



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

SPECIFICATION

MODULE NO.: WG240128E-TFH-VZ#

General Specification

Item	Dimension	Unit
Number of dots	240 x 128	—
Module dimension	144.0 x 104.0 x 14.3(MAX)	mm
View area	114.0 x 64.0	mm
Active area	107.98 x 57.58	mm
Dot size	0.43 x 0.43	mm
Dot pitch	0.45 x 0.45	mm
Duty	1/128	
Backlight Type	LED	
IC	RA6963	
Interface	80 series	

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	—	+7.0	V

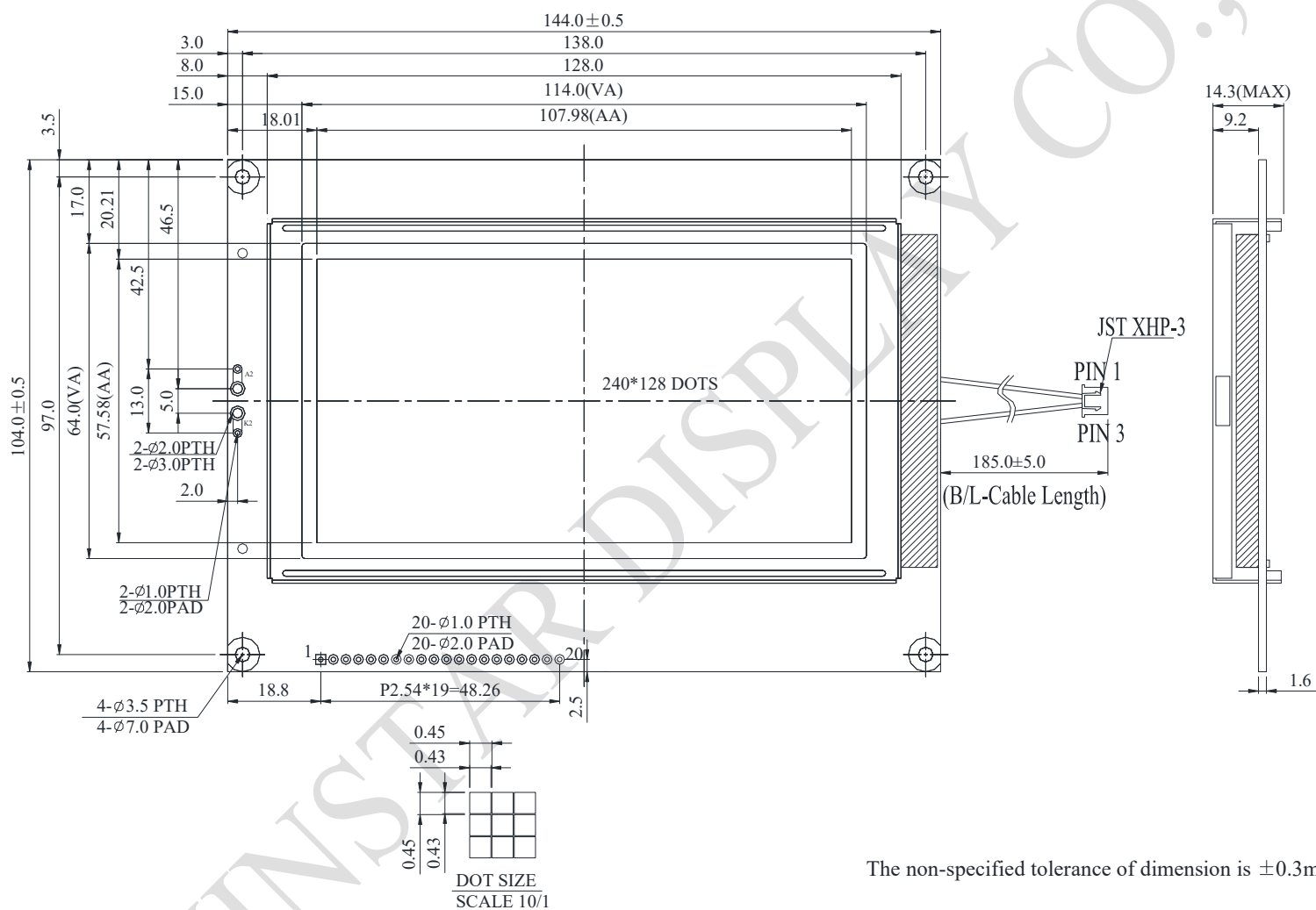
Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	$V_{DD}-V_{SS}$	—	4.5	5.0	5.5	V
Supply Voltage For LCD	$V_{DD}-V_0$	$T_a=-20^{\circ}\text{C}$	—	—	21.7	V
		$T_a=25^{\circ}\text{C}$	18.9	19.5	20.1	V
		$T_a=70^{\circ}\text{C}$	17.6	—	—	V
Input High Volt.	V_{IH}	—	$0.8V_{DD}$	—	V_{DD}	V
Input Low Volt.	V_{IL}	—	0	—	$0.15 V_{DD}$	V
Output High Volt.	V_{OH}	—	$V_{DD}-0.3$	—	V_{DD}	V
Output Low Volt.	V_{OL}	—	0	—	0.3	V
Supply Current	I_{DD}	—	45	55	60	mA

Interface Pin Function

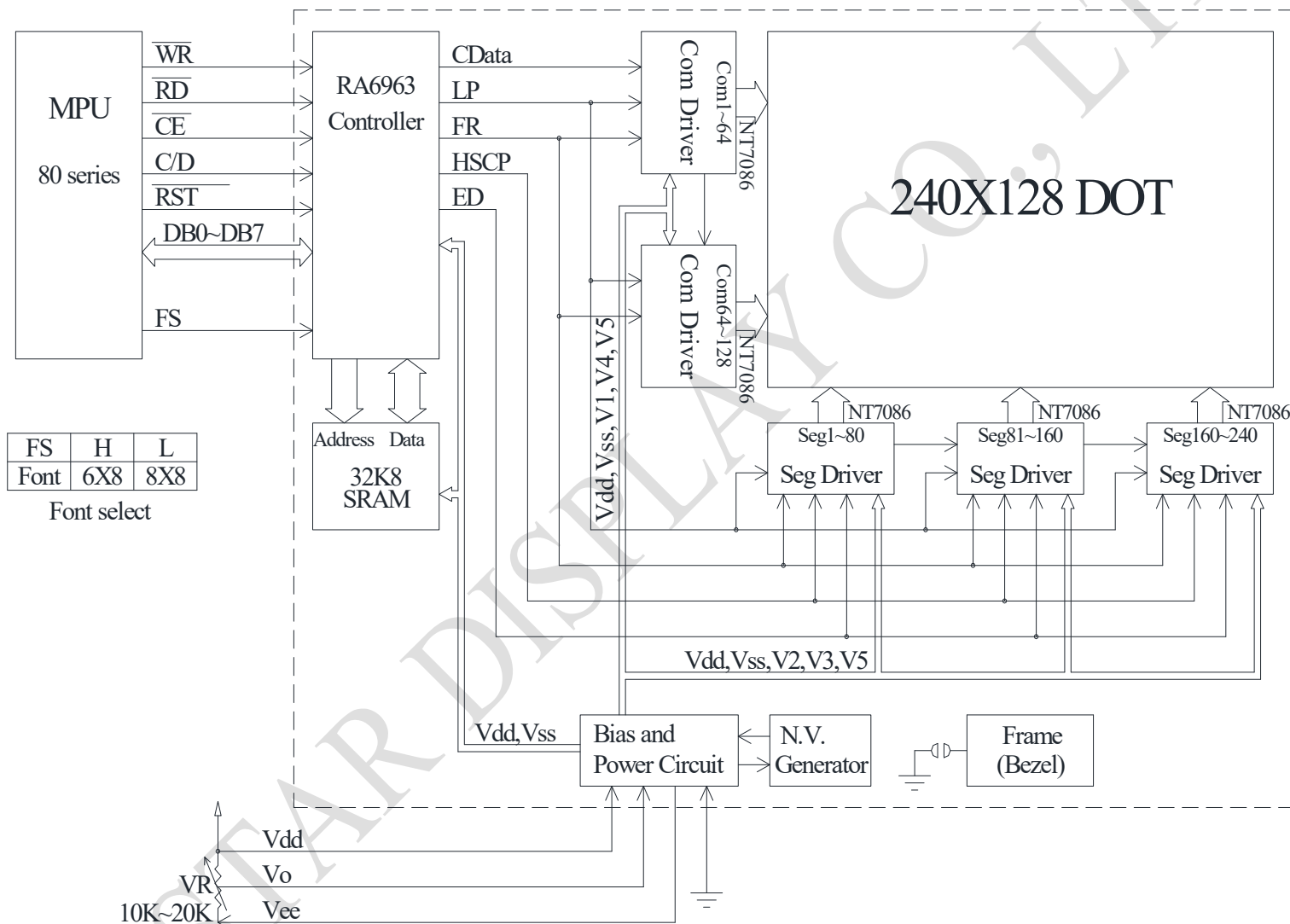
Pin No.	Symbol	Level	Description
1	Vee	—	Negative Voltage Output
2	Vss	—	GND
3	Vdd	—	Power supply
4	Vo	—	Power supply for LCD driver
5	/WR	L	Data write. Write data into RA6963when WR = L
6	/RD	L	Data read. Read data from RA6963when RD = L
7	/CE	L	L : Chip enable
8	C/D	H / L	WR=L , C/D=H : Command Write C/D=L: Data write RD=L , C/D=H : Status Read C/D=L: Data read
9	RST	—	Display Data signal
10	DB0	H / L	Data bus line
11	DB1	H / L	Data bus line
12	DB2	H / L	Data bus line
13	DB3	H / L	Data bus line
14	DB4	H / L	Data bus line
15	DB5	H / L	Data bus line
16	DB6	H / L	Data bus line
17	DB7	H / L	Data bus line
18	FS	—	Pins for selection of font; H : 6 * 8 , L : 8 * 8
19	NC	—	No connection
20	NC	—	No connection

Contour Drawing



PIN NO.	SYMBOL
1	V _{ee}
2	VSS
3	VDD
4	VO
5	WR
6	RD
7	CE
8	C/D
9	RST
10	DB0
11	DB1
12	DB2
13	DB3
14	DB4
15	DB5
16	DB6
17	DB7
18	FS
19	NC
20	NC

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



External contrast adjustment.