R.F. POWER DOUBLE TETRODE

QQV07-40

Twin beam-tetrode rated to dissipate 20 W at each anode, and primarily intended for use as a Class "C" amplifier or oscillator at frequencies up to 250 Mc/s.

This data sheet should be read in conjunction with "Operating Notes. Part 1, Power Valves," included in this volume of the Handbook.

CATHODE

Indirectly heated for series or parallel operation.

	Series	Parallel	
V_h	12.6	6.3	V
I_h	1.25	2.5	A

MOUNTING POSITION

Vertical—base down.
Horizontal—plane of anodes vertical

CAPACITANCES (Each Section)

c_{in}	14.5	μμF
c_{out}	7.0	μμF
*c_{a-g1}	<0.12	μμF
c_{g2-k} (including internal by-pass capacitor)	65	μμF approx.

*With external shield up to flange seal

CHARACTERISTICS (Each Section) measured at I_a=60 mA; V_a=750 V; V_{g2}=225 V

g_m	8.5	mA/V
μ_{g1-g2}	9	

LIMITING VALUES

V_a max.	750	V
p_a max.	2×20	W
$v_{a\ (pk)}$ max.	2,500	V
$V_{g2(b)}$ max.	600	V
V_{g2} max.	225	V
p_{g2} max.	2×3.5	W
I_{g2} max.	2×17	mA
I_k max.	2×145	mA
$I_{k\ (pk)}$ max. (each section)	550	mA
V_{g1} max.	−175	V
I_{g1} max.	2×7.5	mA
$I_{g1\ (pk)}$ max. (each section)	30	mA
R_{g1-k} max. (each section)	30,000	Ω
V_{h-k} max.	100	V
**Max. bulb temp.	175	°C

Operating Frequency (Mc/s)	Max. Anode Voltage (V)	Max. Anode Input Power (W)
100	750	120
150	700	120
200	600	120
250	500	100

**Forced air cooling may be required to limit the bulb temperature to the figure quoted, at normal dissipations an air flow of approximately 5 cu. ft./min. is required.

MATCHED

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OPERATING CONDITIONS AS PUSH-PULL R.F. POWER AMPLIFIER OR OSCILLATOR—CLASS "C" TELEGRAPHY

V_a	500	750	V
*V_{g2}	200	200	V
R_{g2}	9,300	18,300	Ω
**V_{g1}	−45	−55	V
R_{g1-k}	3,750	4,600	Ω
R_k	160	270	Ω
I_a	2×120	2×80	mA
I_{g2}	2×16	2×15	mA
I_{g1}	2×6	2×6	mA approx.
$v_{in\ (pk)}$	2×62	2×70	V
P_{drive}	0.7	0.8	W approx.
P_{out}	83	87	W approx.

OPERATING CONDITIONS AS CLASS "C" ANODE MODULATED PUSH-PULL R.F. AMPLIFIER

V_a	425	600	V
*V_{g2}	200	200	V
R_{g2}	6,400	13,300	Ω
**V_{g1}	−60	−70	V
R_{g1-k}	5,500	5,800	Ω
I_a	2×106	2×75	mA
I_{g2}	2×18	2×15	mA
I_{g1}	2×5.5	2×6	mA approx.
$v_{in\ (pk)}$	2×77	2×86	V
P_{drive}	0.8	0.9	W approx.
P_{out}	63	70	W approx.

OPERATING CONDITIONS AS CLASS "C" GRID MODULATED PUSH-PULL R.F. POWER AMPLIFIER

V_a	500	750	V
V_{g2}	200	200	V
V_{g1}	−38	−55	V
I_a	2×60	2×40	mA
I_{g2}	2×5	2×2.5	mA
I_{g1}	2×1	0	mA approx.
$v_{in\ (pk)}$ (R.F.)	2×41	2×52	V
$v_{mod\ (pk)}$	17	15	V
P_{drive}	0.5	0.7	W approx.
P_{out}	23	24	W approx.

*May be obtained from a separate supply, or from the anode supply through series resistor (R_{g2}) of value shown, in which case provision must be made to ensure that $V_{g2(b)}$ does not exceed 600 V.

**May be obtained from a separate supply, or by a grid or cathode resistor of value shown, or by a combination of these methods.

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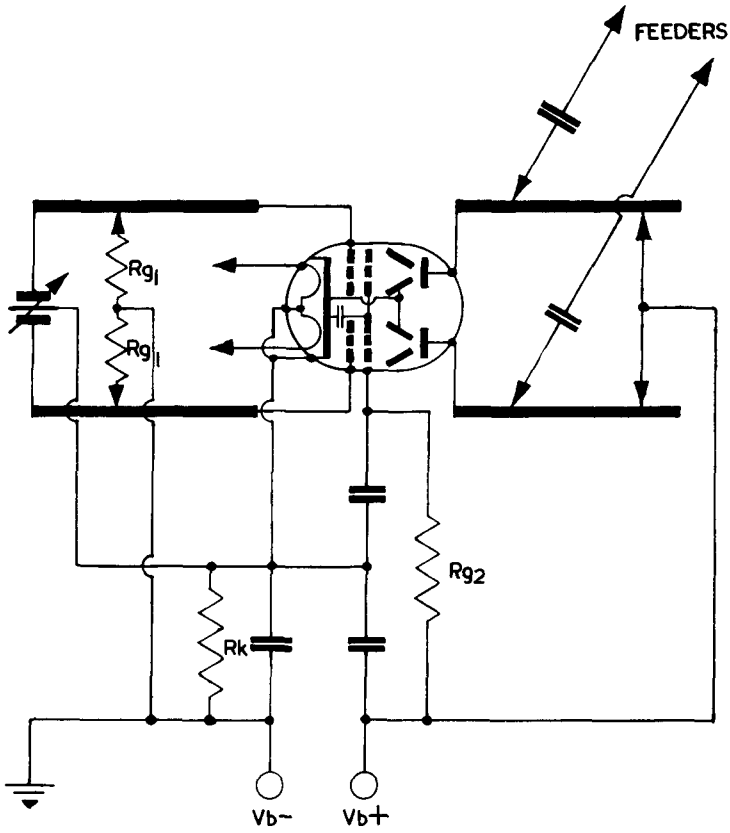

CIRCUIT DIAGRAM FOR QQV07-40 AS V.H.F. PUSH-PULL R.F. POWER AMPLIFIER

QQV07-40

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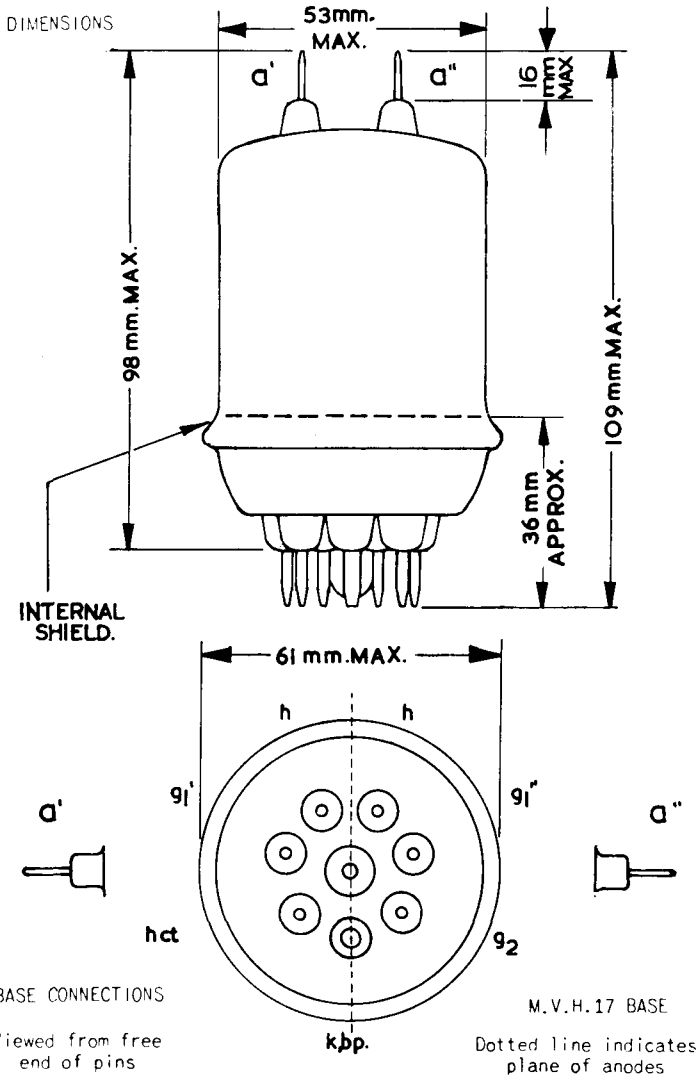

WEIGHT

Valve only 4 oz. (0.11 Kg.)
Valve and carton 9¼ oz. (0.27 Kg.)

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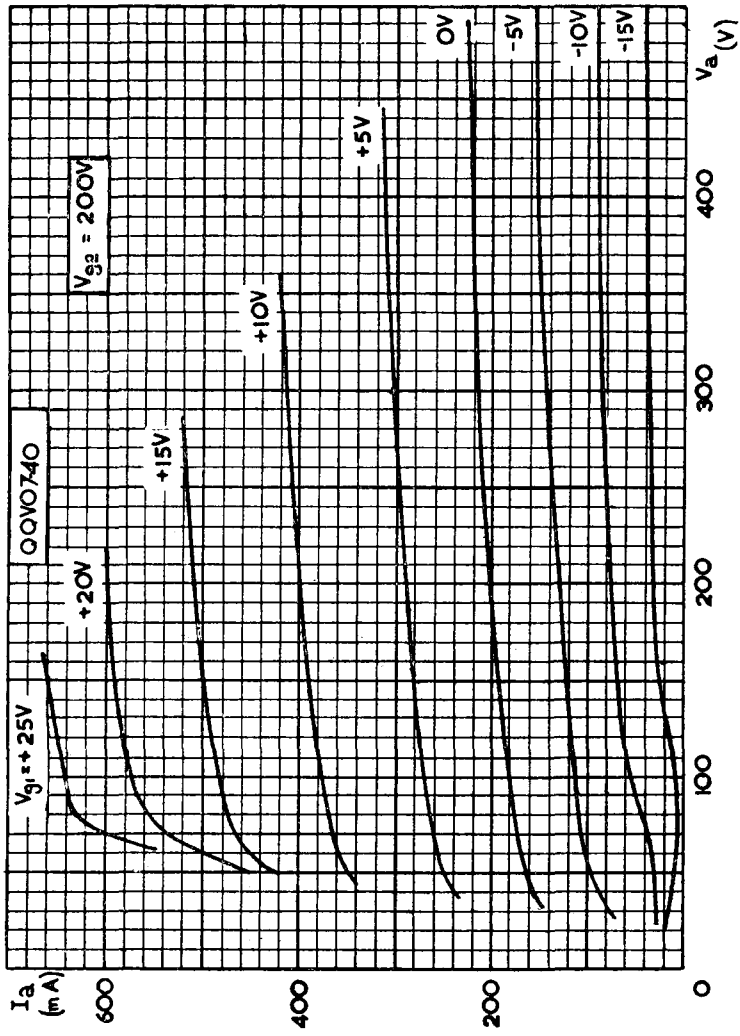

ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE

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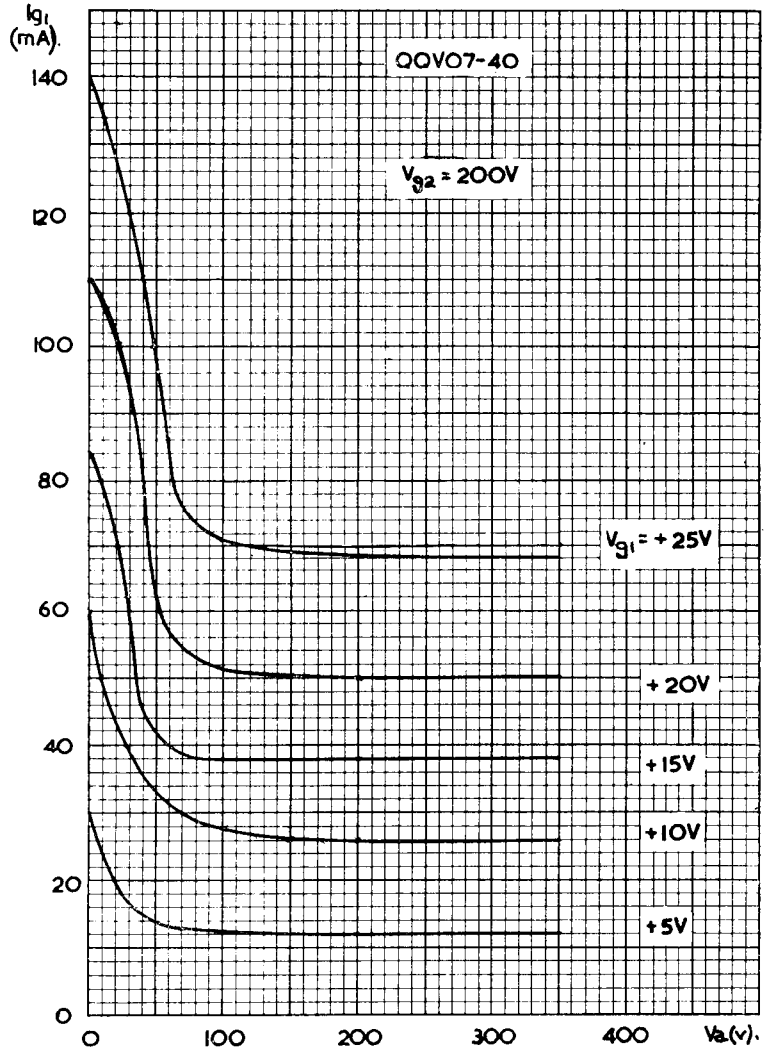

CONTROL GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE