

Model	HNS-11MS46T	Rev.① 08-Apr-2012
Application	STB	
Color of Illumination #6)	GREEN (G. :x=0.250,y=0.439) Cd-free REDDISH ORANGE (Cd-free Rsh.O. :x=0.62,y=0.37)	

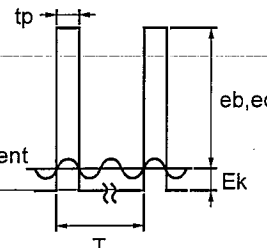
ABSOLUTE MAXIMUM RATINGS #4)

Item	Symbol	Min.	Max.	Unit	Condition
Filament Voltage #2)	Ef	—	3.00	Vac	eb,ec = Typ.
Anode Voltage	eb	—	32.0	Vp-p	Ef=Typ.
Grid Voltage	ec	—	32.0	Vp-p	
Operating Temperature	Topr	-40	+85	°C	—

RECOMMENDED OPERATING CONDITION #5)

Item	Symbol	Min.	Typ.	Max.	Unit
Filament Voltage #2)	Ef	2.25	2.50	2.75	Vac
Peak Anode Voltage	eb	24.0	27.0	30.0	Vp-p
Peak Grid Voltage	ec	24.0	27.0	30.0	Vp-p
Cut-Off Bias Voltage	Ek	3.8	—	5.7	Vdc
Duty Factor	Du	—	1/12	—	—
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= 2.5 Vac ,eb=ec=0	If	158	175	193	mAac	
Anode Current #1)	Ef= 2.5 Vac eb= 27.0 Vp-p ec= 27.0 Vp-p	ib	9G	—	3.0	6.0	mAp-p
			1G-7G,10G,11G	—	6.0	12.0	
			8G	—	12.0	24.0	
Grid Current #1)	Duty= 1/12 tp= 100 μS tb= 0 μS	ic	9G	—	3.5	7.0	mAp-p
			1G-7G,10G,11G	—	5.0	10.0	
			8G	—	12.0	24.0	
Brightness	 <p>(All Segs are lit)</p>	GREEN	350 (102)	700 (204)	—	cd/m ² (ft-L)	
		Cd-free Rsh.O.	50 (14.5)	100 (29)	—		
Brightness Ratio Between Digits		L(Max.) / L(Min.)	—	—	2		
Grid Cut-Off Voltage #3)	Ef= 2.5 Vac, Eb= 27.0 Vdc, Ec=Vary	Ecco	(-3.8)	—	—	Vdc	
Anode Cut-Off Voltage #3)	Ef= 2.5 Vac, Du= 1/12 ec= 27.0 Vp-p, Eb= Vary	Ebco	(-3.8)	—	—	Vdc	

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

#2. Based on common application of AC power source, switched frequency placed on 50Hz-60Hz would be acceptable.

However, considering nature characteristic of filament, 10KHz or above would be strongly recommended.

#3. The cut-off voltage should be measured under the condition of the center-tab ground.

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

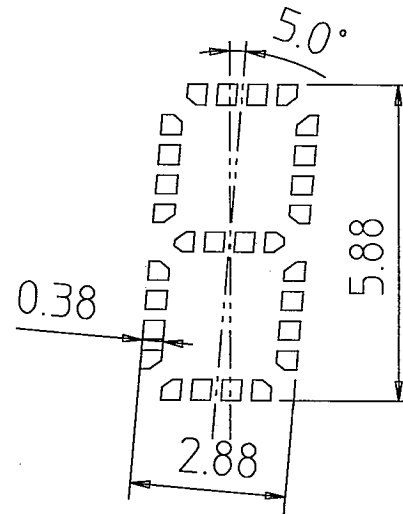
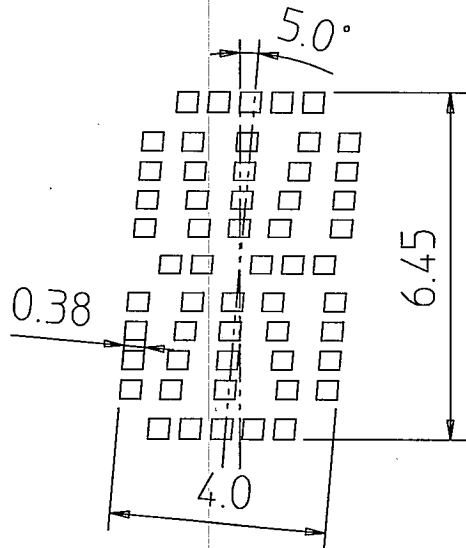
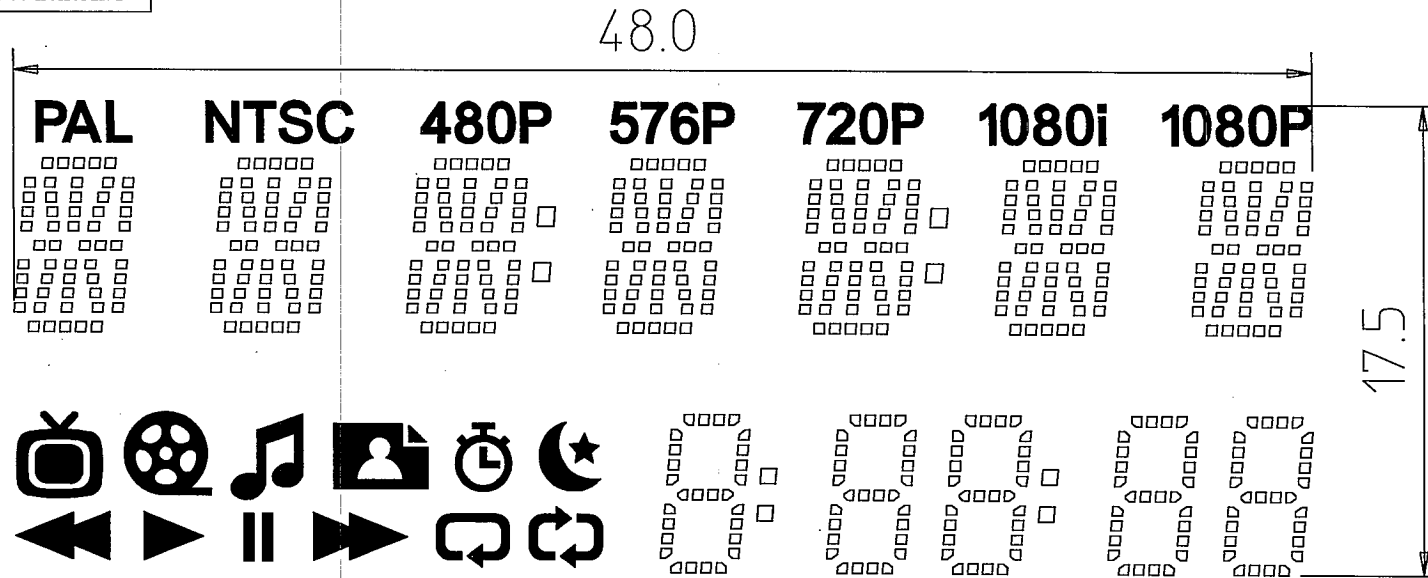
The value is not allowed to be longtime used, or else the VFD may be permanently damaged.

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

Typical rating is the most optimized value on the life time

#6. All phosphor is Cd-free phosphor.

PATTERN DETAILS



© Color of Illumination ©

• Cd-free Reddish Orange (Cd-free Rsh.0. $x=0.62, y=0.37$) --- Hatched patterns

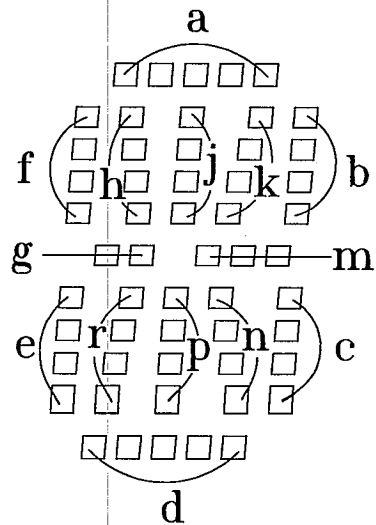
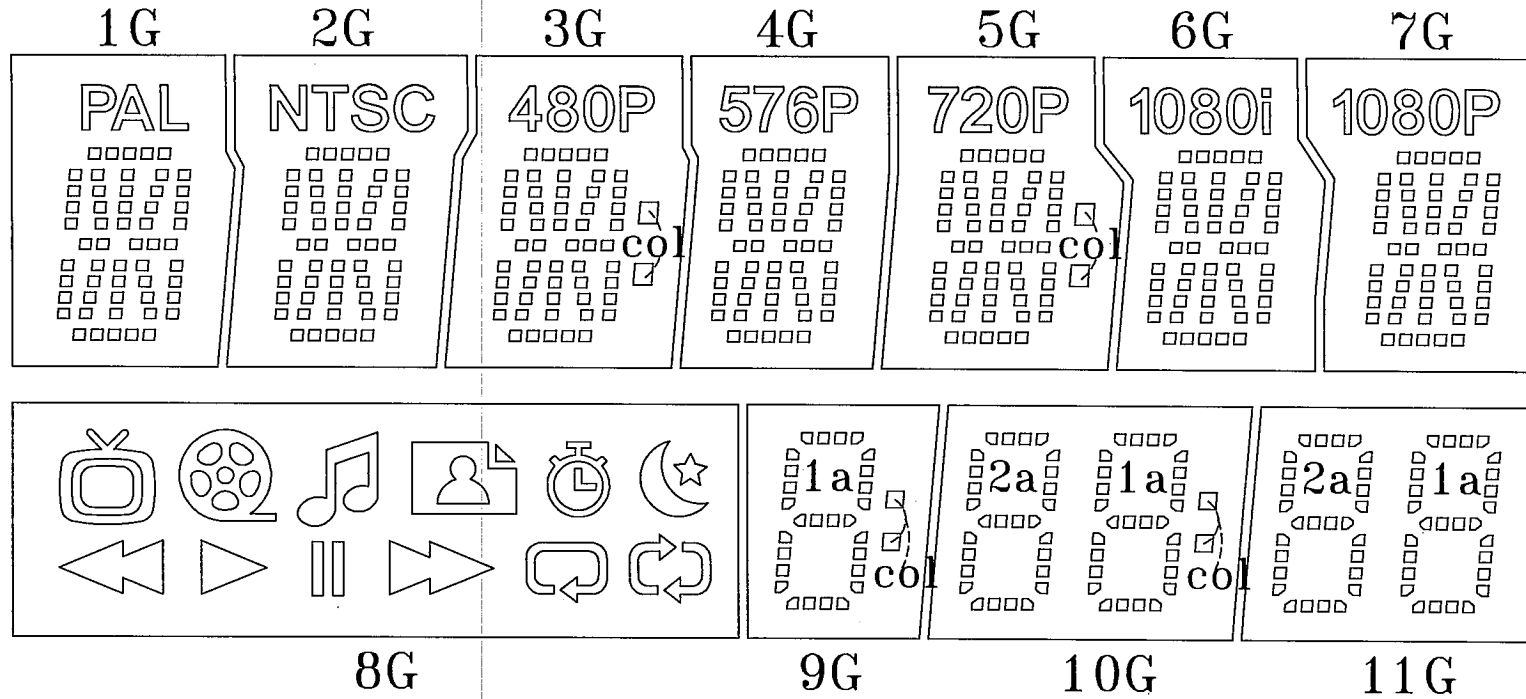
• Green (G. $x=0.250, y=0.439$) ----- Others

* Negative Patterns. ---

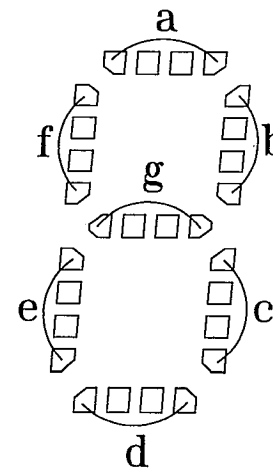


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GRID ASSIGNMENT















(1G-7G)



(9G-11G)

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ANODE CONNECTION

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G
P1	/	/	col	/	col	/	/	/	1a	1a	1a
P2	d	d	d	d	d	d	d	/	1b	1b	1b
P3	e	e	e	e	e	e	e	/	1f	1f	1f
P4	r	r	r	r	r	r	r		1g	1g	1g
P5	p	p	p	p	p	p	p		1e	1e	1e
P6	n	n	n	n	n	n	n		1c	1c	1c
P7	c	c	c	c	c	c	c		1d	1d	1d
P8	m	m	m	m	m	m	m		col	col	/
P9	g	g	g	g	g	g	g		/	2a	2a
P10	k	k	k	k	k	k	k		/	2b	2b
P11	j	j	j	j	j	j	j		/	2f	2f
P12	h	h	h	h	h	h	h		/	2g	2g
P13	f	f	f	f	f	f	f		/	2e	2e
P14	b	b	b	b	b	b	b		/	2c	2c
P15	a	a	a	a	a	a	a		/	2d	2d
P16	PAL	NTSC	480P	576P	720P	1080i	1080P	/	/	/	/

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