



Twin Tetrode Type C 180

VHF POWER AMPLIFIER

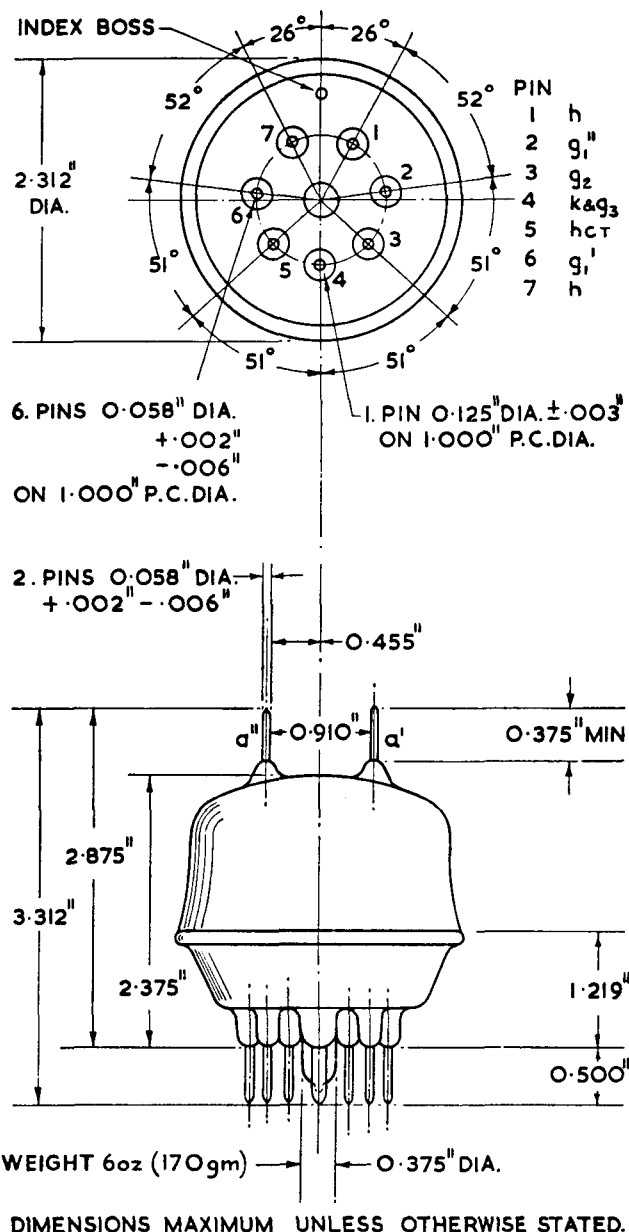
General. The C 180 is a twin tetrode, suitable for use as a push-pull beam power amplifier.

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_{1n}	8	pF
c_{out}	3.8	pF
c_{g2-k} (including internal screen by-pass capacitor) (approx.)	65	pF
$f_{(max)}$	250	Mc/s



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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

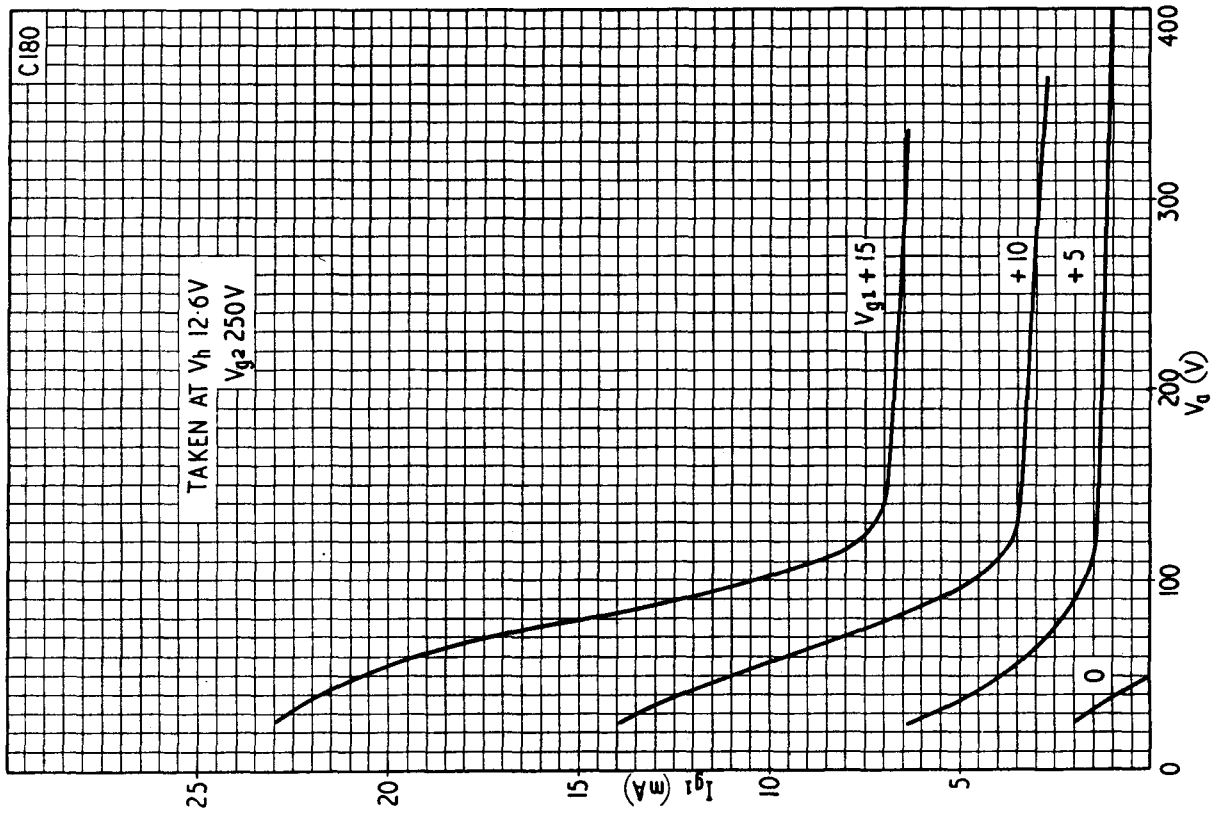
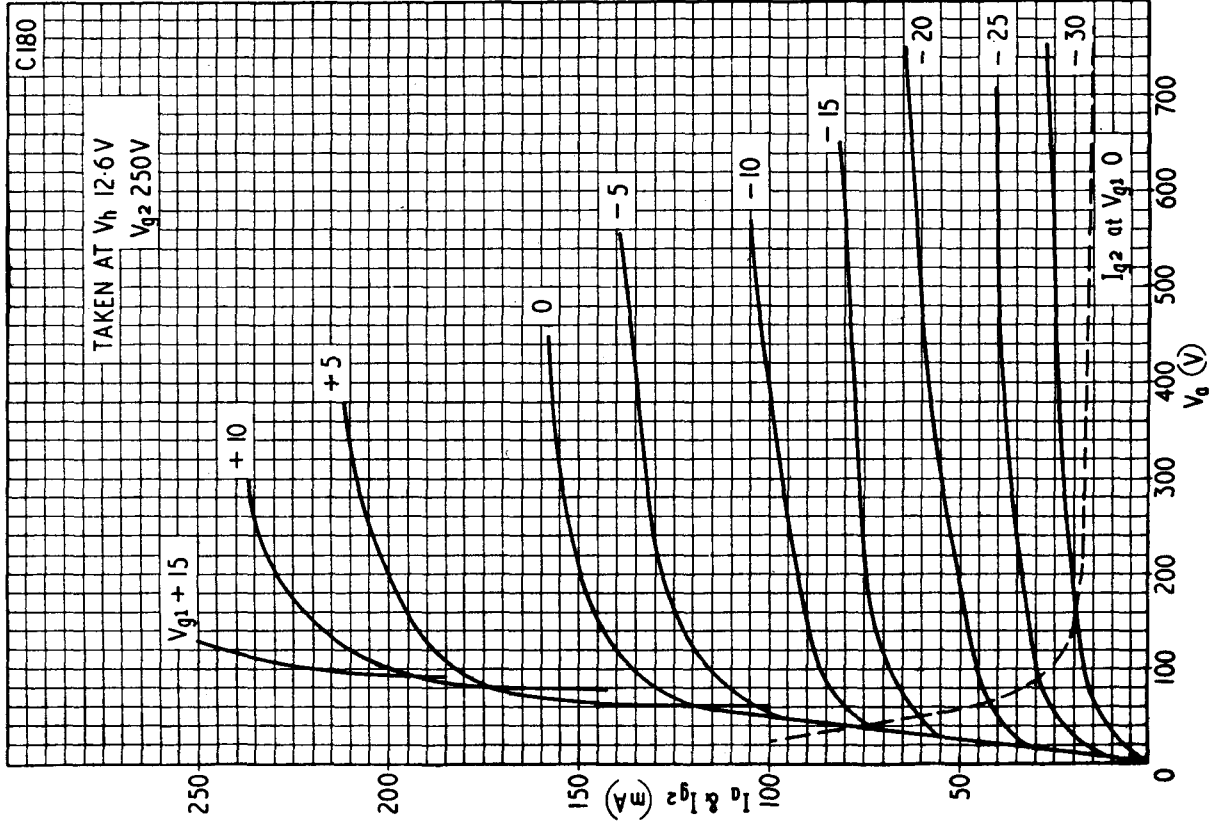
V_a	425	600	V
V_{g2} (i) from fixed supply of	200	200	V
(ii) via R_{g2}	14,000	25,000	Ω
V_{g1} (c) (i) from fixed supply of	-60	-65	V
(ii) via R_{g1-k}	25,000	25,000	Ω
$V_{g1}'-g1''$ (pk)	140	150	V
I_a	52	36	mA
I_{g2}	16	16	mA
I_{g1}^*	2.4	2.6	mA
P_{dr}^*	0.15	0.18	W
P_{out}^*	16	17	W

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.





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