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## User's Guide

# C-20-0902

# VFD

(Vacuum Fluorescent Character Display Module)

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October 31, 2006

# Vacuum Fluorescent Display Specification

**PART NUMBER:** C-20-0902

**FEATURES:** 8 Digits, Custom Alphanumeric, with Icons – AUDIO

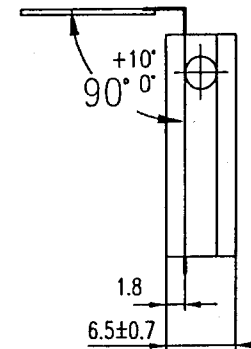
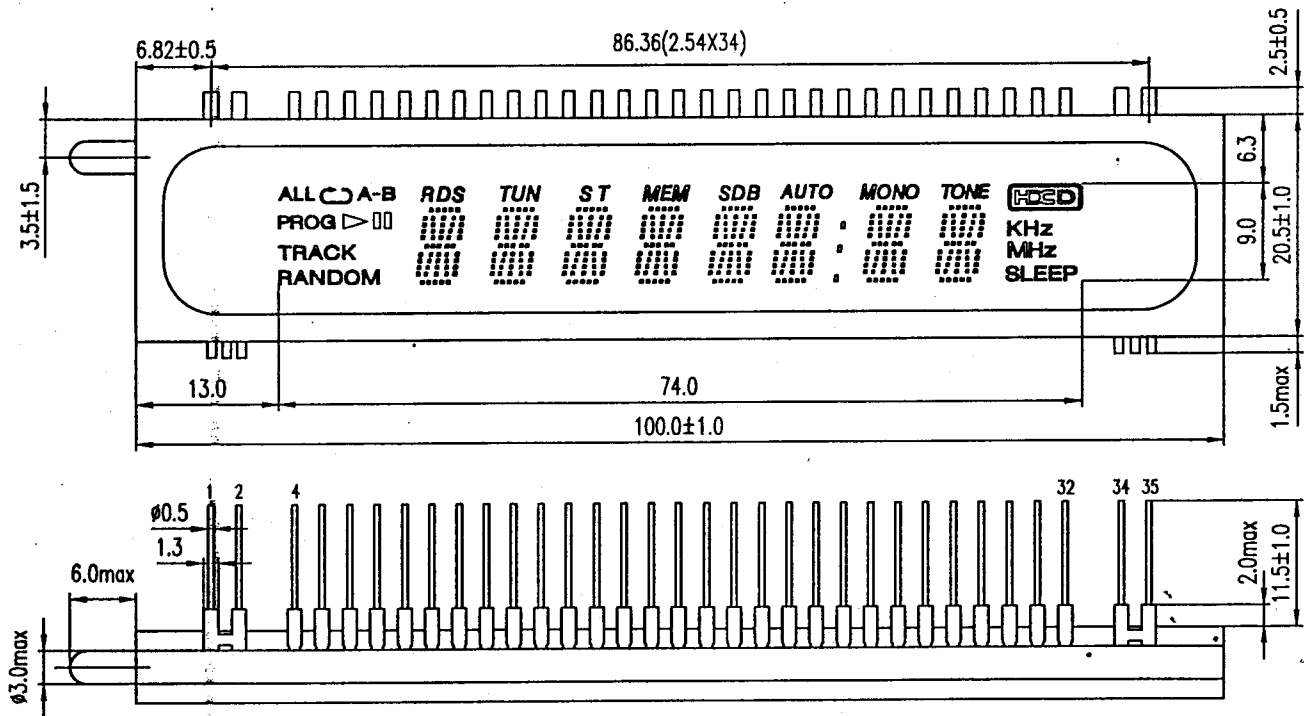
**APPLICATION:** Character Display (Custom *Alpha*)

**RATINGS:** Below

<b>Outer Dimensions</b>	Panel Length	P.L.	100.0	mm	
	Panel Height	P.H.	20.5	mm	
	Panel Thickness	P.T.	6.5	mm	
<b>Leads</b>	Lead Pitch	L.P.	2.54	mm	
	Lead Out	-	SIL		
<b>Character Size</b>	Character Height	C.H.	15.5	mm	
	Character Width	C.W.	5.2	mm	
<b>Item</b>	<b>Symbol</b>	<b>Min.</b>	<b>Recommended</b>	<b>Max.</b>	<b>Unit</b>
<b>Filament Voltage</b>	Ef	3.3	3.7	4.0	Vac
<b>Peak Grid Voltage</b>	ec	-	26.0	31.0	Vp-p
<b>Peak Anode Voltage</b>	eb	-	26.0	31.0	Vp-p
<b>Cut-off Bias</b>	Ek	-	-	-	-
<b>Duty Cycle</b>	Du	-	1/ 10	-	-
<b>Pulse Width</b>	tp	-	100	-	uS
<b>Operating Temperature</b>	Topr	-20	-	+ 70	C
<b>Storage Temperature</b>	Tstg	-55	-	+ 85	C
<b>Color of Illumination</b>	Green / Red				

**Electrical Characteristics**

Item	Symbol	Test Condition	Min.	Typical	Max.	Unit
<b>Filament Current</b>	lf -	Ef = 3.7 Vac eb = ec = 0	99.0 -	110.0 -	121.0 -	mAac -
<b>Anode Current</b>	ib/2~9G	Ef = 3.7 Vac eb = 26.0 Vp-p ec = 26.0 Vp-p Du = 1/10 tp = 100 uS	-	8.0	16.0	mAp-p
	ib/1G		-	14.0	28.0	mAp-p
	-		-	-	-	mAp-p
	-		-	-	-	mAp-p
	-		-	-	-	mAp-p
<b>Grid Current</b>	ic/2~9G		-	7.0	14.0	mAp-p
	ic/1G		-	12.0	28.0	mAp-p
	-		-	-	-	mAp-p
	-		-	-	-	mAp-p
	-		-	-	-	mAp-p
<b>Luminance</b>	L(G)		350 (102)	700 (204)	-	cd/m <sup>2</sup> (fL)
	L(R)		35 (10)	70 (20)		cd/m <sup>2</sup> (fL)
	-		-	-		cd/m <sup>2</sup> (fL)
<b>Luminance Ratio</b>	Lmin/Lmax		50	-	-	%
<b>Grid Cut-off Voltage</b>	Ecco	Ef = 3.7 Vac Eb = 26.0 Vdc	-5.5	-	-	Vdc
<b>Anode Cut-off Voltage</b>	Ebco	Ef = 3.7 Vac ec = 26.0 Vp-p Du = 1/10 tp = 100 uS	-5.5	-	-	Vdc

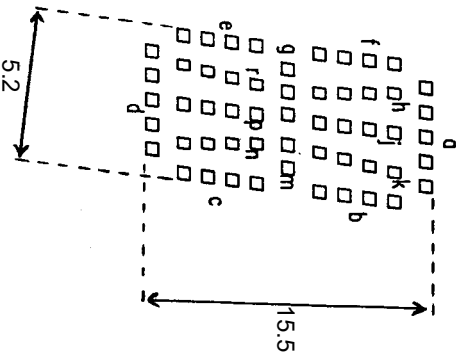
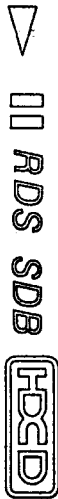
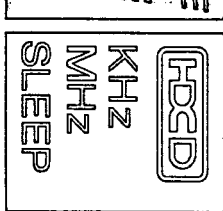
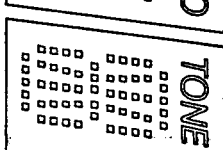
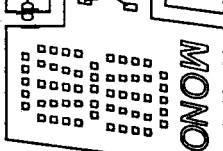
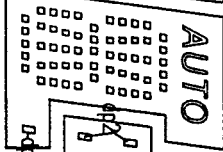
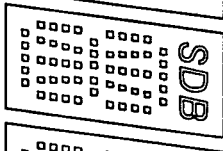
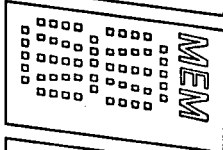
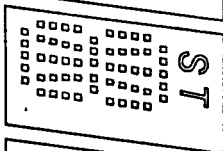
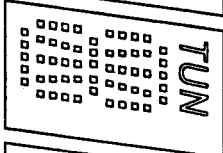
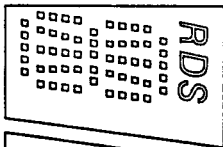
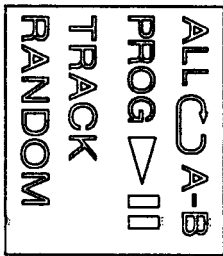








Pinout Connections

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Connection	F	F	NP	1G	2G	3G	4G	5G	6G	7G	8G	9G	NC	NC	NC	NC	P1	P2
Pin No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	
Connection	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	NP	F	F	

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

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



	1G	2G	3G	4G	5G	6G	7G	8G	9G
P1	ALL	RDS	TUN	ST	MEM	SDB	AUTO	MONO	TONE
P2							DP1	DP2	
P3		a	a	a	a	a	a	a	a
P4		b	b	b	b	b	b	b	b
P5		f	f	f	f	f	f	f	f
P6		j	j	j	j	j	j	j	j
P7		k	k	k	k	k	k	k	k
P8	PROG	h	h	h	h	h	h	h	h
P9	TRACK	g	g	g	g	g	g	g	g
P10	RANDOM	m	m	m	m	m	m	m	m
P11		d	d	d	d	d	d	d	d
P12		e	e	e	e	e	e	e	e
P13	SLEEP	c	c	c	c	c	c	c	c
P14	MHZ	p	p	p	p	p	p	p	p
P15		n	n	n	n	n	n	n	n
P16	KHZ	r	r	r	r	r	r	r	r