LCD / LCM SPECIFICATION



WINSTAR Display Co.,Ltd.
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SPECIFICATION

MODULE NO.: WO1602AT-xxxM#FC

General Specification

Item	Dimension	Unit
Number of Characters	16 characters x 2 Lines	—
Module dimension	51.2 x 20.7 x 6.3	mm
View area	40.0 x 10.0	mm
Active area	38.0 x 7.98	mm
Dot size	0.36 x 0.43	mm
Dot pitch	0.41 x 0.48	mm
Character size	2.00 x 3.79	mm
Character pitch	2.40 x 4.19	mm
Duty	1/16 , 1/5 Bias	
Backlight Type	LED	
IC	ST7032Ai	
Interface	I2C	

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Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T_{OP}	-20	—	+70	℃
Storage Temperature	T_{ST}	-30	—	+80	℃
Input Voltage	V_{IN}	-0.3	—	VDD+0.3	V
Power Supply Voltage	V_{DD}-V_{SS}	-0.3	—	+4.0	V
LCD Driver Voltage	V_{LCD}	-0.3	—	7.0	V

Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	V_{DD}-V_{SS}	—	2.9	3.0	3.1	V
Supply Voltage For LCD	V_{OP}	Ta=-20˚C	—	—	—	V
		Ta=25˚C	4.3	4.5	4.7	V
		Ta=70˚C	—	—	—	V
Input High Volt.	V_{IH}	—	0.7 V_{DD}	—	V_{DD}	V
Input Low Volt.	V_{IL}	—	V_{SS}	—	0.3V_{DD}	V
Supply Current(No include LED Backlight)	I_{DD}	—	—	0.16	1.0	mA

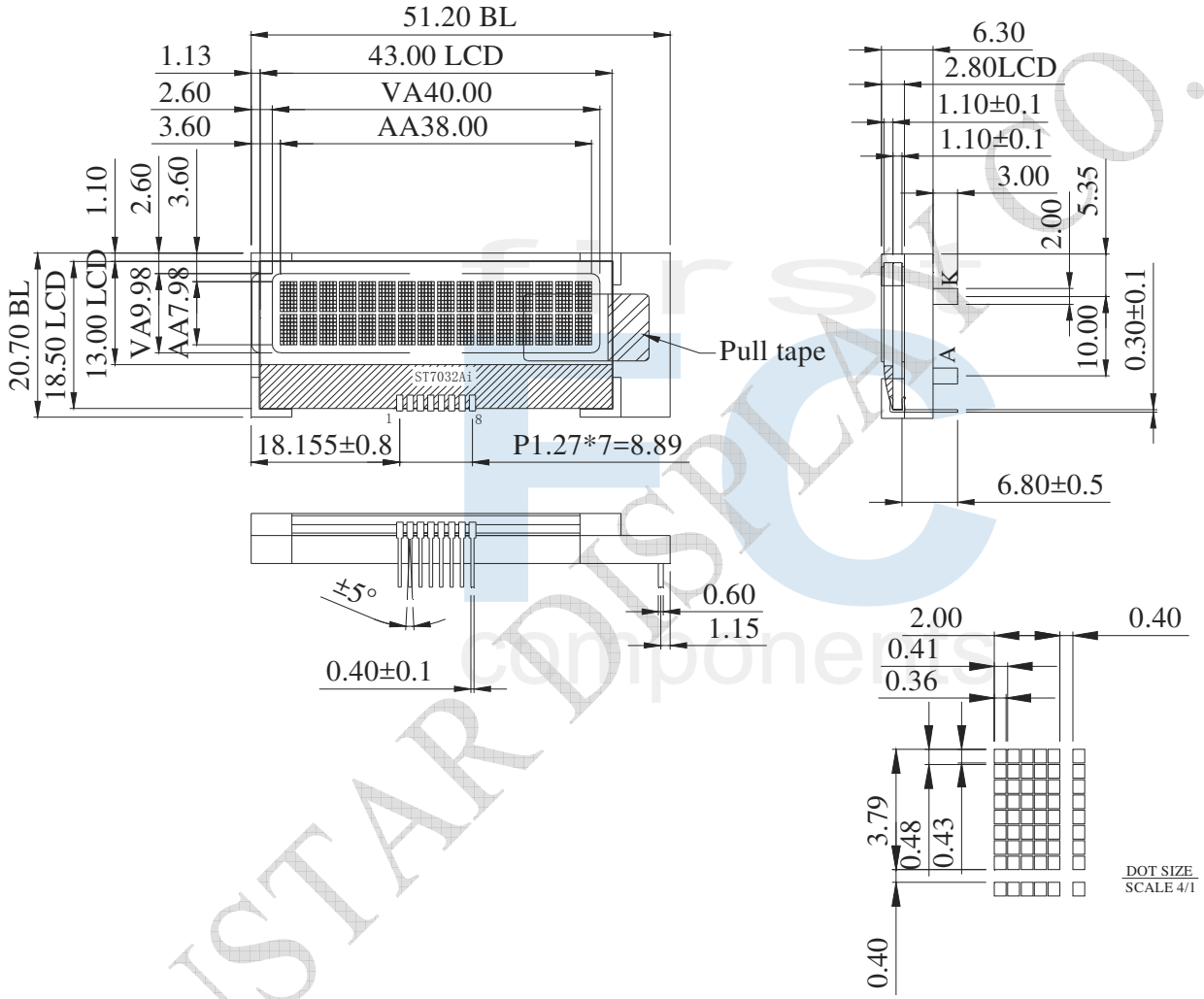
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Interface Pin Function

Pin No.	Symbol	Description
1	VG	VG is the LCD driving voltage for segment circuits. VGO is the output of VG regulator. VGS is the feedback of VG regulator. VGI is the VG input of segment circuits. 1.6 ≤ VG < VDD2.
2	XV0	XV0 is the LCD driving voltage for common circuits at positive frame. XV0OUT is the output of XV0 regulator. XV0S is the feedback of XV0 regulator. XV0I is the V0 input of common circuits.
3	V0	V0 is the LCD driving voltage for common circuits at negative frame. V0OUT is the output of V0 regulator. V0S is the feedback of V0 regulator. V0I is the V0 input of common circuits. Be sure that: V0 ≥ VG > VM > VSS ≥ XV0 (under operation).
4	VDD	Power supply input.
5	VSS	Ground
6	SDA	Serial data input
7	SCL	Serial clock input
8	RST	Hardware reset input pin. When RSTB is “L”, internal initialization is executed and the internal registers will be initialized.

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Contour Drawing &Block Diagram



PIN NO.	SYMBOL
1	VG
2	XV0
3	V0
4	VDD
5	VSS
6	SDA
7	SCL
8	RST

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

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