

MINISTRY OF SUPPLY - D.L.R.D.(A)/R.A.E.

Specification MOSA/CV453 Issue 4 Dated 16.6.1953 To be read in conjunction with K.1001	<u>SECURITY</u>	
	<u>Specification</u> UNCLASSIFIED	<u>Valve</u> UNCLASSIFIED

—————→ Indicates a change

TYPE OF VALVE - Miniature Pentagrid				<u>MARKING</u>		
CATHODE - Indirectly heated				See K.1001/4.		
ENVELOPE - Glass, unmetallised				Additional Marking - 6BE6		
PROTOTYPE - 6BE6				<u>BASE</u>		
R.T.M.A. DESIGNATION - 6BE6				B7G.		
<u>RATING</u>			Note	<u>CONNECTIONS</u>		
				Pin	Electrode	
Heater Voltage	(V)	6.3	A	1	G1 (Osc.)	
Heater Current	(A)	0.3		2	C + G5	
Max. Anode Voltage	(V)	330		3	H	
Max. G2 and G4 Voltage	(V)	110		4	H	
Max. G2 and G4 Supply Voltage	(V)	330		5	A	
Max. Anode Dissipation	(W)	1.1		6	G2 + G4	
Max. G2 and G4 Dissipation	(W)	1.1		7	G3 (Signal)	
Max. Cathode Current	(mA)	15.5		<u>DIMENSIONS</u>		
Max. G1 Current	(mA)	0.5		*See K.1001/A1/D4.		
Conversion Conductance	(mA/V)	0.47		A		
Anode Impedance	(MΩ)	1.0	A			
Conversion Conductance at Vg3 = -30V	(μA/V)	4.0		Dimension	Min.	Max.
<u>CAPACITANCES (pF)</u>				A mm	-	54.01
Cag3 (max.)		0.35	B	B mm	-	19.05
Cg3 - all		7	B	L mm	-	47.75
Ca - all		13.5	B	F mm	34.04	42.16

NOTES

- A. Measured at $V_a = 250V$; $V_{g2} + V_{g4} = 100V$; $V_{g1} = 0$; $V_{g3} = -1.5V$.
- B. Measured with a close fitting metal screen.

To be performed in addition to those applicable in K.1001.

Test Conditions							Test	Limits		No. Tested	Note
								Min.	Max.		
a	See K.1001/AlII. Measurement to be made in Adaptor Type 124 Ref. No. 10AD/9						CAPACITANCES (μF)				
	Links to H.P.	Links to L.P.	Links to E.								
	5	7	1,2,3,4, 6,8,9,10 TC1,TC2.				Cag3	-	.35	6	
	7	1,2,3,4, 5,6,8,9.	10,TC1, TC2.				Cg3 - all	5.5	8.5	per	1
	5	1,2,3,4, 6,7,8,9.	10,TC1, TC2.				Ca - all	11.0	16.0	week	
b	Vh (V)	Va (V)	Vg2+g4 (V)	Vg1 (V)	Vg3 (V)	Ig1 (mA)					
	6.3	0	0	0	0	0	Ih (A)	.275	.325	100% or S	
c	See K.1001/5.3 except that Test Voltage = $\pm 90\text{V d.c.}$						H-C Leakage Current (μA)	-	40	100%	
d	6.3	250	100	0	-1.5	0.5	Ia (mA)	1.9	4.1	100%	2
e	6.3	250	100	0	-1.5	0.5	Ig2 + Ig4 (mA)	5.2	9.8	100%	2
f	6.3	250	100	0	-2	0.5	-Ig3 (μA)	0	2	100%	2
g	6.3	250	100	0	-1.5	0.5	Conversion Conductance (mA/V)	0.28	0.66	100%	2
h	6.3	250	100	0	-6	0.5	Conversion Conductance (mA/V)	.06	.3	20 per week	2
j	6.3	250	100	0	-30	0.5	Conversion Conductance (mA/V)	.001	.05		2
k	6.3	100	100	-14	0	-	Ia tail (μA)	0	50	100%	3
l	6.3	100	100	0	0	-	Osc. gm ($\mu\text{A/V}$)	5.5	9	100%	3

Test Conditions							Test	Limits		No. Tested	Note
								Min.	Max.		
	V _h (V)	V _a (V)	V _{g2+} G ₄ (V)	V _{g1} (V)	V _{g3} (V)	I _{g1} (mA)					
m	6.3	100	100	0	0	-	Osc. μ	17	25	20 per week	3 ←
n	6.3	100	100	0	0	-	Osc. I _c (mA)	16	33		3 ←
p	6.3	15	15	15	15	-	Emission (mA)	50	-	100%	4

NOTES

1. Measured with a close fitting metal screen.
2. R = 20K ohms to be inserted with a suitable by-pass capacity in series with G₁. AC signal to be applied sufficient to produce the required grid current.
3. Screen and Anode to be connected at socket.
4. Test voltages to be applied only for sufficient time to obtain steady reading.

DATA SHEET

Valve Electronic Type CV 453

TYPICAL OPERATING CONDITIONS

As frequency changer with separate oscillator

Anode Voltage	100	250	Volts
Screen (G2/G4) Voltage	100	100	Volts
Grid (G3) Voltage	-1.5	-1.5	Volts
Oscillator (G1) Resistor	20,000	20,000	Ohms
Oscillator (G1) Current	0.5	0.5	mA
Anode Current	2.8	3.0	mA
Screen (G2) Current	7.3	7.1	mA
Cathode Current	10.6	10.6	mA
Conversion Conductance	455	475	$\mu\text{A/V}$
Conversion Impedance	0.5	1.0	Megohm
Grid (G3) Cut off	-30	-30	Volts
Equivalent Noise Resistance	200,000	190,000	Ohms
Input Impedance at 18 Mc/s	-	100,000	Ohms
Max. frequency of operation	- 100	-	Mc/s

As frequency changer - Self excited oscillator

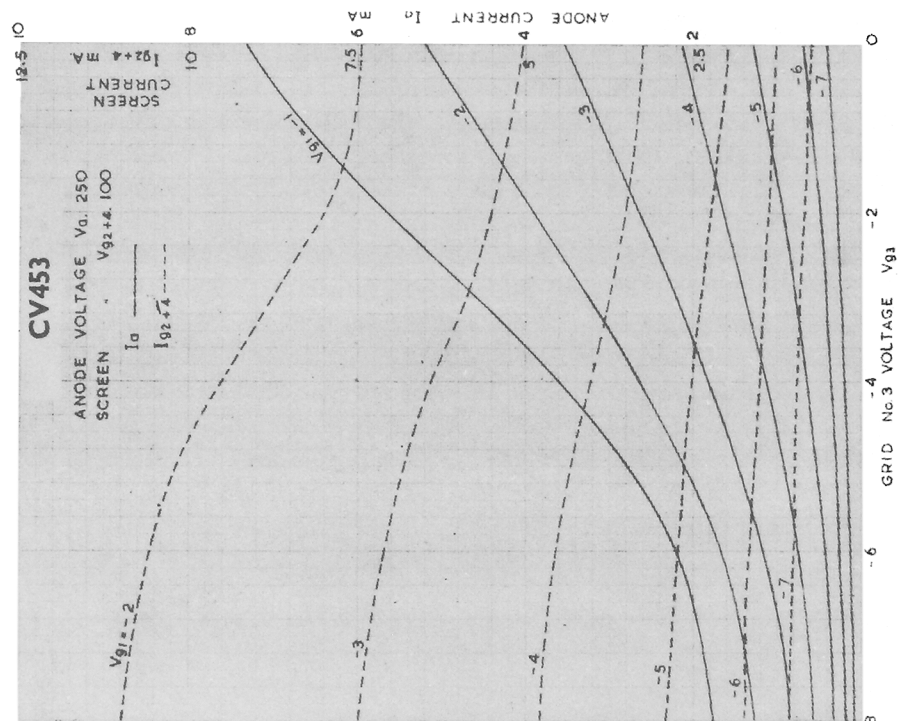
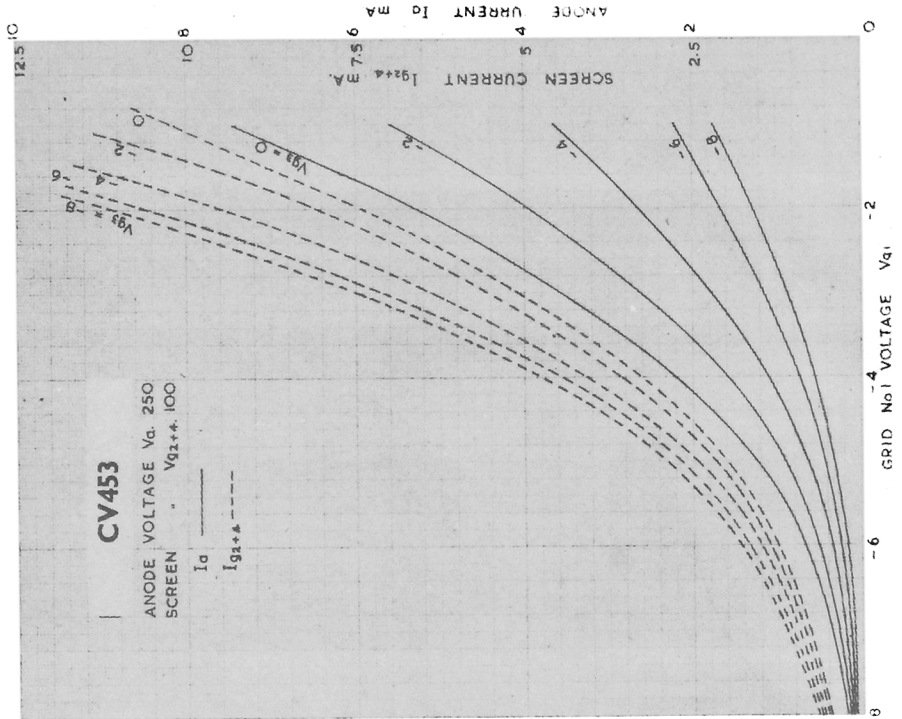
With anode and screen volts = 100 volts and the control (G3) grid voltage = 0 volts the characteristics are as follows:-

Cathode Current	25	mA
Amplification Factor	20	-
Mutual Conductance	7.5	mA/V

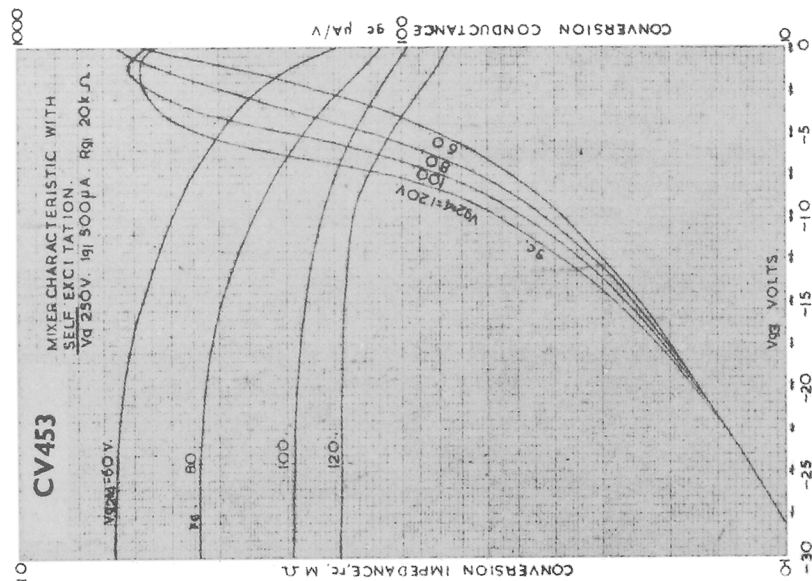
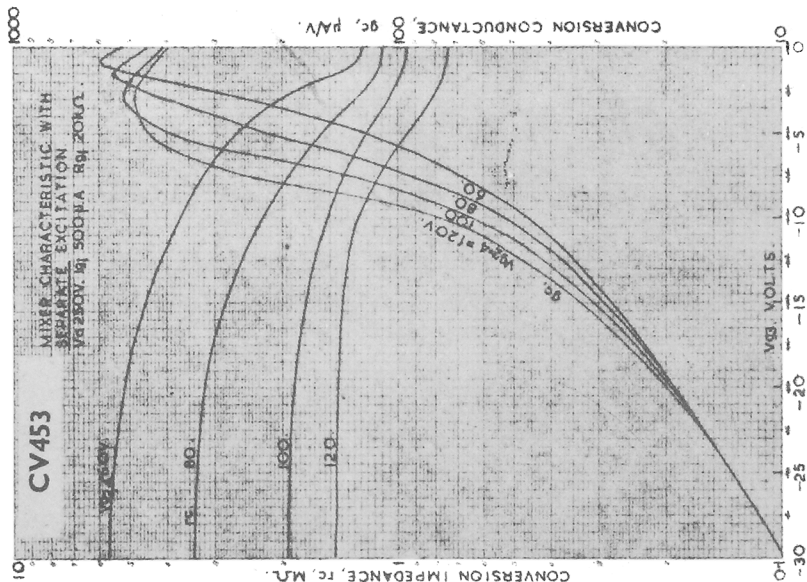
Mounting Position - Any

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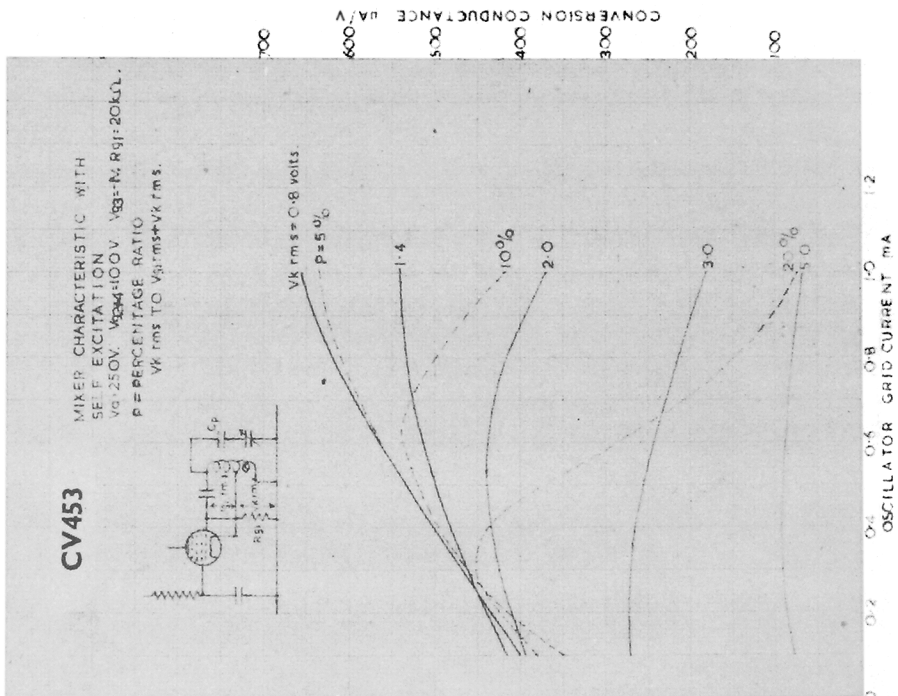
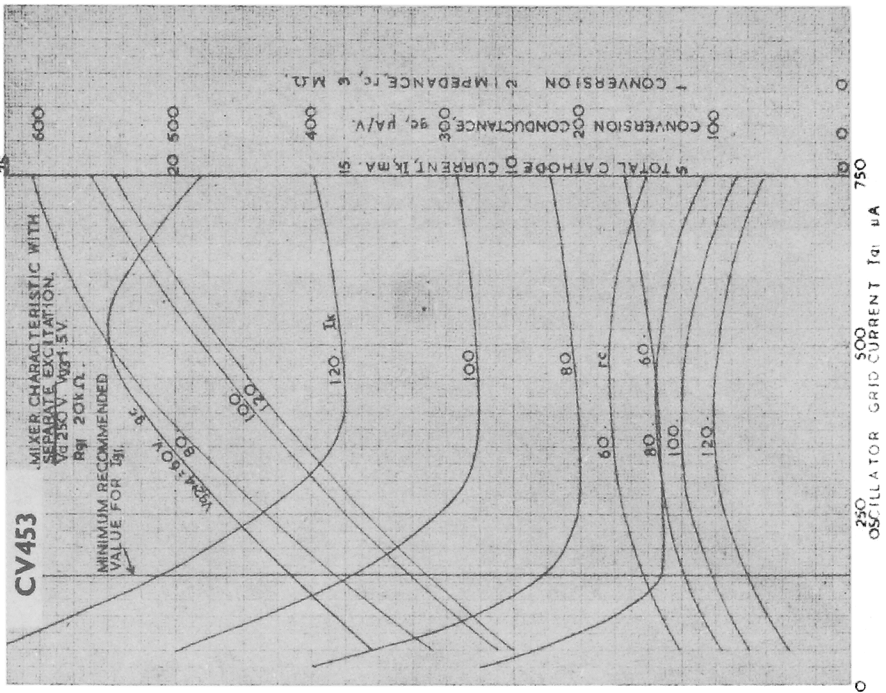


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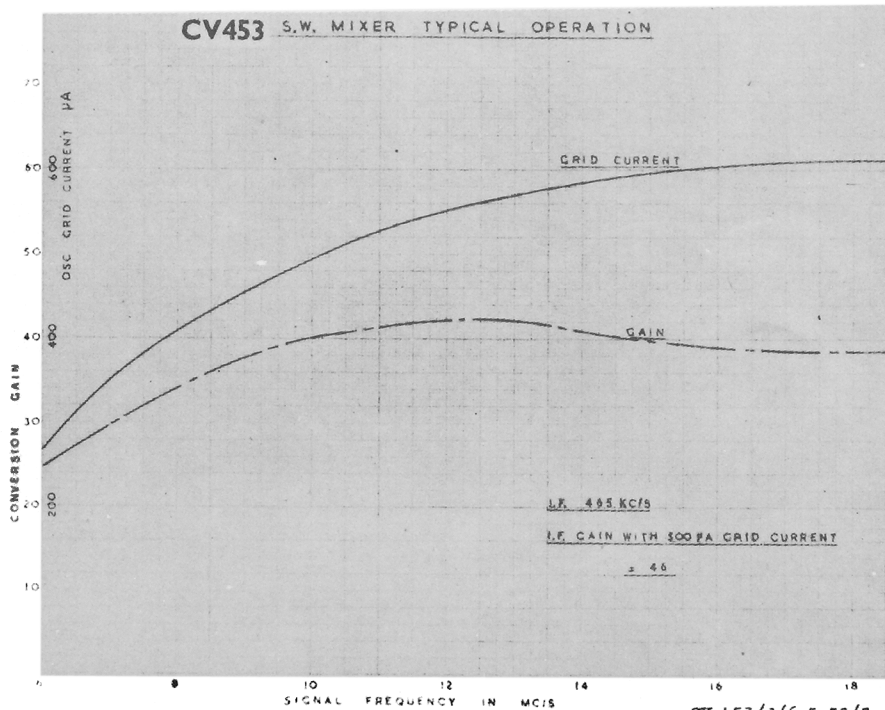
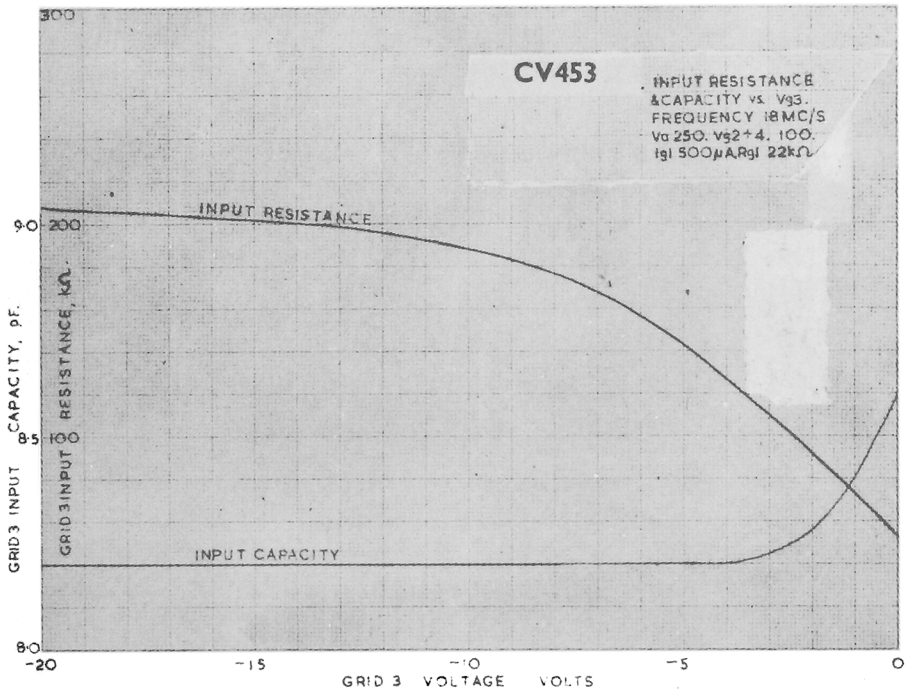
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