

# BOE

浙江京东方显示技术股份有限公司  
ZHEJIANG BOE DISPLAY TECHNOLOGY CO.,LTD

地址：浙江省绍兴市人民东路C-1号桥

Add: C-No.1 Bridge, East Renmin Road, Shaoxing, zhejiang

TEL: 0086-0575-8646699 0086-0575-8650406

FAX: 0086-0575-8650409

本产品符合RoHS标准  
This product is RoHS compliant

## 荧光显示屏产品规格书 SPECIFICATION OF VACUUM FLUORESCENT DISPLAY

<http://vfdclock.jimdo.com>

	Date	Description	Designed by
1	2004.4.23	ORIGINAL	
2	2004.6.15	灯丝电压调整；管脚折弯长度调整；改为单面引脚；改为直接阵列引脚；折弯尺寸调整；增加表面操作温度和产品寿命	黄伟
3	2005.6.9	增加显示内容中指针和数字的具体尺寸	黄伟
4	2005.7.28	缩小点子大小，使点子放在1G栅极下	黄伟
5	2005.9.22	管脚折弯长度由 $7.5 \pm 1.0$ 改为 $8.5 \pm 1.0$	黄伟
6			
7			
8			

Customer's Approval

Designed by	Checked by	Approved by
黄伟 05.9.22	马建峰 05.9.23	陈程 05.9.23

control No.	QG/ZBOE-VFD 030.07.3-05
Spec. No.	SPC04.04.28-05
MODEL	VFD48-1202FN

用途 Application	时钟 (CLOCK)
显示颜色 Color Of Illumination	绿色 Green (X=0.250 Y=0.440):

外形尺寸 Outer Dimensions	长 Panel Length	68.0±1.0mm
	宽 Panel Height	48.0±1.0mm
	厚 Panel Thickness	8.5±0.7mm
引出端子 Lead	端子间距 Lead Pitch	1.5mm
	端子引出形式 Lead Out	单列折弯

推荐工作电压 Recommended Operating Condition

项 目 Item	符 号 Symbol	最小值 Min	推荐值 Recommended	最大值 Max	单 位 Unit
灯丝电压 Filament Voltage	Ef	2.16	2.4	2.64	Vac
栅极电压 Grid Voltage	ec	—	30.0	33.0	Vp-p
阳极电压 Anode Voltage	eb	—	30.0	33.0	Vp-p
占空系数 Duty Factor	Du	—	1/13	—	—
脉冲宽度 Pulse Width	tp	—	100	—	μs
寿命 Life	—	30000	—	—	h
工作温度 Operating Temp	Top	-20	—	+70 <sup>*1</sup>	℃
储存温度 Storage Temp	Tstg	-55	—	+85 <sup>*2</sup>	℃

\*1 Exterior Operating temperature Max 120° 1000hours without Functional degradation.

\*2 Exterior Storage temperature Max 120° 1000hours without Functional degradation.

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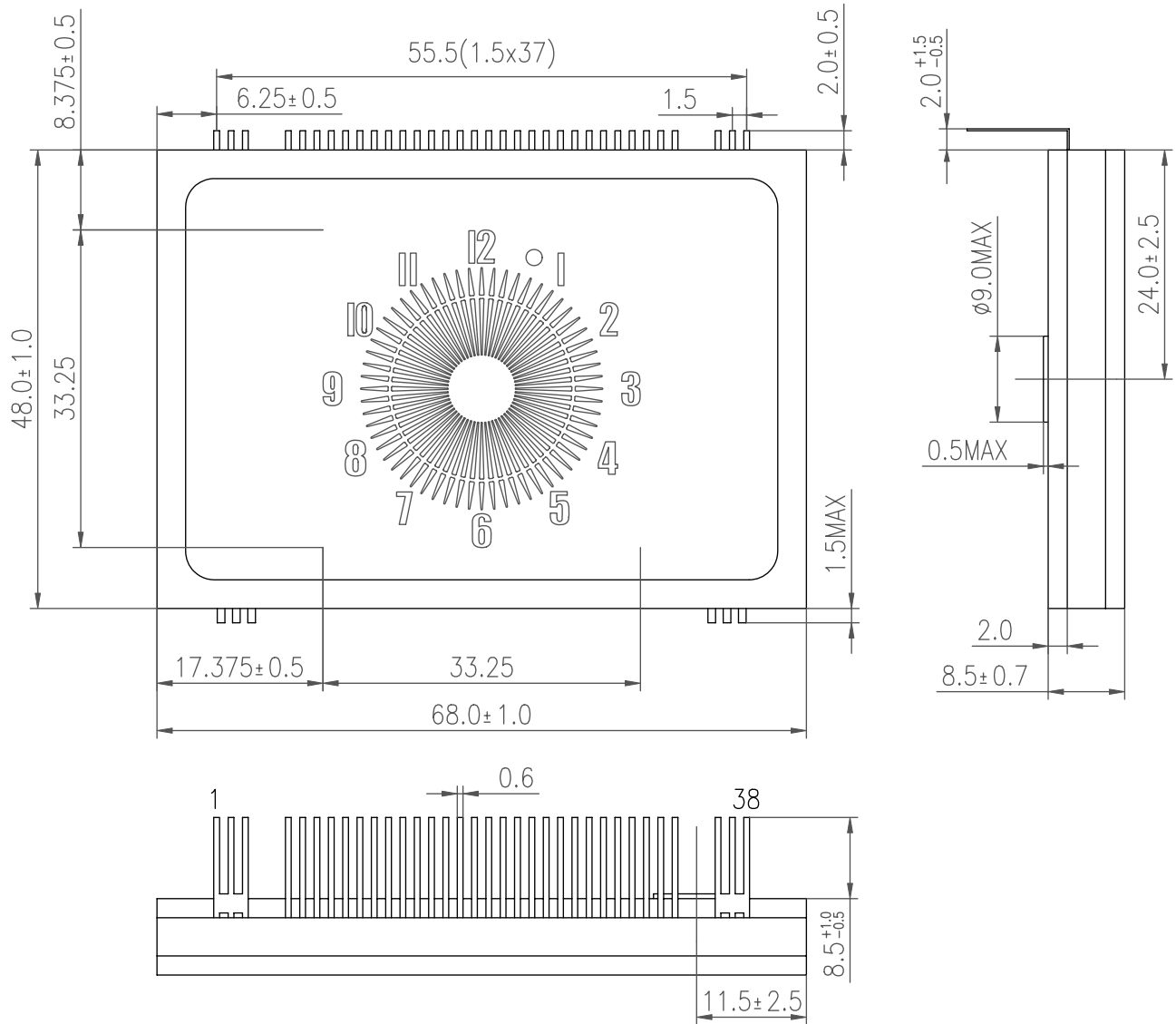
电气特性 Electrical Characteristics

项 目 Item	符 号 Symbol	测试条件 Test Condition	最小值 Min	典型值 Typical	最大值 Max	单 位 Unit
灯丝电流 Filament Current	If	Ef=2.4 Vac eb=ec=0	407.7	453.0	498.3	mAac
阳极电流 Anode Current	ib/1G~12G	Ef=2.4 Vac eb=30.0 Vp-p ec=30.0 Vp-p Du=1/13 tp=100μs (笔段全亮)	—	7.0	14.0	mAp-p
	—		—	—	—	mAp-p
	—		—	—	—	mAp-p
	—		—	—	—	mAp-p
栅极电流 Grid Current	ic/1G~12G	tp=100μs (笔段全亮)	—	8.0	16.0	mAp-p
	—		—	—	—	mAp-p
	—		—	—	—	mAp-p
	—		—	—	—	mAp-p
亮度 Luminance	L(G)		350 (102)	700 (204)	—	cd/m <sup>2</sup> (fl)
位间亮度比 Luminance Ratio	Lmin/Lmax		50	—	—	%
栅极截止电压 Grid Cut-off Voltage	Ecco	Ef=2.4 Vac Eb=30.0 Vdc	-7.0	—	—	Vdc
阳极截止电压 Anode Cut-off Voltage	Ebco	Ef=2.4 Vac ec=30.0 Vp-p Du=1/13 tp=100μs	-7.0	—	—	Vdc

注：驱动方式 动态  
Drive mode:Dynamic state

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附图1：外形图 Outline Drawing (Unit:mm)



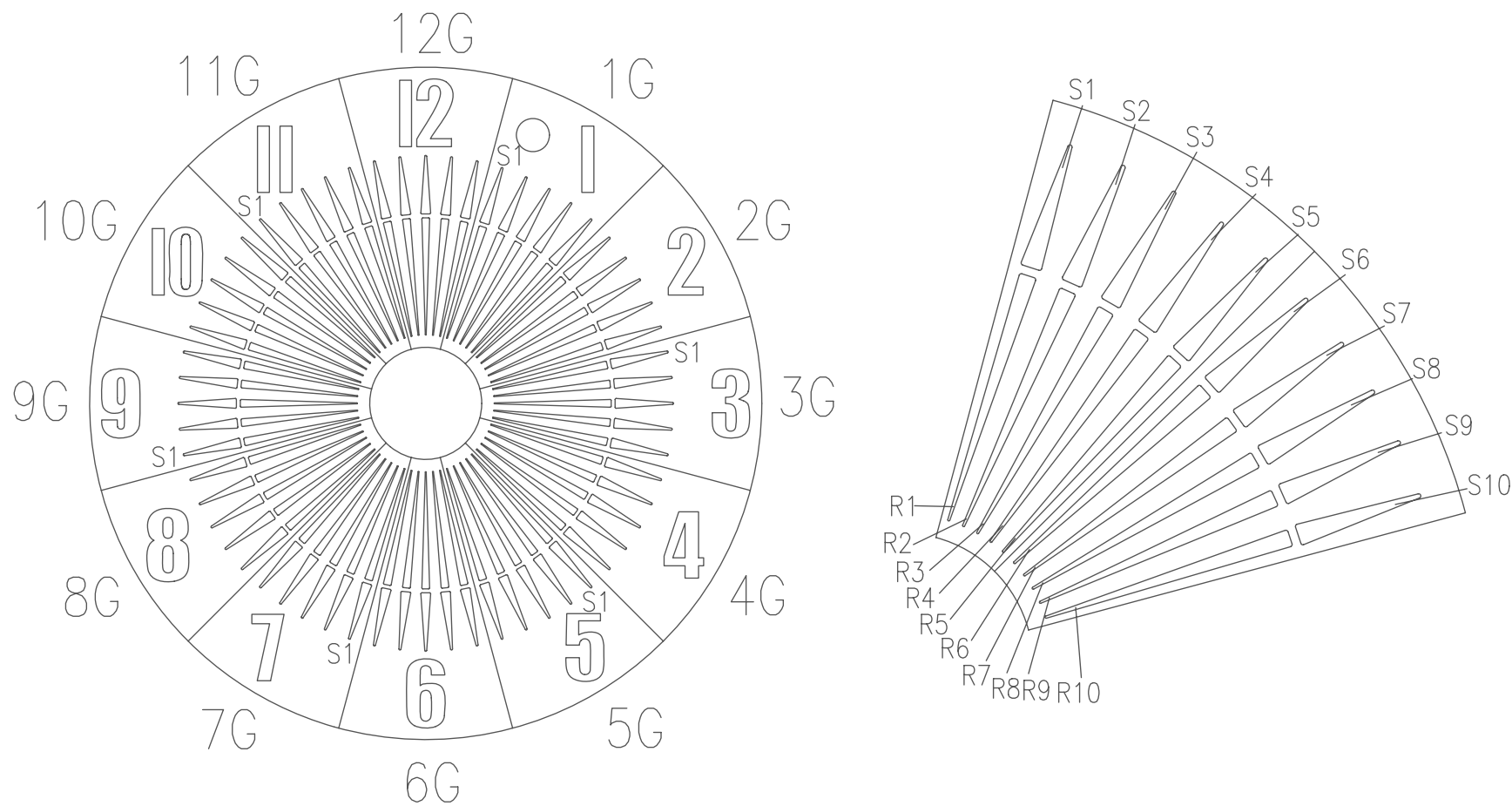
管脚连接 (PIN CONNECTION)

端子序号 (PIN NO.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
连接 (CONNECTION)	F1	F1	F1	NP	NP	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	P16	P15
端子序号 (PIN NO.)	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
连接 (CONNECTION)	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	NP	NP	F2	F2	F2

注：F: 灯丝 (Filament) P: 阳极 (Anode) G: 栅极 (Grid) NP: 无引出脚 (No pin)

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附图 2: 显示内容和栅网分割 Display Pattern and Grid Assignment

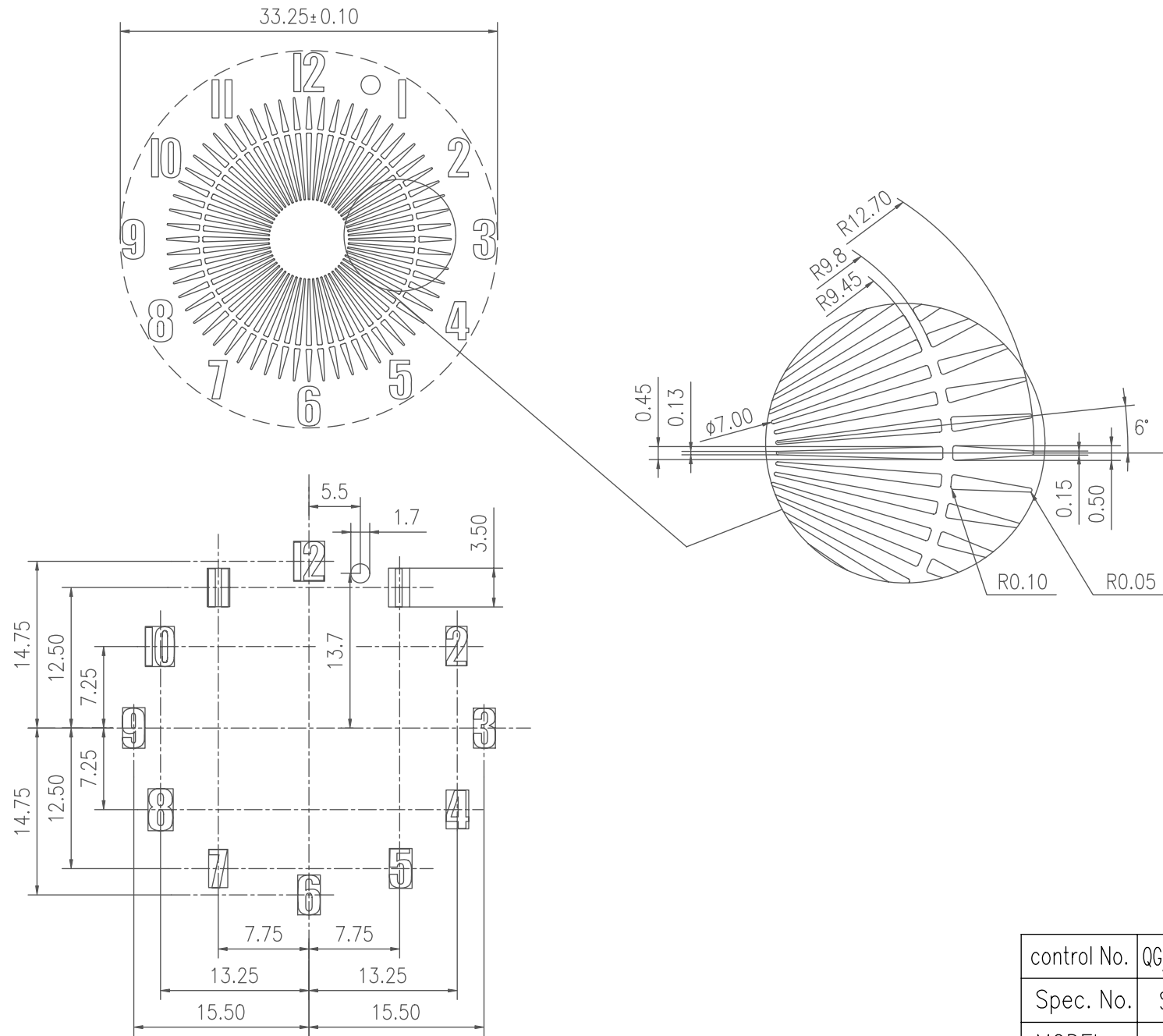


显示颜色 Colour of illumination:

绿色 Green (X=0.250 Y=0.440): 所有图形 All Patterns

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附图3:



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附图4：阳极连接 Anode Connection

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	1G
P1	○												
P2	1	2	3	4	5	6	7	8	9	10	11	12	
P3		S1		S1		S1		S1		S1		S1	
P4		S10		S10		S10		S10		S10		S10	
P5	S6		S6		S6		S6		S6		S6		
P6	S5		S5		S5		S5		S5		S5		
P7	S4	S9	S4	S9	S4	S9	S4	S9	S4	S9	S4	S9	
P8	S3	S8	S3	S8	S3	S8	S3	S8	S3	S8	S3	S8	
P9	S2	S7	S2	S7	S2	S7	S2	S7	S2	S7	S2	S7	
P10		R1		R1		R1		R1		R1		R1	
P11		R10		R10		R10		R10		R10		R10	
P12	R6		R6		R6		R6		R6		R6		
P13	R5		R5		R5		R5		R5		R5		
P14	R4	R9	R4	R9	R4	R9	R4	R9	R4	R9	R4	R9	
P15	R3	R8	R3	R8	R3	R8	R3	R8	R3	R8	R3	R8	
P16	R2	R7	R2	R7	R2	R7	R2	R7	R2	R7	R2	R7	

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