



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司



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SPECIFICATION

MODULE NO.:

WH2002D2

General Specification

Item	Dimension	Unit
Number of Characters	20 characters x 2Lines	—
Module dimension	89.0 x 21.5 x 9.0 (MAX)	mm
View area	75.0 x 15.0	mm
Active area	68.5x 10.7	mm
Dot size	0.55 x 0.60	mm
Dot pitch	0.60 x 0.65	mm
Character size	2.95 x 5.15	mm
Character pitch	3.45 x 5.55	mm
Duty	1/16	
Backlight Type	LED	
IC	RW1063	
Interface	IIC	

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_{IN}	-0.3	—	$V_{DD}+0.3$	V
Supply Voltage For Logic	$V_{DD}-V_{SS}$	-0.3	—	5.5	V
Supply Voltage For LCD	$V_{DD}-V_0$	$V_{SS}-0.3$	—	$V_{SS}+7.0$	V

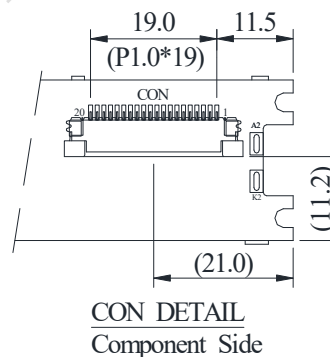
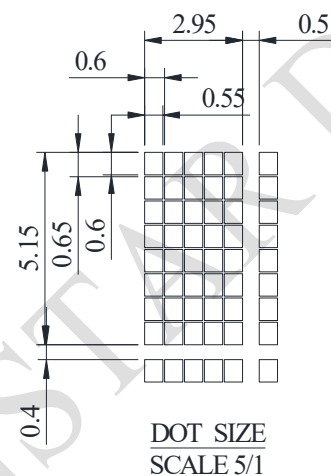
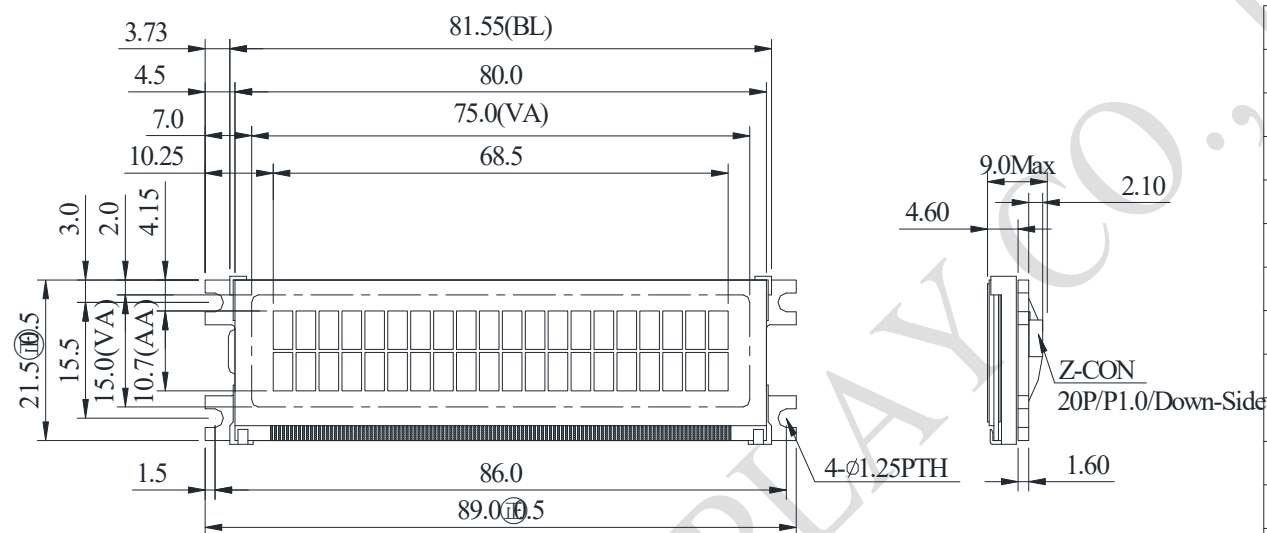
Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	$V_{DD}-V_{SS}$	—	3.0	3.3	3.6	V
Supply Voltage For LCD	$V_{DD}-V_0$	$T_a=-20^{\circ}\text{C}$	—	—	5.2	V
		$T_a=25^{\circ}\text{C}$	4.1	4.2	4.3	V
		$T_a=70^{\circ}\text{C}$	3.6	—	—	V
Input High Volt.	V_{IH}	—	$0.7 V_{DD}$	—	V_{DD}	V
Input Low Volt.	V_{IL}	—	-0.3	—	0.6	V
Output High Volt.	V_{OH}	—	$0.75 V_{DD}$	—	—	V
Output Low Volt.	V_{OL}	—	—	—	$0.2 V_{DD}$	V
Supply Current	I_{DD}	$V_{DD}=3.3\text{V}$	—	1.2	1.5	mA

Interface Pin Function

Pin No.	Symbol	Level	Description
1	NC	—	No connection
2	NC	—	No connection
3	V _{SS}	0V	Ground
4	V _{DD}	3.3V	Supply Voltage for logic
5	VO	(Variable)	Operating voltage for LCD
6	NC	—	No connection
7	NC	—	No connection
8	NC	—	No connection
9	SA0	H/L	In IIC interface ,DB1(SA1) and DB0(SA0) are used for Slave address, must be connect to VDD or VSS
10	SA1	H/L	
11	NC	—	No connection
12	NC	—	No connection
13	NC	—	No connection
14	CSB	H/L	In IIC serial mode, used as chip selection input. When CSB = “Low”, selected When CSB = “High”, not selected. (Low access enable)
15	SDA	H/L	serial input data
16	SCL	H/L	serial clock input
17	VLED+	—	Power supply for LED +
18	VLED-	—	Power supply for LED—
19	Vee	—	Negative voltage output
20	NC	—	No connection

Contour Drawing



PIN NO.	SYMBOL
1	NC
2	NC
3	Vss
4	Vdd
5	Vo
6	NC
7	NC
8	NC
9	SA0
10	SA1
11	NC
12	NC
13	NC
14	CSB
15	SDA
16	SCL
17	VLED+
18	VLED-
19	Vee
20	NC

The non-specified tolerance of dimension is $\pm 0.3\text{mm}$.