

## User's Guide

# D0104MT-24-0503

# **VFD- RoHS Compliant**

(Vacuum Fluorescent Display Module)

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For product support, contact

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## Vacuum Fluorescent Display Specification

**PART NUMBER:** D0104MT-24-0503

**FEATURES:** 4 Digits, 7-Segmented, Clock

**APPLICATION:** Character Display (7-Segmented)

**RATINGS:** Below

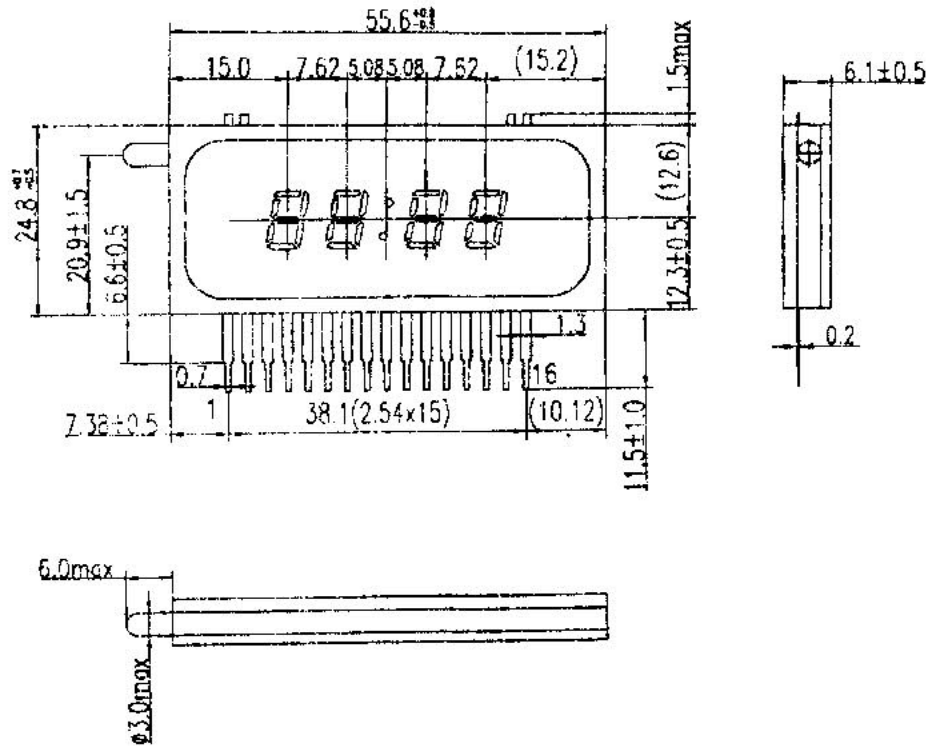
<b>Outer Dimensions</b>	Panel Length	P.L.	55.6	mm	
	Panel Height	P.H.	24.8	mm	
	Panel Thickness	P.T.	6.1	mm	
<b>Leads</b>	Lead Pitch	L.P.	2.54	mm	
	Lead Out	-	SIL		
<b>Character Size</b>	Character Height	C.H.	7.6	mm	
	Character Width	C.W.	5.4	mm	
Item	Symbol	Min.	Recommended	Max.	Unit
<b>Filament Voltage</b>	Ef	1.53	1.7	1.87	Vdc
<b>Peak Grid Voltage</b>	ec	-	24.0	35.0	Vp-p
<b>Peak Anode Voltage</b>	eb	-	24.0	35.0	Vp-p
<b>Cut-off Bias</b>	Ek	-	-	-	Vdc
<b>Duty Cycle</b>	Du	-	1/ 7.5	-	-
<b>Pulse Width</b>	tp	-	80	-	uS
<b>Operating Temperature</b>	Topr	-20	-	+ 70	C
<b>Storage Temperature</b>	Tstg	-55	-	+ 80	C
<b>Color of Illumination</b>	Green				

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**Electrical  
Characteristics**

Item	Symbol	Test Condition	Min.	Typical	Max.	Unit
Filament Current	if	Ef = 1.7 Vdc	70.0	78.0	86.0	mA
	-	eb = ec = 0	-	-	-	-
Anode Current	ib/1G,2G,4G, 5G	Ef = 1.7 Vdc	-	1.8	3.6	mA <sub>p-p</sub>
	ib/3G	eb = 24.0 Vp-p	-	-	-	mA <sub>p-p</sub>
	-	ec = 24.0 Vp-p	-	-	-	mA <sub>p-p</sub>
	-	Du = 1/7.5	-	-	-	mA <sub>p-p</sub>
	-	tp = 80 uS	-	-	-	mA <sub>p-p</sub>
Grid Current	ic/1G,2G,4G, 5G Ic/3G	Ek = 2Vdc	-	1.8	3.6	mA <sub>p-p</sub>
		-	-	1.5	3.0	mA <sub>p-p</sub>
		-	-	-	-	mA <sub>p-p</sub>
		-	-	-	-	mA <sub>p-p</sub>
		-	-	-	-	mA <sub>p-p</sub>
Luminance	L(G)		686	1440	-	cd/m <sup>2</sup>
	-		(200)	(420)		fL
Luminance Ratio	Lmin/Lmax		50	-	-	%
Grid Cut-off Voltage	Ecco	Ef = 1.7 Vdc Eb = 24.0 Vdc	(-2.0)	-	-	Vdc
Anode Cut-off Voltage	Ebco	Ef = 1.7 Vdc ec = 24.0 Vp-p  Du = 1/7.5 tp = 80 uS	(-20)	-	-	Vdc

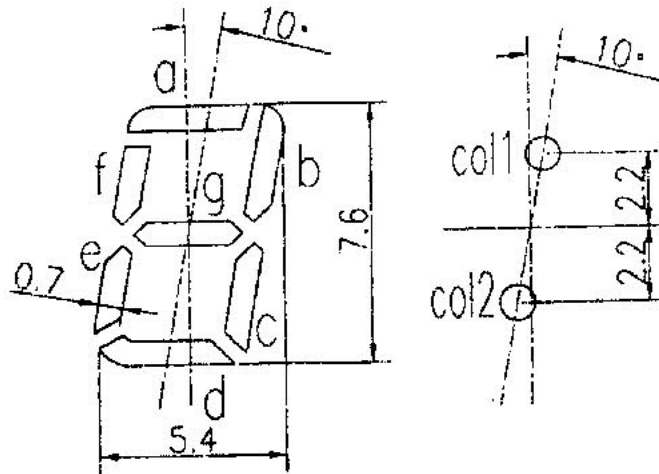
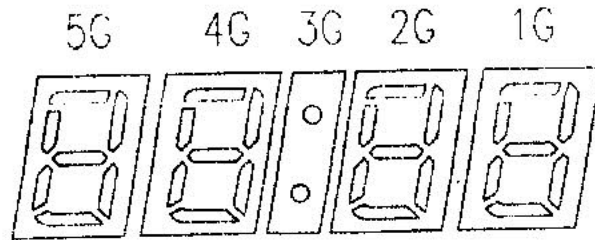
Outline Drawing (Unit:mm)



Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Connect	F(-)	g	f	G5	e	d	G4	c	G3	b	G2	a	col2	G1	col1	F(+)

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Display Pattern And Grid Assignment



(color of illumination)

(Green):(x=0.250,y=0.440)