



Model	INR-13SM41
Application	POS
Color of Illumination	GREEN (G. : x=0.250, y=0.439)

<http://vfdclock.jimdo.com>

### ABSOLUTE MAXIMUM RATINGS #4)

Item	Symbol	Min.	Max.	Unit	Condition
Filament Voltage #2)	Ef	3.20	4.80	Vdc	eb,ec = Typ.
Anode Voltage	eb	—	33.0	Vp-p	Ef=Typ.
Grid Voltage	ec	—	33.0	Vp-p	
Operating Temperature	Topr	-40	+85	°C	—

### RECOMMENDED OPERATING CONDITION #5)

Item	Symbol	Min.	Typ.	Max.	Unit
Filament Voltage #2)	Ef	3.60	4.0	4.4	Vdc
Peak Anode Voltage	eb	25.0	28.0	31.0	Vp-p
Peak Grid Voltage	ec	25.0	28.0	31.0	Vp-p
Cut-Off Bias Voltage	Ek	2.0	—	—	Vdc
Duty Factor	Du	—	1/14	—	—
Pulse Width	tp	—	100	—	μs
Operating Temperature	Topr	-20	—	+70	°C
Storage Temperature	Tstg	-55	—	+85	°C

### ELECTRICAL CHARACTERISTICS

Item	Test Condition	Symbol	Min.	Typ.	Max.	Unit
Filament Current	Ef= 4.0 Vdc ,eb=ec=0	If	90	100	110	mAdc
Anode Current #1)	Ef= 4.0 Vdc eb= 28.0 Vp-p ec= 28.0 Vp-p	ib	—	4.0	8.0	mAp-p
Grid Current #1)	Duty= 1/14 tp= 100 μs tb= 0 μs	ic	—	5.0	10.0	mAp-p
Brightness		GREEN	102	204	—	ft-L
Brightness Ratio Between Digits		L(Max.) / L(Min.)	—	—	2	
Grid Cut-Off Voltage #3)	Ef= 4.0 Vdc Eb= 28.0 Vdc, Ec=Vary	Ecco	(-2.0)	—	—	Vdc
Anode Cut-Off Voltage #3)	Ef= 4.0 Vdc, Du= 1/14 ec= 28.0 Vp-p, Eb= Vary	Ebco	(-2.0)	—	—	Vdc

#1. Unless otherwise specified, the anode and the grid current should be measured for each grid when all anodes turn on.  
#2. DC driving voltage.

#3. The cut-off voltage measurement should be grounded at negative(-) side of the filament terminal.

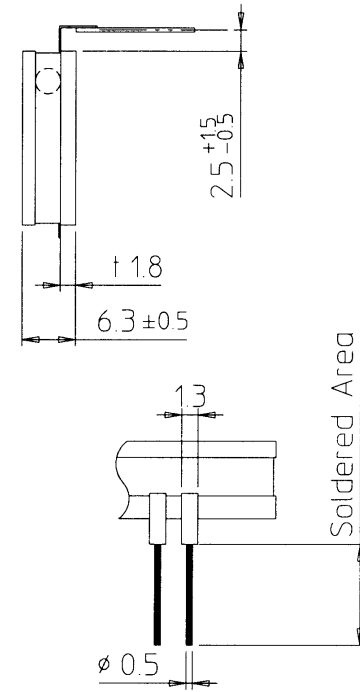
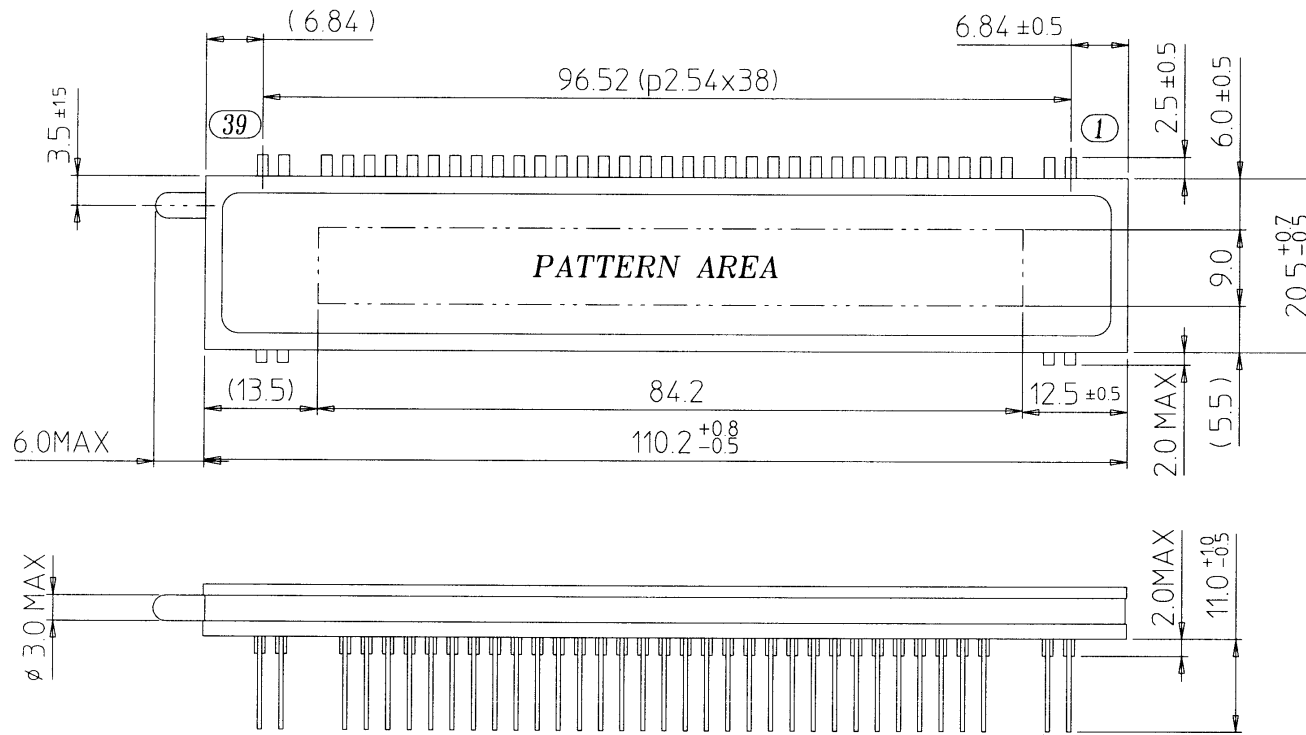
#4. Absolute Maximum Ratings : The value should not be exceeded in any conditions.

If a user don't keep this condition, then VFD may be permanently damaged.

#5. Recommended Operating Condition : Quality can be assured within this condition.

Typical rating is the most optimized value on the life time

# OUTER DIMENSIONS



LEAD DETAILS

# PIN CONNECTION

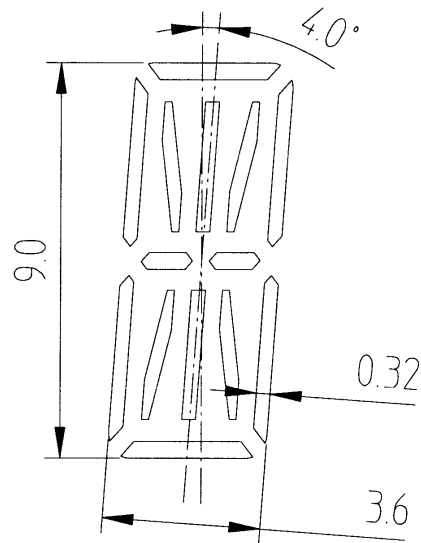
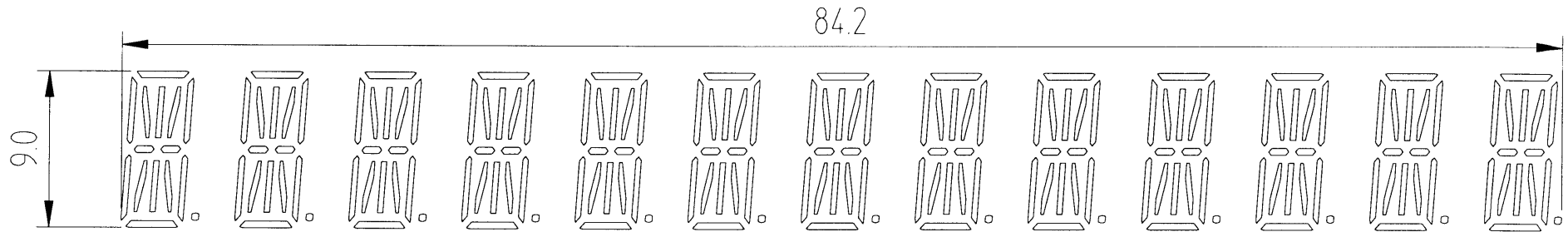
PIN NO.	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	0	9	8	7	6	5	4	3	2	1	
CONNECTION	F+	F+	N	N	13	12	11	10	9	8	7	6	5	4	3	2	1	NC	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	N	N	F-	F-

© Notes ©

- 1)  $F+, F-$  : Filament Pin
- 2)  $NP$  : No Pin
- 3)  $NC$  : No Connection Pin
- 4)  $Pn$  : Anode Pin
- 5)  $nG$  : Grid Pin

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# PATTERN DETAILS



© Color of Illumination ©

• Green (G.  $x=0.250$ ,  $y=0.439$ ) ----- All Patterns.

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# GRID ASSIGNMENT



13G

12G

11G

10G

9G

8G

7G

6G

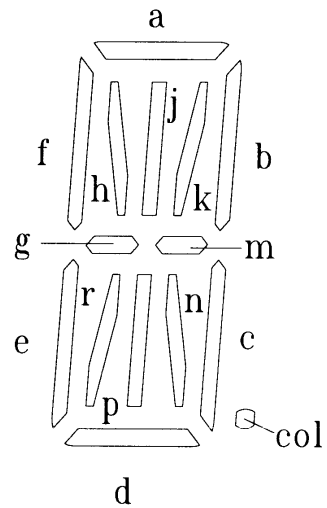
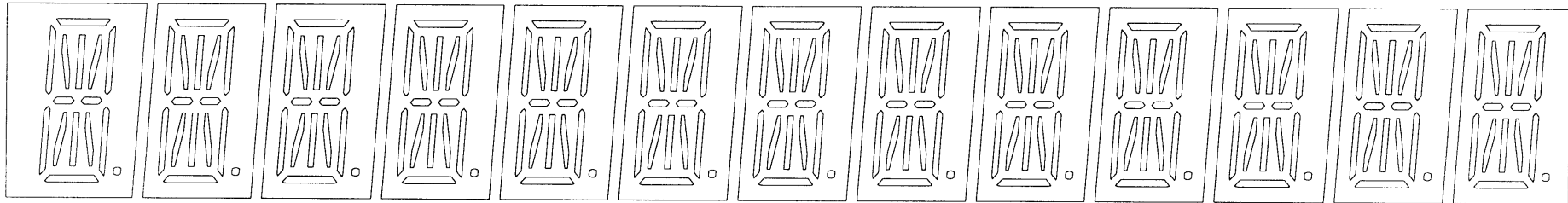
5G

4G

3G

2G

1G



( 1G ~ 13G )

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# ANODE CONNECTION



	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	a	a	a	a	a	a	a	a	a	a	a	a	a
P2	b	b	b	b	b	b	b	b	b	b	b	b	b
P3	k	k	k	k	k	k	k	k	k	k	k	k	k
P4	j	j	j	j	j	j	j	j	j	j	j	j	j
P5	h	h	h	h	h	h	h	h	h	h	h	h	h
P6	f	f	f	f	f	f	f	f	f	f	f	f	f
P7	g	g	g	g	g	g	g	g	g	g	g	g	g
P8	m	m	m	m	m	m	m	m	m	m	m	m	m
P9	c	c	c	c	c	c	c	c	c	c	c	c	c
P10	n	n	n	n	n	n	n	n	n	n	n	n	n
P11	p	p	p	p	p	p	p	p	p	p	p	p	p
P12	r	r	r	r	r	r	r	r	r	r	r	r	r
P13	e	e	e	e	e	e	e	e	e	e	e	e	e
P14	d	d	d	d	d	d	d	d	d	d	d	d	d
P15	col	col	col	col	col	col	col	col	col	col	col	col	col

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