R.F. POWER TETRODE

QV04-7

Indirectly heated Beam Tetrode with aligned grid construction to minimise screen current. It is rated to dissipate a maximum of 7.5 watts at the anode, and is particularly suitable for use at frequencies up to 150 Mc/s., as an R.F. amplifier or as a frequency multiplier.

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

CATHODE

Indirectly heated.

V_h	6.3	V
I_h	0.6	A
Heating time	22	secs.

CAPACITANCES

c_{in}	8.0	μμF
c_{out}	5.4	μμF
c_{a-g1}	<0.1	μμF

CHARACTERISTICS at V_a=300 V; V_{g2}=250 V; I_a=25 mA.

g_m	1.9	mA/V
μ_{g1-g2}	5.6	
r_a	67	kΩ

LIMITING VALUES

V_a max.	400	V
V_{g2} max.	250	V
p_a max.	7.5	W
p_{g2} max.	2.0	W
I_k max.	50	mA
I_{g1} max.	6.0	mA

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OPERATING CONDITIONS FOR SINGLE VALVE CLASS "C" R.F. AMPLIFIER

f	3	3	20	20	Mc/s
V_a	300	300	300	300	V
V_{g2}	150	250	150	250	V
V_{g1}	−35	−50	−30	−60	V
I_a	40	43	43.5	43.7	mA
I_{g2}	7.2	6.6	4.7	5.9	mA
I_{g1}	2.8	0.4	1.8	0.4	mA
$V_{in(pk)}$	58	60	48	67	V
p_a	4.9	4.8	5.8	5.2	W
P_{out}	7.1	8.1	7.3	7.9	W
η	59	62	56	60	%

f	60	60	150	150	Mc/s
V_a	300	300	300	300	V
V_{g2}	150	250	150	250	V
V_{g1}	−30	−50	−30	−50	V
I_a	44	44	44	46	mA
I_{g2}	4.5	6.0	4.5	4.0	mA
I_{g1}	1.9	0.4	1.5	0.4	mA
$V_{in(pk)}$	48	57	52	57	V
p_a	6.2	5.5	6.9	7.5	W
P_{out}	7.0	7.7	6.3	6.3	W
η	53	58	48	46	%

OPERATING CONDITIONS FOR TWO VALVES CLASS "C" R.F. AMPLIFIER

f	60	100	150	Mc/s
V_a	300	300	300	V
V_{g2}	250	250	250	V
V_{g1}	−60	−60	−50	V
I_a	2×43	2×44.4	2×46	mA
I_{g2}	2×6.7	2×5.3	2×4.0	mA
I_{g1}	2×0.5	2×0.4	2×0.4	mA
$V_{in(pk)}$	2×68	2×68	2×57	V
p_a	2×5.1	2×6.0	2×7.4	W
P_{out}	15.6	14.7	12.6	W
η	60	55	46	%

OPERATING CONDITIONS FOR SINGLE VALVE FREQUENCY DOUBLER

f_{out}	20	75	100	150	Mc/s
V_a	300	300	300	250	V
V_{g2}	250	250	200	200	V
V_{g1}	−80	−120	−120	−120	V
I_a	41	43.5	38.4	36.8	mA
I_{g2}	8.0	5.5	2.6	2.1	mA
I_{g1}	0.8	1.2	1.5	1.1	mA
$V_{in(pk)}$	81	124	120	144	V
p_a	6.8	7.4	7.1	6.9	W
P_{out}	5.6	5.6	4.4	2.3	W
η	45	44	38	25	%

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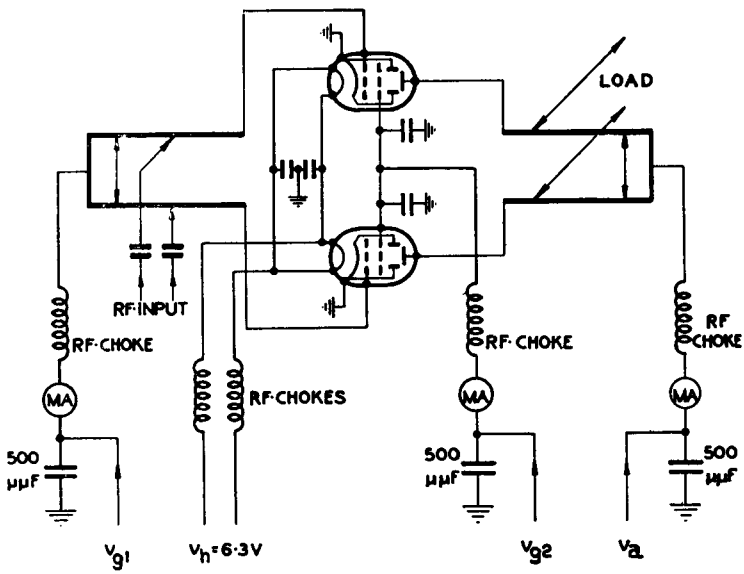
OPERATING CONDITIONS AS FREQUENCY TREBLER

	Single Valve			Push-Pull	
f_{out}	20	75	100	150	Mc/s
V_a	300	300	275	225	V
V_{g2}	250	250	200	200	V
V_{g1}	−120	−140	−140	−140	V
I_a	35	34	36	2×36	mA
I_{g2}	4.2	2.8	2.5	2×2.5	mA
I_{g1}	0.6	0.6	1.5	2×1.3	mA
$V_{in(pk)}$	109	130	142	2×152	V
p_a	7.3	7.1	7.1	2×6.6	W
P_{out}	3.3	3.2	2.8	3.1	W
η	31	31	28	19	%

WEIGHT Valve only ; 1½ oz.



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Parallel-line Push-pull R.F. Amplifier

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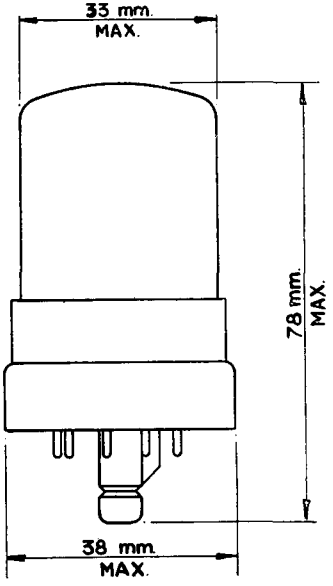
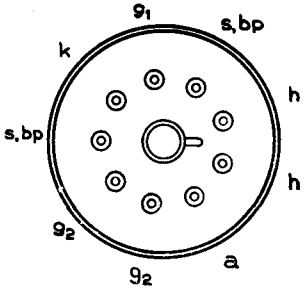
DIMENSIONS AND BASE CONNECTIONS



9-PIN PRESSED GLASS BASE TO FIT B9G VALVE HOLDER



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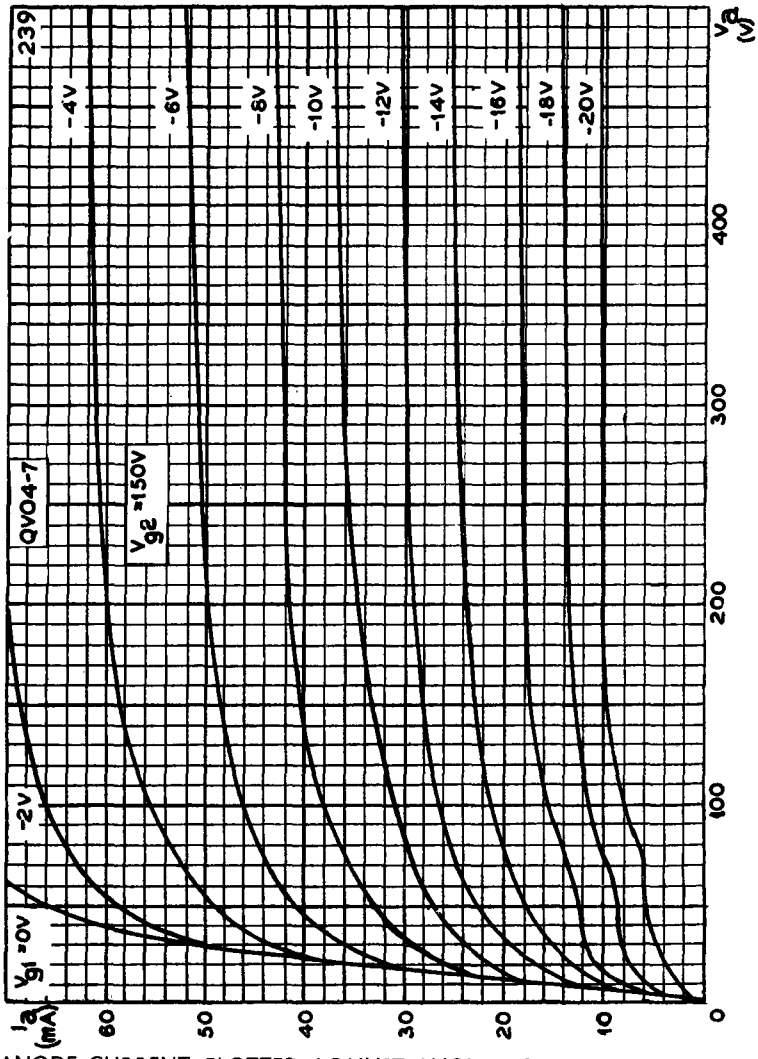

ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE. V_{g_2}=150V

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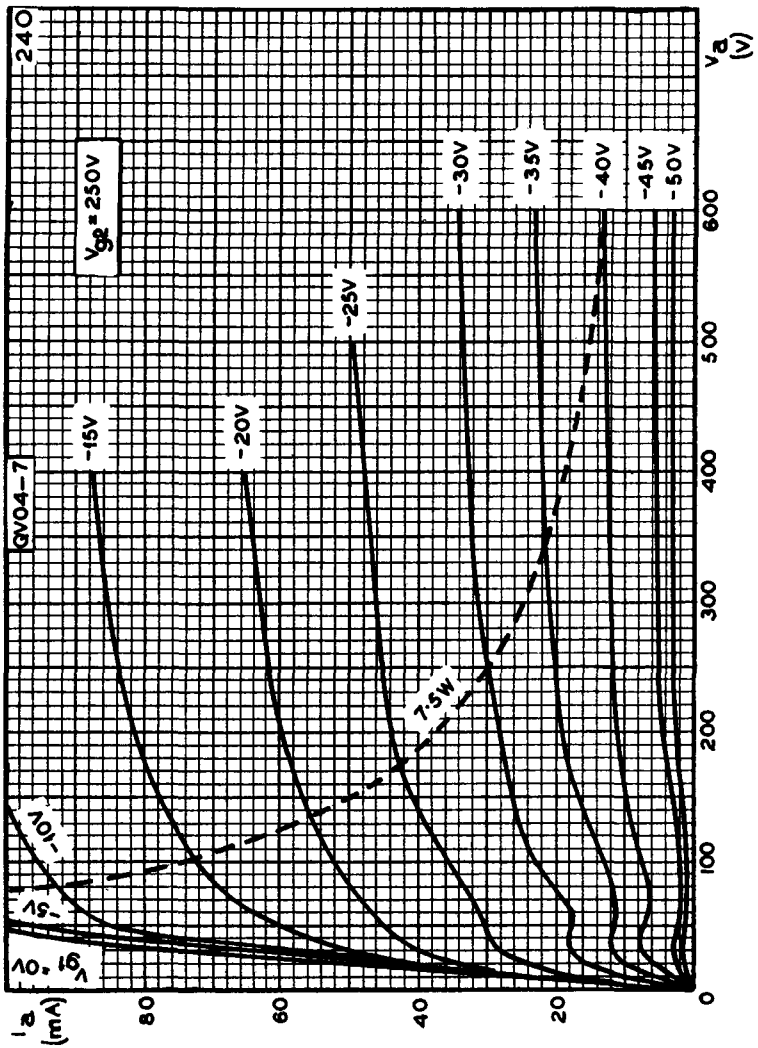

ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE. V_{g2} = 250V

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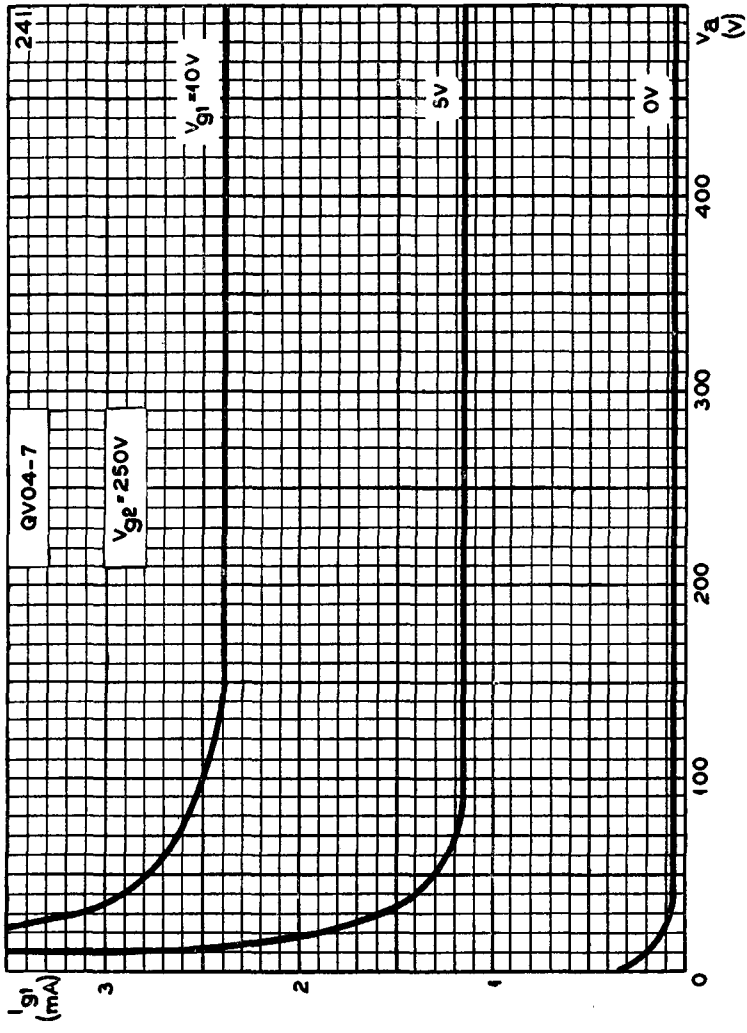

GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE V_{g2}=250V

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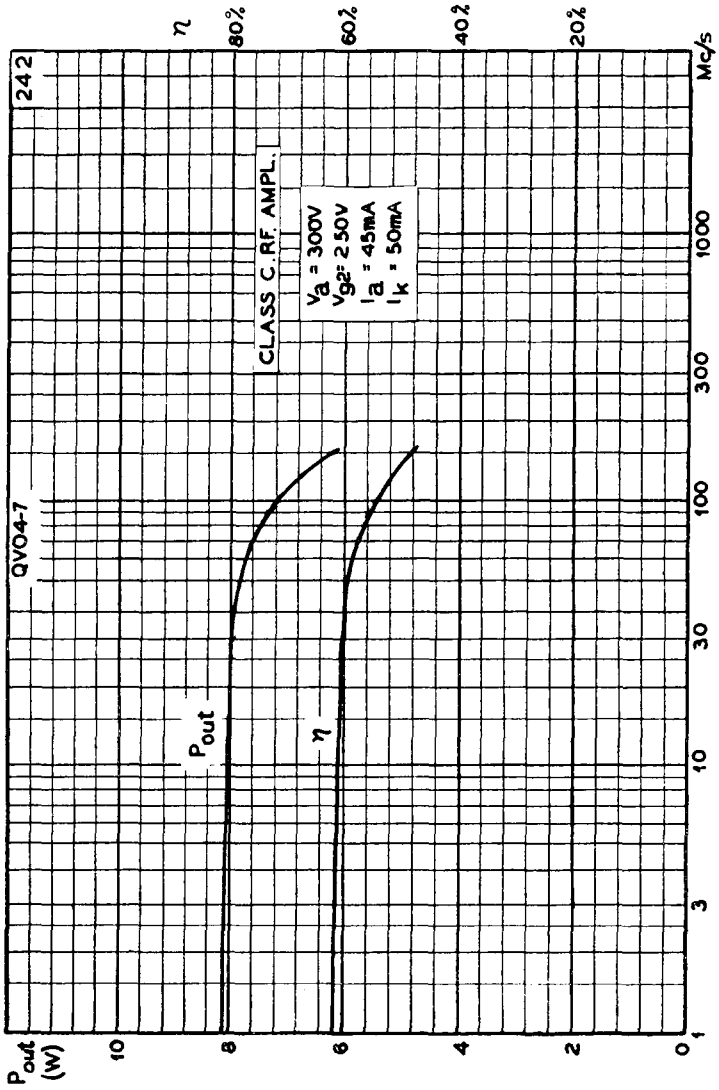

FREQUENCY CHARACTERISTICS