VALVE ELECTRONIC

# CV131

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

| Specification MOSA/CV.131<br>Issue 9. Dated 8.11.54.<br>To be read in conjunction with B.S.448, B.S.1409 and K.1001 | SECURITY<br>Specification: UNCLASSIFIED<br>Valve: UNCLASSIFIED |
|---|---|

→ Indicates a change

| | |
|---|---|
| TYPE OF VALVE - Miniature H.F. Pentode variable-$\mu$ | MARKING<br>See K1001/4<br>Additional marking.<br>6CQ6 |
| CATHODE - Indirectly heated | |
| ENVELOPE - Glass | BASE<br>B.S.448/B7G |
| PROTOTYPE - EF92. W77. 9D6. V884. | |
| R.E.T.M.A. DESIGNATION - 6CQ6 | |

| RATING | | | Note |
|---|---|---|---|
| Heater Voltage | (V) | 6.3 | |
| Heater Current | (A) | 0.2 | |
| Max. Operating Anode Voltage | (V) | 300 | A |
| Max. Anode Voltage (Ia = 0) | (V) | 500 | A,D |
| Max. Operating Screen Voltage | (V) | 300 | A |
| Max. Screen Voltage (Ia = 0) | (V) | 300 | A,D |
| Max. Anode Dissipation | (W) | 3.0 | A |
| Max. Screen Dissipation | (W) | 0.7 | A |
| Mutual Conductance | (mA/V) | 2.5 | B |

CONNECTIONS

| Pin | Electrode |
|---|---|
| 1 | g1 |
| 2 | k |
| 3 | h |
| 4 | h |
| 5 | a |
| 6 | g3 + s |
| 7 | g2 |

CAPACITANCES (pF)

| | | |
|---|---|---|
| C in (Nom.) | 4.5 | C |
| C out (Nom.) | 7.0 | C |
| Ca,g1 (max.) | .01 | C |

DIMENSIONS

See B.S.448/B7G/2.1, Size Ref. No.2 ←

| Dimensions (mm) | Min. | Max. | |
|---|---|---|---|
| A seated height | - | 47.5 | ← |
| C diameter | - | 19.0 | |
| D overall length | - | 54.5 | ← |

NOTES

A. Absolute maximum values.

B. Va = 250; Vg2 = 200; Vg1 = -2.5.

C. Measured with a close fitting metal shield.

D. With 5,000 ohms resistor in series with the anode and 20,000 ohms resistor in series with the screen.

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

| | Test Conditions | | | | | Test | Limits Min. | Limits Max. | No. Tested | Note |
|---|---|---|---|---|---|---|---|---|---|---|
| a | See K.1001/AIII Measurements to be made in adaptor Type 124, Ref. 10AD/9 | | | | | CAPACITANCES (pF) | | | | 1 |
| | Links to H.P. | | Links to L.P. | | Links to E. | | | | | |
| | 1 | | 2,3,4,6,7, 8,9. | | 5,10,T.C.1, T.C.2. | C in | 3.8 | 5.2 | 6 per week | |
| | 5 | | 2,3,4,6,7, 8,9. | | 1,10,T.C.1, T.C.2. | C out | 5.8 | 8.2 | | |
| | 5 | | 1 | | 2,3,4,6,7,8, 9,10,T.C.1, T.C.2. | Ca,g1 | - | .01 | T.A. | |
| | Vh | Va | Vg2 | Vg3 | Vg1 | | | | | |
| b | 6.3 | 0 | 0 | 0 | 0 | Ih (A) | 0.18 | 0.22 | 100% or S | |
| c | 6.3 | 200 | 200 | 0 | -2.5 | Ia (mA) | 6.0 | 10.5 | 100% | |
| d | 6.3 | 200 | 200 | 0 | -2.5 | Ig2 (mA) | 1.2 | 3.0 | 100% or S | |
| e | 6.3 | 200 | 200 | 0 | -2.5 | gm (mA/V) | 1.8 | 3.1 | 100% | |
| f | 6.3 | 200 | 200 | 0 | -2.5 | Reverse Ig1 (μA) | - | 0.5 | 100% | |
| g | 6.3 | 200 | 200 | 0 | -26 | gm (μA/V) | 4.0 | 60 | 100% | 2 |
| h | 6.3 | 200 | 200 | 0 | -22 | Ia (μA) | 25 | 900 | 100% | 2 |
| j | 6.3 | 200 | 200 | 0 | -2.5 | μg1g2 | 23 | 39 | 20 per week | |
| | Max. grid swing 1 volt | | | | | | | | | |

NOTES

1. Test to be performed with the valves fully shielded.

2. It is not necessary for valves to be subjected 100% to both test (g) and test (h). If test (g) is applied to the production then it is not required that valves be subjected to test (h). If test (h) is applied to the production then 1% (20) of the valves must be subjected also to test (g).

# Valve Electronic Type CV 131

## TYPICAL OPERATING CONDITIONS

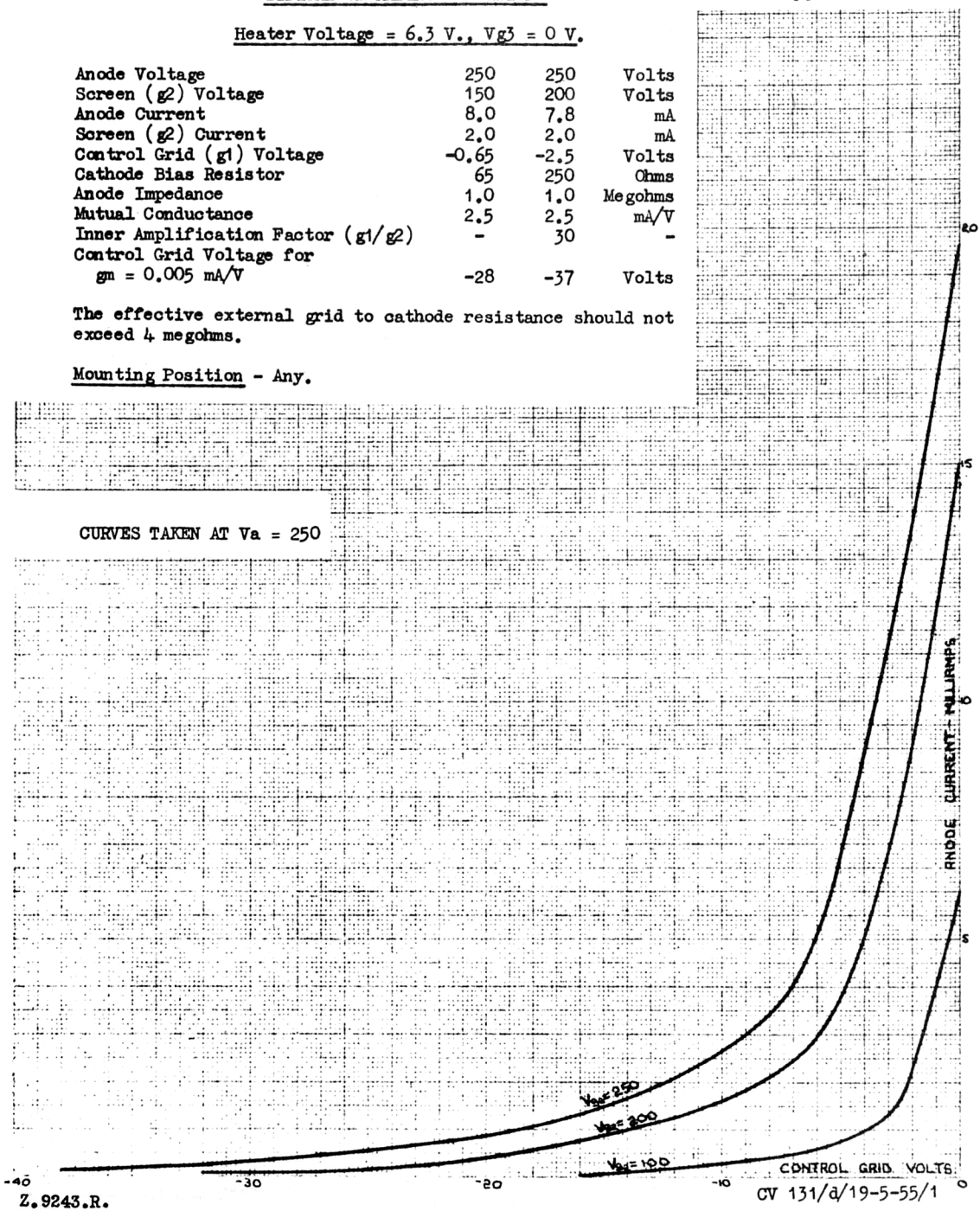
Heater Voltage = 6.3 V., Vg3 = 0 V.

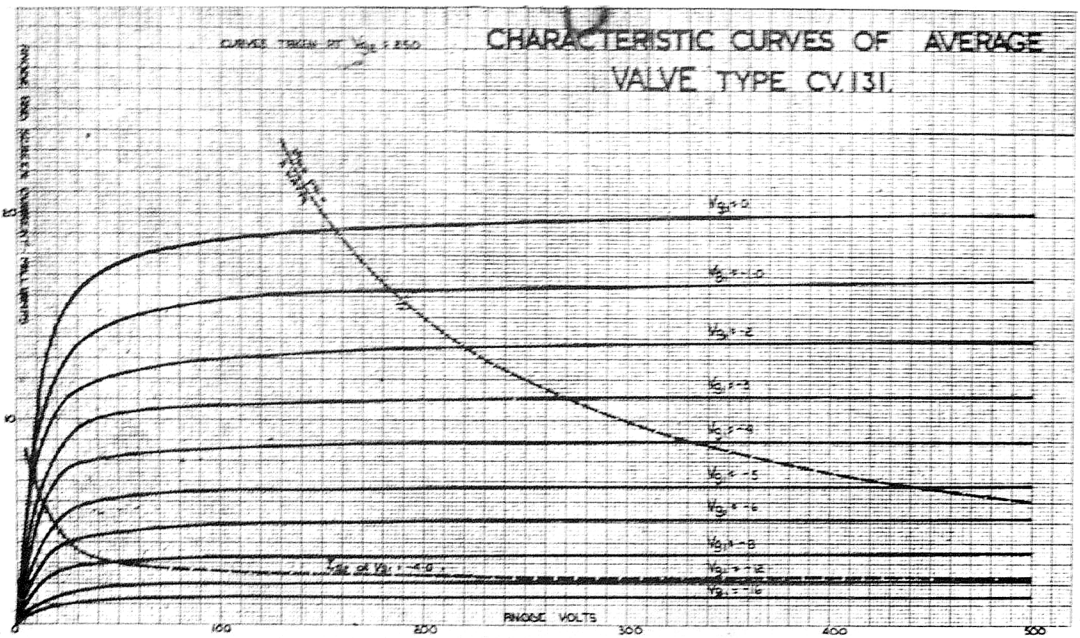
| | | | |
|---|---|---|---|
| Anode Voltage | 250 | 250 | Volts |
| Screen (g2) Voltage | 150 | 200 | Volts |
| Anode Current | 8.0 | 7.8 | mA |
| Screen (g2) Current | 2.0 | 2.0 | mA |
| Control Grid (g1) Voltage | -0.65 | -2.5 | Volts |
| Cathode Bias Resistor | 65 | 250 | Ohms |
| Anode Impedance | 1.0 | 1.0 | Megohms |
| Mutual Conductance | 2.5 | 2.5 | mA/V |
| Inner Amplification Factor (g1/g2) | - | 30 | - |
| Control Grid Voltage for gm = 0.005 mA/V | -28 | -37 | Volts |

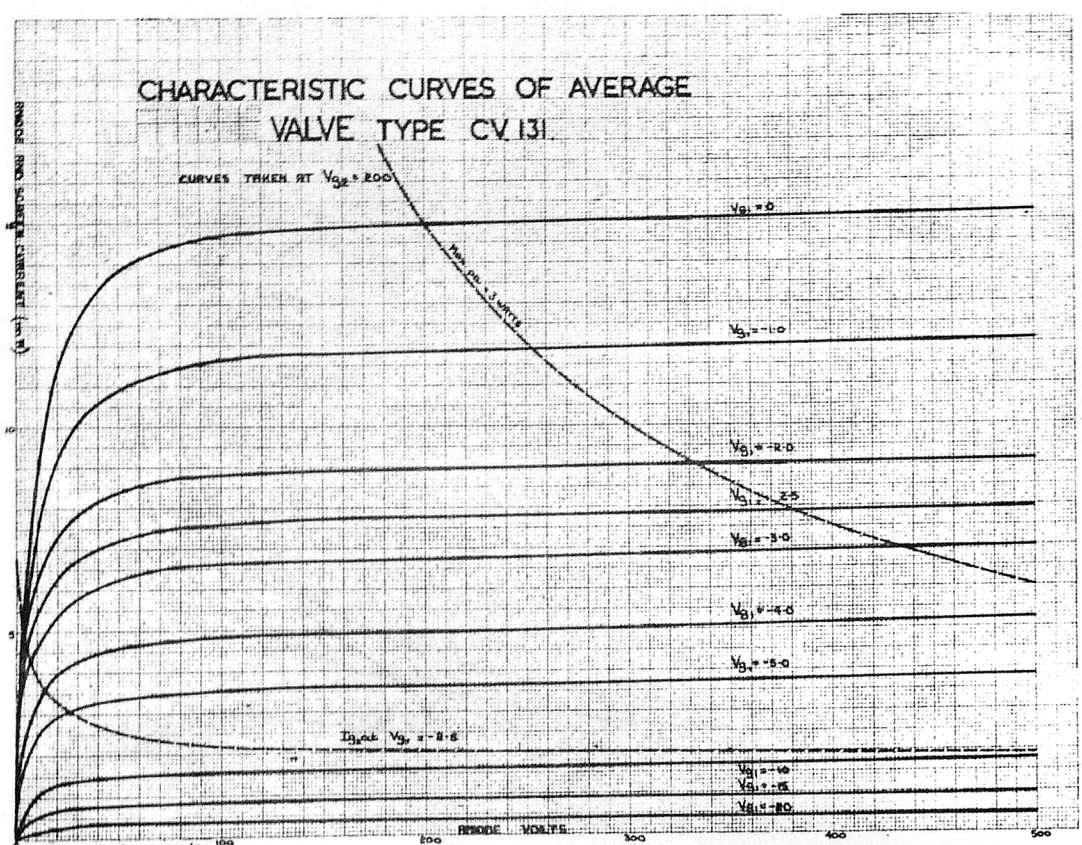
The effective external grid to cathode resistance should not exceed 4 megohms.

Mounting Position - Any.

CURVES TAKEN AT Va = 250




CHARACTERISTIC CURVES OF AVERAGE VALVE TYPE CV.131.
CURVES TAKEN AT $V_{g2}$ = 250
ANODE AND SCREEN CURRENT (mA)
ANODE VOLTS
$V_{g1}$=0
$V_{g1}$=-1·0
$V_{g1}$=-2
$V_{g1}$=-3
$V_{g1}$=-4
$V_{g1}$=-5
$V_{g1}$=-6
$V_{g1}$=-8
$V_{g1}$=-12
$V_{g1}$=-16
$I_{g2}$ at $V_{g1}$ = -8·0
0
100
200
300
400
500
10
15


CHARACTERISTIC CURVES OF AVERAGE VALVE TYPE CV.131.
CURVES TAKEN AT $V_{g2}$ = 200
ANODE AND SCREEN CURRENT (mA)
ANODE VOLTS
$V_{g1}$=0
$V_{g1}$=-1·0
$V_{g1}$=-2·0
$V_{g1}$=-2·5
$V_{g1}$=-3·0
$V_{g1}$=-4·0
$V_{g1}$=-5·0
$V_{g1}$=-10
$V_{g1}$=-15
$V_{g1}$=-20
$I_{g2}$ at $V_{g1}$ = -8·6
0
100
200
300
400
500
5
10