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NEWHAVEN DISPLAY INTERNATIONAL

User's Guide

D0109MT-25-1101

VFD- RoHS Compliant

(Vacuum Fluorescent Display Module)

For product support, contact

Newhaven Display International
2511 Technology Drive, #101
Elgin, IL 60124
Tel: (847) 844-8795 Fax: (847) 844-8796

February 21, 2008

NEWHAVEN DISPLAY INTERNATIONAL

October 31, 2006

Vacuum Fluorescent Display Specification

PART NUMBER: D0109MT-25-1101

FEATURES: 9 Digits – Seven Segmented, with custom segments, Decimals + Apostrophe

APPLICATION: Character Display- (7-Seg) - Scales

RATINGS: Below

Outer Dimensions	Panel Length	P.L.	112.0	mm
	Panel Height	P.H.	25.0	mm
	Panel Thickness	P.T.	6.8	mm
Leads	Lead Pitch	L.P.	2.54	mm
	Lead Out	-	SIL	
Character Size	Character Height	C.H.	9.7	mm
	Character Width	C.W.	-	mm

Item	Symbol	Min.	Recommended	Max.	Unit
Filament Voltage	Ef	3.9	4.3	4.7	Vac
Peak Grid Voltage	ec	-	25.0	30.0	Vp-p
Peak Anode Voltage	eb	-	25.0	30.0	Vp-p
Cut-off Bias	Ek	-	0	-	Vdc
Duty Cycle	Du	-	1/15	-	-
Pulse Width	tp	-	100	-	uS
Operating Temperature	Topr	-40	-	+ 85	C
Storage Temperature	Tstg	-50	-	+ 95	C
Color of Illumination	Green				

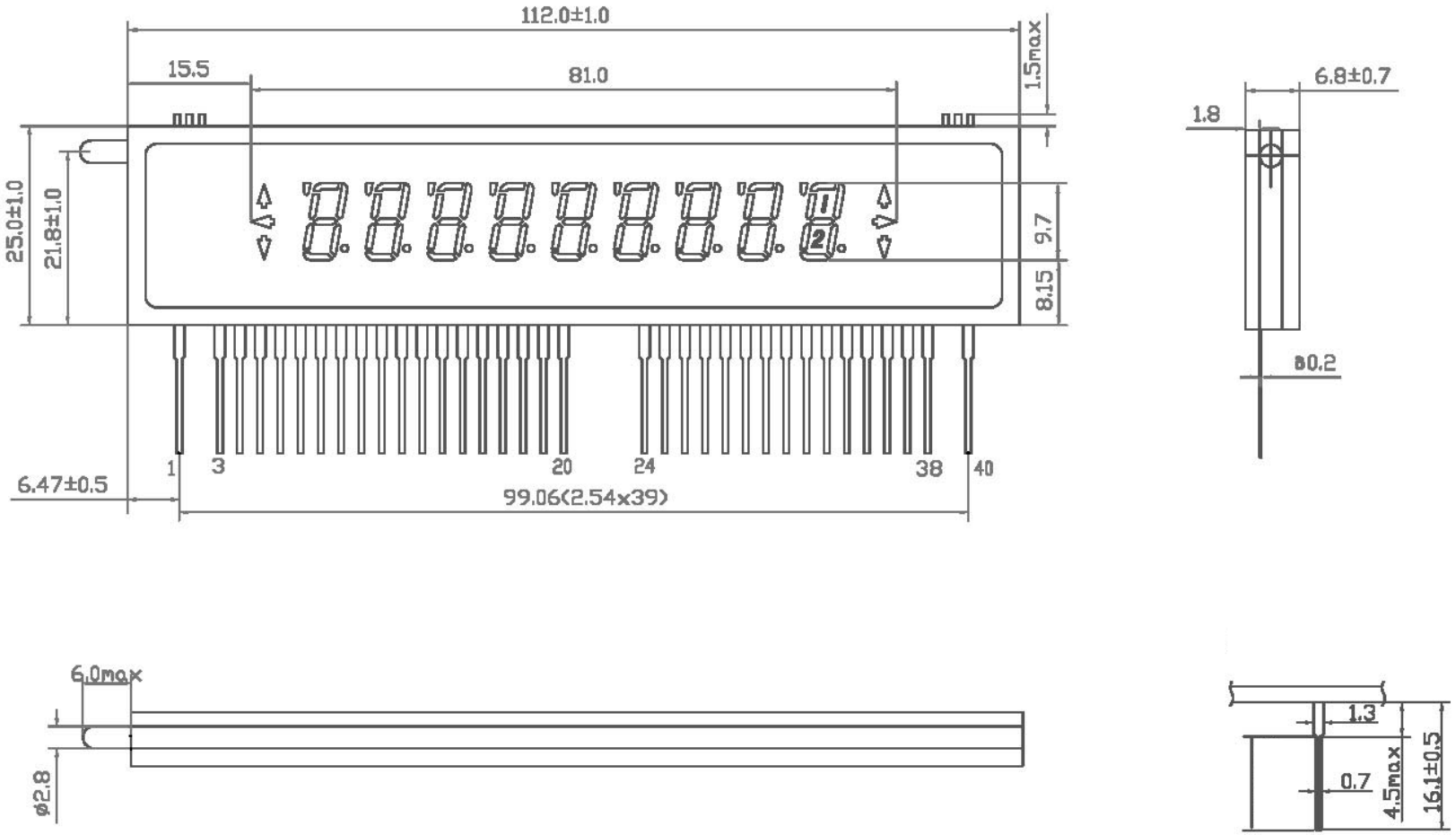
D0109MT-25-1101

Electrical Characteristics

Item	Symbol	Test Condition	Min.	Typical	Max.	Unit
Filament Current	If	Ef = 4.3 V_{ac}	70.0	78.0	86.0	mAac
	-	eb = ec = 0	-	-	-	-
Anode Current	ib / 1~11G	Ef = 4.3 V_{ac}	-	4.0	8.0	mAp-p
	-	eb = 25.0 V_{p-p}	-	-	-	-
	-	ec = 25.0 V_{p-p}	-	-	-	-
	-	Du = 1/15	-	-	-	-
	-	tp = 100uS	-	-	-	-
Grid Current	ic / 1~11G	(All segs are ON)	-	5.0	10.0	mA_{p-p}
	-		-	-	-	-
	-		-	-	-	-
	-		-	-	-	-
	-		-	-	-	-
	L(G)		350	700	-	cd/m^2
Luminance	-		(102)	(204)		fL
Luminance Ratio	Lmin/Lmax		50	-	-	%
Grid Cut-off Voltage	Ecco	Ef = 4.3 Vac Eb = 25.0 Vdc	-4.5	-	-	Vdc
Anode Cut-off Voltage	Ebco	Ef = 4.3 Vac ec = 25.0 Vp-p Du = 1/15 Tp = 100uS	-4.5	-	-	V_{dc}

DRIVE MODE: Dynamic State

1: Outline Drawing (Unit:mm)

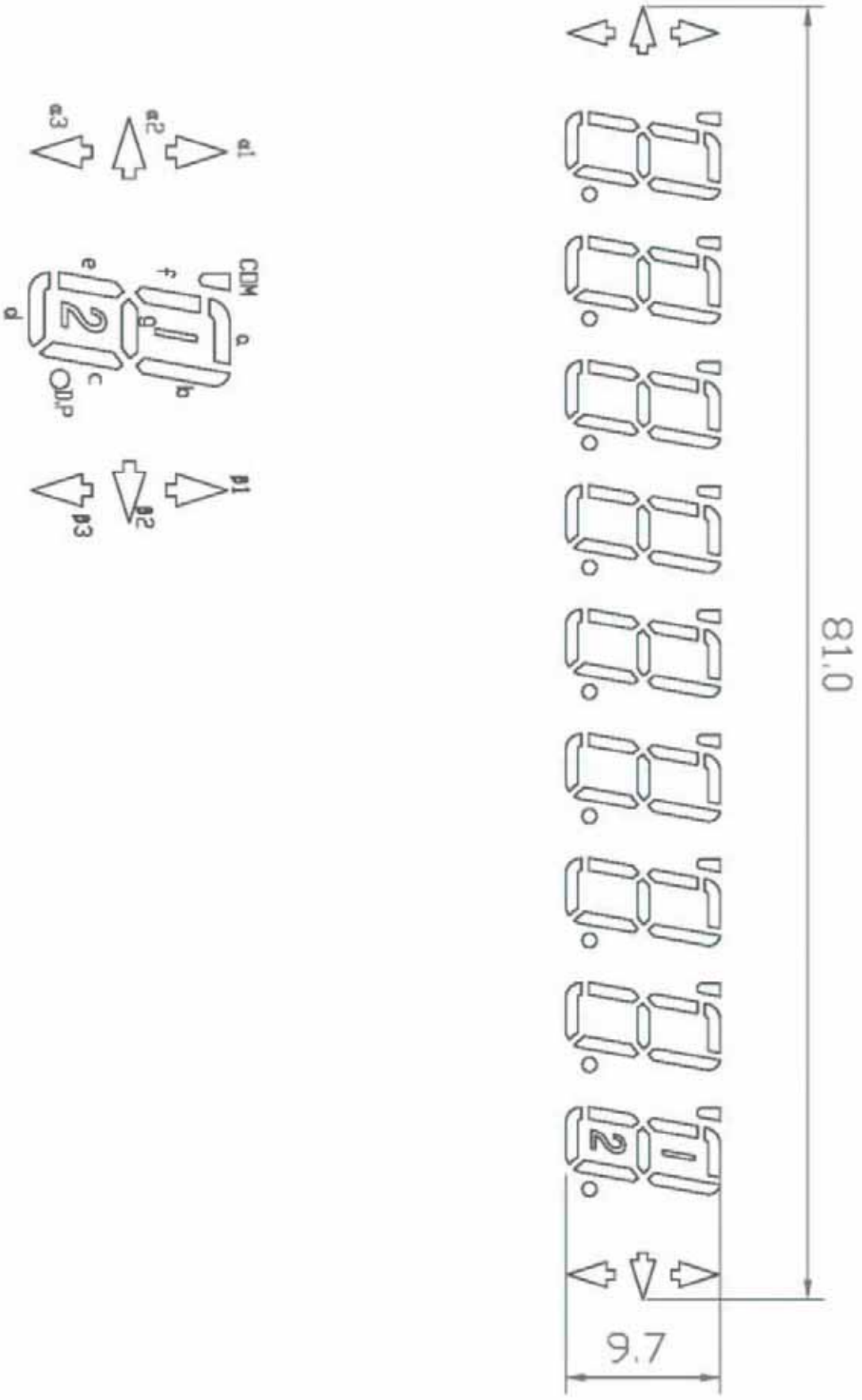


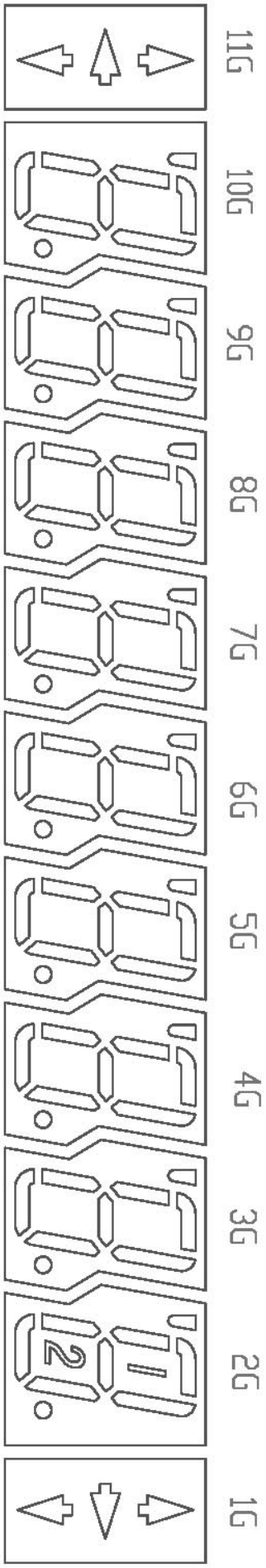
Pin Connections:

NOTE: F: Filament G: Grid P: Anode NP: No Pin NC: No Connection

Pin Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Connection	F	NP	P1	P2	11G	P3	NC	10G	NC	P4	9G	P5	P6	8G	NC	P7	7G	NC	NC	6G
Pin Number	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Connection	NP	NP	NP	5G	P8	P9	4G	P10	P11	3G	P12	NC	2G	P13	P14	1G	P15	P16	NP	F

2: *Grid Assignment:*




11G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G

4: Anode Connection:

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G
P1											α1
P2											α2
P3											α3
P4		g	g	g	g	g	g	g	g	g	
P5		f	f	f	f	f	f	f	f	f	
P6		e	e	e	e	e	e	e	e	e	
P7		d	d	d	d	d	d	d	d	d	
P8		D.P	D.P	D.P	D.P	D.P	D.P	D.P	D.P	D.P	
P9		c	c	c	c	c	c	c	c	c	
P10		b	b	b	b	b	b	b	b	b	
P11		a	a	a	a	a	a	a	a	a	
P12		COM	COM	COM	COM	COM	COM	COM	COM	COM	
P13		1 2									
P14	β3										
P15	β2										
P16	β1										