



Twin Tetrode Type C 180

VHF POWER AMPLIFIER

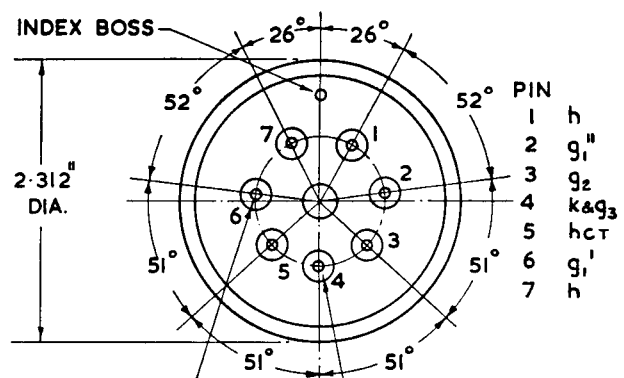
General. The C 180 is a twin tetrode, suitable for use as a push-pull beam power amplifier.

Cooling. The bulb temperature must not exceed 175°C and if necessary forced-air-cooling must be employed.

APPROXIMATE DATA

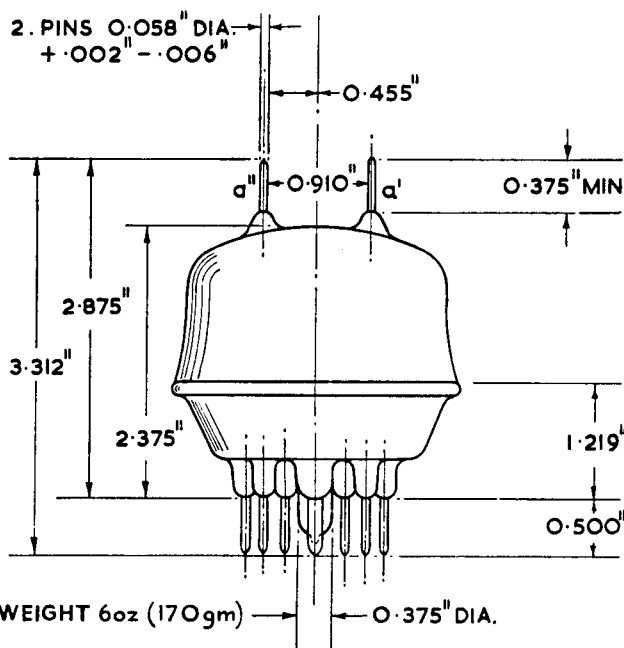
(values are for both units)

| | Series | Parallel | |
|--|--------|----------|------|
| V_h | 12.6 | 6.3 | V |
| I_h | 0.8 | 1.6 | A |
| g_m (taken at $I_a=30$ mA) (per unit) | 3.5 | | mA/V |
| μ_{g1-g2} | 6.5 | | |
| c_{a-g1} (with external shielding) | 0.07 | | pF |
| c_{in} | 8 | | pF |
| c_{out} | 3.8 | | pF |
| c_{g2-k} (including internal screen by-pass capacitor) (approx.) | 65 | | pF |
| $f_{(max)}$ | 250 | | Mc/s |



6. PINS 0.058" DIA.
+0.002"
-0.006"
ON 1.000" P.C. DIA.

1. PIN 0.125" DIA. ± 0.003 "
ON 1.000" P.C. DIA.



WEIGHT 6oz (170 gm) → 0.375" DIA.

DIMENSIONS MAXIMUM UNLESS OTHERWISE STATED.

MARCONI'S WIRELESS TELEGRAPH COMPANY LIMITED

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(1) PUSH-PULL HF POWER AMPLIFIER AND OSCILLATOR. CLASS C TELEGRAPHY

(Unmodulated, one valve, key down conditions) (a)

Maximum permissible ratings

| | | |
|--------------------|------|----|
| V_a | 750 | V |
| V_{g2} | 250 | V |
| V_{g1} | -175 | V |
| I_a | 90 | mA |
| I_{g1} | 6 | mA |
| P_a (1n) | 36 | W |
| P_{g2} (1n) | 5 | W |
| P_a | 15 | W |
| V_{h-k} (pk) (b) | 100 | V |

Typical Operation

| | | | |
|-------------------------------------|--------|--------|----------|
| V_a | 500 | 750 | V |
| V_{g2} (i) from a fixed supply of | 200 | 200 | V |
| (ii) via R_{g2} | 21,000 | 37,000 | Ω |
| V_{g1} (c) | | | |
| (i) from a fixed supply of | -65 | -65 | V |
| (ii) via R_k | 730 | 1,000 | Ω |
| (iii) via R_{g1-k} | 25,000 | 23,000 | Ω |
| $V_{g1}'-g1''$ (pk) | 150 | 150 | V |
| I_a | 72 | 48 | mA |
| I_{g2} | 14 | 15 | mA |
| I_{g1}^* | 2.6 | 2.8 | mA |
| P_{dr}^* | 0.18 | 0.19 | W |
| P_{out}^* | 26 | 26 | W |

(2) PUSH-PULL HF POWER AMPLIFIER CLASS C

(Anode modulated, one valve, carrier conditions, permissible modulation 100%)

Maximum permissible ratings

| | | |
|--------------------|------|----|
| V_a | 600 | V |
| V_{g2} | 250 | V |
| V_{g1} | -175 | V |
| I_a | 75 | mA |
| I_{g1} | 6 | mA |
| P_a (1n) | 22 | W |
| P_{g2} (1n) | 3.4 | W |
| P_a | 10 | W |
| V_{h-k} (pk) (b) | 100 | V |

Typical Operation

| | | | |
|---------------------------------------|--------|--------|----------|
| V_a | 425 | 600 | V |
| V_{g2} (i) from fixed supply of | 200 | 200 | V |
| (ii) via R_{g2} | 14,000 | 25,000 | Ω |
| V_{g1} (c) (i) from fixed supply of | -60 | -65 | V |
| (ii) via R_{g1-k} | 25,000 | 25,000 | Ω |
| $V_{g1}'-g1''$ (pk) | 140 | 150 | V |
| I_a | 52 | 36 | mA |
| I_{g2} | 16 | 16 | mA |
| I_{g1}^* | 2.4 | 2.6 | mA |
| P_{dr}^* | 0.15 | 0.18 | W |
| P_{out}^* | 16 | 17 | W |

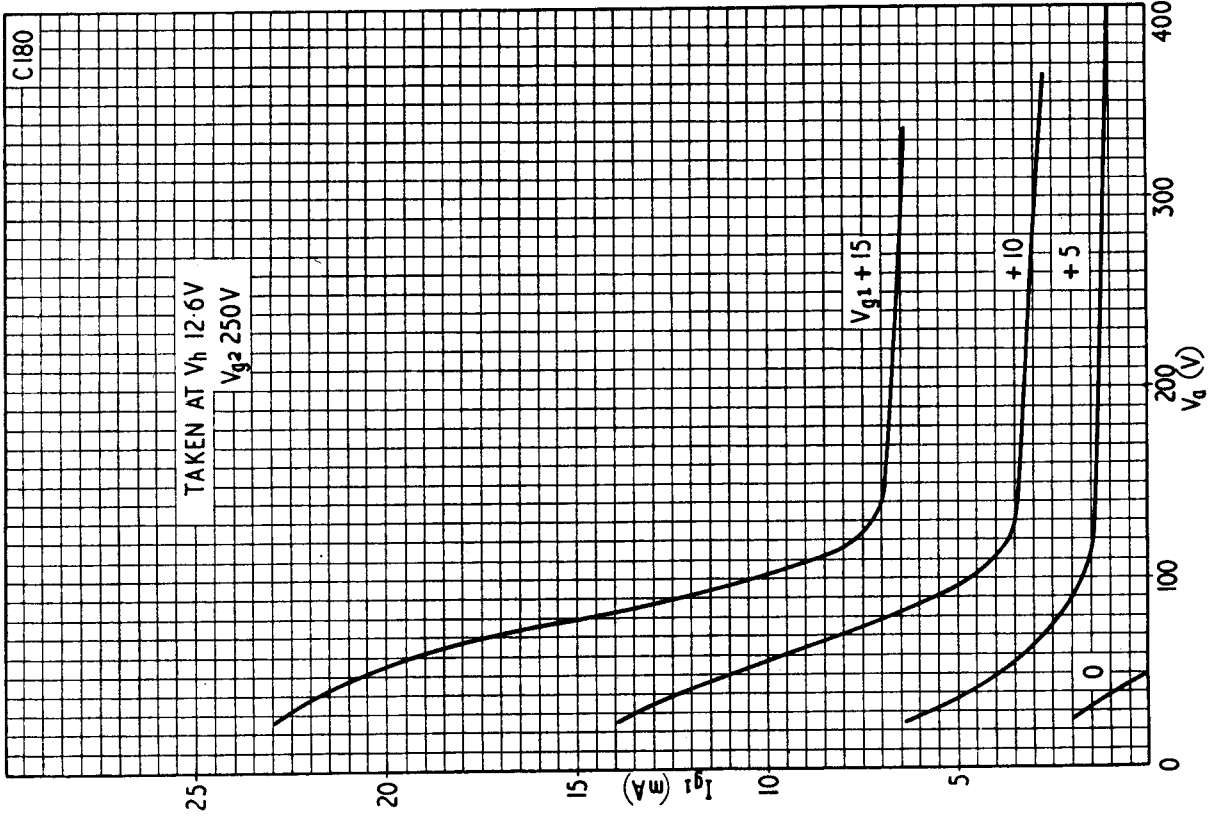
The maximum permissible ratings given above apply to frequencies up to 200 Mc/s. For operation up to 250 Mc/s the values of V_a and P_a (1n) must be reduced to 89% of the maximum permissible ratings.

NOTES

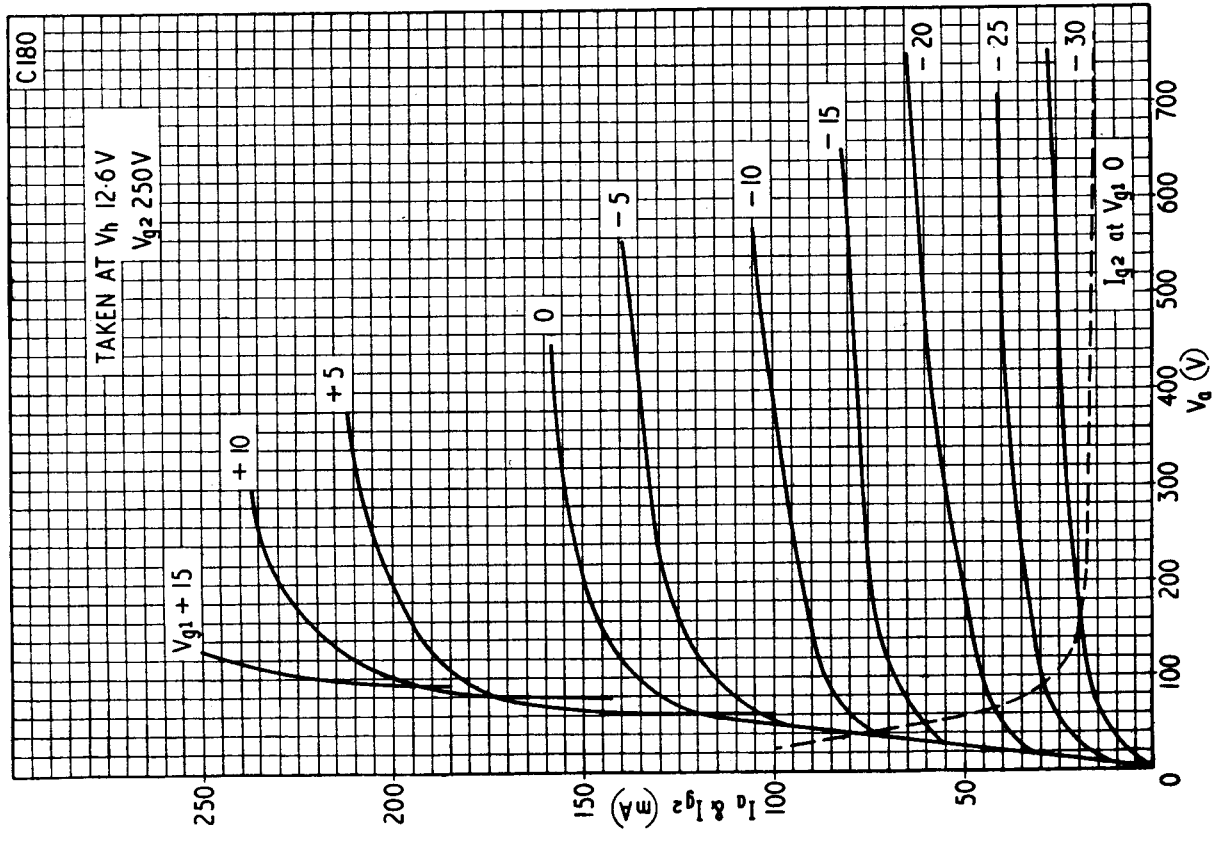
- (a) Modulation essentially negative may be used if the positive peak of the audio frequency envelope does not exceed 115% of the carrier conditions.
 (b) Heater either negative or positive with respect to cathode.

- (c) The grid circuit resistance should never exceed 25,000 Ω (total) per valve, or 50,000 Ω per unit. If additional bias is necessary a cathode resistor or a fixed supply should be used.
 * Subject to wide variation. Figures are approximate only.

C180



C180





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