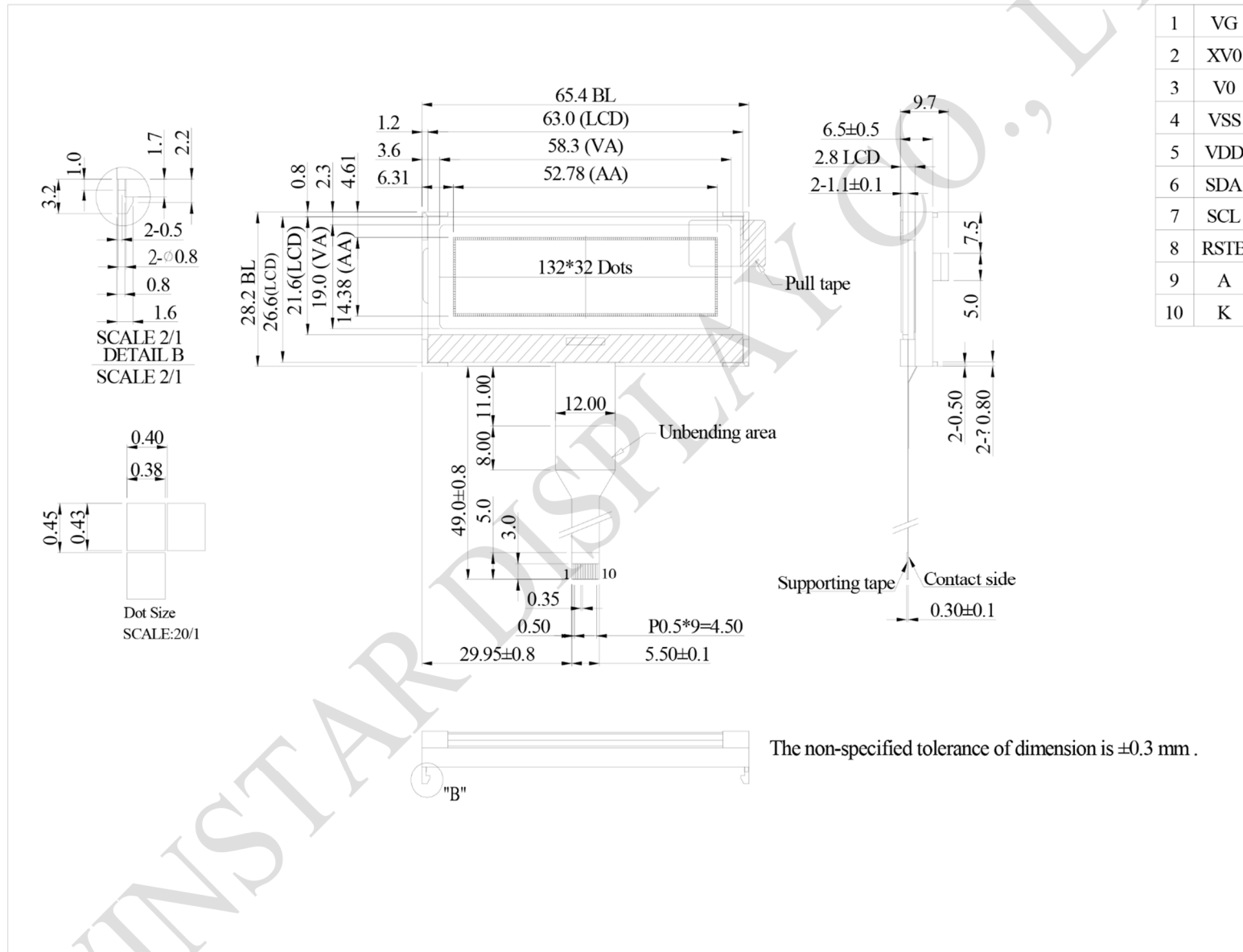
# Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	$V_{DD}-V_{SS}$	—	2.7	3.0	3.3	V
Supply Voltage For LCD	$V_{OP}$	$T_a=-20^{\circ}C$	—	—	—	V
		$T_a=25^{\circ}C$	7.8	8.0	8.2	V
		$T_a=70^{\circ}C$	—	—	—	V
Input High Volt.	$V_{IH}$	—	$0.7 V_{DD}$	—	$V_{DD}$	V
Input Low Volt.	$V_{IL}$	—	$V_{SS}$	—	$0.3 V_{DD}$	V
Output High Volt.	$V_{OH}$	—	$0.8 V_{DD}$	—	$V_{DD}$	V
Output Low Volt.	$V_{OL}$	—	$V_{SS}$	—	$0.2V_{DD}$	V
Supply Current	$I_{DD}$	—	—	—	1.5	mA

# Interface Pin Function

1	VG	VG is the LCD driving voltage for segment circuits.
2	XV0	XV0 is the LCD driving voltage for common circuits at positive frame.
3	V0	V0 is the LCD driving voltage for common circuits at negative frame.
4	VSS	Ground
5	VDD	Power supply
6	SDA	Serial Data signal
7	SCL	Serial clock input
8	RSTB	External reset pin
9	A	A
10	K	K

# Contour Drawing



1	VG
2	XV0
3	V0
4	VSS
5	VDD
6	SDA
7	SCL
8	RSTB
9	A
10	K

The non-specified tolerance of dimension is ±0.3 mm .