



User's Guide

C-33-1606F

VFD

(Vacuum Fluorescent Character Display Module)

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Vacuum Fluorescent Display Specification

PART NUMBER: C-33-1606F

FEATURES: 12 Digits, Custom Dot Matrix, with Icons – AUDIO

APPLICATION: Character Display (*Custom DM*)

RATINGS: Below

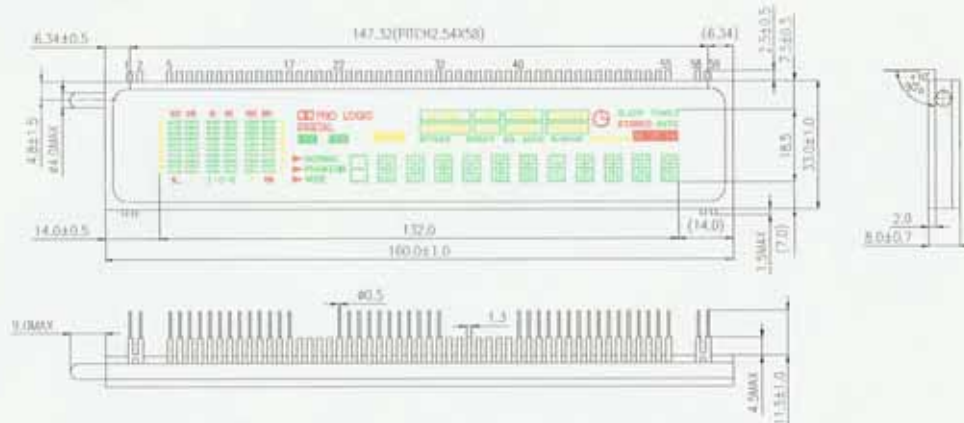
Outer Dimensions	Panel Length	P.L.	160.0	mm	
	Panel Height	P.H.	33.0	mm	
	Panel Thickness	P.T.	8.0	mm	
Leads	Lead Pitch	L.P.	2.5	mm	
	Lead Out	-	SIL		
Character Size	Character Height	C.H.	7.2	mm	
	Character Width	C.W.	5.0	mm	
Item	Symbol	Min.	Recommended	Max.	Unit
Filament Voltage	Ef	5.22	5.8	6.38	Vac
Peak Grid Voltage	ec	-	33.0	40.0	Vp-p
Peak Anode Voltage	eb	-	33.0	40.0	Vp-p
Cut-off Bias	Ek	-	-	-	-
Duty Cycle	Du	-	1/ 20	-	-
Pulse Width	tp	-	80	-	uS
Operating Temperature	Topr	-20	-	+ 70	C
Storage Temperature	Tstg	-55	-	+ 80	C
Color of Illumination	Green / Red / Yellow				

* Life = 10,000hrs to half brightness

Electrical Characteristics

Item	Symbol	Test Condition	Min.	Typical	Max.	Unit
Filament Current	If -	Ef = 5.8 Vac eb = ec = 0	162.0 -	180.0 -	198.0 -	mAac -
Anode Current	ib/2~12G	Ef = 5.8 Vac eb = 33.0 Vp-p ec = 33.0 Vp-p Du = 1/20 tp = 80 uS	-	6.5	13.0	mAp-p
	ib/14~16G		-	24.0	41.0	mAp-p
	ib/13G		-	38.0	65.0	mAp-p
	ib/1G		-	72.0	122.0	mAp-p
	-		-	-	-	-
Grid Current	Ic/2~12G		-	6.0	12.0	mAp-p
	Ic/14~16G		-	30.0	51.0	mAp-p
	Ic/13G		-	48.0	82.0	mAp-p
	Ic/1G		-	62.0	107.0	mAp-p
	-		-	-	-	-
Luminance	L(G)		350 (102)	700 (204)	-	cd/m ² (fL)
	L(R)		35 (10)	70 (20)		cd/m ² (fL)
	L(Y)		60 (17.5)	120 (35)		cd/m ² (fL)
Luminance Ratio	Lmin/Lmax		50	-	-	%
Grid Cut-off Voltage	Ecco	Ef = 5.0 Vac Eb = 33.0 Vdc	-6.1	-	-	Vdc
Anode Cut-off Voltage	Ebco	Ef = 5.0 Vac Ec = 33.0 Vp-p Du = 1/1620 tp = 80 uS	-6.1	-	-	Vdc

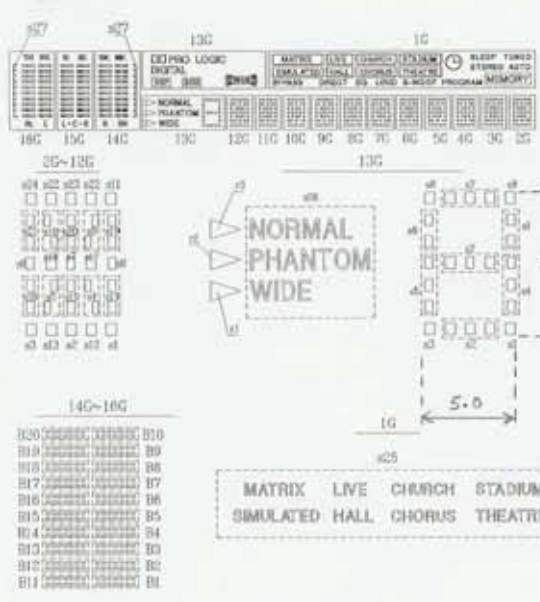
Drive Mode: Dynamic state



PINOUT CONNECTIONS

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18-21	22	23
Connect	F1	F1	Np	Np	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	Nc	P14	P15
Pin No.	24	25	26	27	28	29	30	31	32	33-39	40	41	42	43	44	45	46	47	48	49
Connect	P16	P17	P18	P19	P20	P21	P22	P23	P24	Nc	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G
Pin No.	50	51	52	53	54	55	56	57	58	59										
Connect	11G	12G	13G	14G	15G	16G	Np	F2	F2											

F1 G1 P1 Np1 Nc1
 Filament Grid Anode No Pin No Connection



IC	20-120	230	14C	15C	16C
P1	[STANBY] s1	s1	B	L	RL
P2	[STANBY] s12	s2	BB	-C-	L
P3	[LAMP] s1	s3	s27	B	s27
P4	[MATRIX] s1	s26	B1	B1	B1
P5	TUNED	s3	B11	B11	B11
P6	ALERT	s14	s4	B2	B2
P7	AUTO	s4	s2	B12	B12
P8	STAND	s15	s3	B3	B3
P9	[CLOCK]	s5	s5	B13	B13
P10	s25	s16	s7	B4	B4
P11	[THEATRE]	s8	s8	B14	B14
P12	[STADIUM]	s18	s8	B5	B5
P13	[HALL]	s7	s9	B15	B15
P14	[CHORUS]	s17	DB	B6	B6
P15		s6	BB	B16	B16
P16		s21	DB	B7	B7
P17		s10	DIGITAL	B17	B17
P18	MEMORY	s20	PERD LOCK	B8	B8
P19	PROGRAM	s9	EE	B18	B18
P20	S-IMP	s19		B9	B9
P21	LAND	s24		B19	B19
P22	RR	s22		B10	B10
P23	IMP	s23		B20	B20
P24	STANBY	s11		20K	20K