

AMERICAN 813

R.F. POWER TETRODE

QY2-100

Beam power tetrode rated for a maximum anode dissipation of 100 W, and primarily intended for use as a Class "C" R.F. amplifier at frequencies up to 120 Mc/s.

FILAMENT

Thoriated Tungsten		
V_f	10.0	V
I_f	5.0	A
Total Emission	2.7	A

CAPACITANCES

C_{in}	16.3	$\mu\mu F$
C_{out}	14.0	$\mu\mu F$
C_{a-g1}	< 0.25	$\mu\mu F$

CHARACTERISTICS At $V_a=2,000$ V, $V_{g2}=400$ V, $I_a=50$ mA.

g_m	3.75	mA/V
r_a	45,000	Ω
$\mu_{(g1-g2)}$	8.5	

LIMITING VALUES

V_a max.	2,000	V
$V_{a(pk)}$ max.	7,000	V
V_{g2} max.	400	V
V_{g1} max.	-300	V
I_k max.	225	mA
$i_{k(pk)}$ max.	800	mA
I_{g2} max.	55	mA
I_{g1} max.	25	mA
$i_{g1(pk)}$ max.	75	mA
P_a max.	100	W
P_{g2} max.	15	W
Max. operating frequency at full ratings	30	Mc/s
Max. operating frequency at 50% of max. anode voltage and input	120	Mc/s

OPERATING CONDITIONS AS SINGLE VALVE R.F. POWER AMPLIFIER (CLASS "B" TELEPHONY)

V_a	1,500	2,000	V
V_{g2}	400	400	V
V_{g1}	-60	-75	V
I_a	100	75	mA
I_{g2}	4	3	mA
$V_{(pk)}$ drive	70	80	V
P_{drive}	< 2	< 2	W
P_{out}	50	50	W



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OPERATING CONDITIONS AS SINGLE VALVE R.F. POWER AMPLIFIER (CLASS "C" UNMODULATED) OR AS OSCILLATOR

V_a	1,250	1,500	2,000	V
* V_{g2}	300	300	400	V
R_{g2}	27,000	40,000	36,000	Ω
** V_{g1}	-75	-90	-120	V
R_{g1}	6,000	7,500	12,000	Ω
R_k	330	400	520	Ω
I_a	180	180	180	mA
I_{g2}	35	30	45	mA
I_{g1}	12	12	10	mA
$V_{(pk)drive}$	160	175	205	V
P_{drive}	1.7	1.9	1.9	W
P_{out}	170	210	275	W

*May be obtained from a fixed supply, or from the anode supply through a series resistor of value shown. In the latter case provision must be made to ensure the $V_{g2}(b)$ does not exceed 800 V.

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

OPERATING CONDITIONS AS SINGLE VALVE R.F. POWER AMPLIFIER (CLASS "C" GRID MODULATED)

V_a	1,500	2,000	V
V_{g2}	400	400	V
V_{g1}	-140	-120	V
I_a	70	75	mA
I_{g2}	3	3	mA
$V_{(pk)drive}$ R.F.	145	120	V
$V_{(pk)drive}$ L.F.	60	60	V
P_{drive} R.F.	<2	<2	W
P_{mod}	<1	<1	W
P_{out}	40	50	W

OPERATING CONDITIONS AS SINGLE VALVE R.F. POWER AMPLIFIER (CLASS "C" ANODE & SCREEN MODULATED)

V_a	1,250	1,600	V
* V_{g2}	300	300	V
R_{g2}	27,000	43,000	Ω
** V_{g1}	-160	-160	V
R_{g1}	12,500	13,500	Ω
I_a	150	150	mA
I_{g2}	35	30	mA
I_{g1} (approx.)	13	12	mA
$V_{(pk)drive}$ R.F.	250	250	V
P_{drive} (approx.)	2.9	2.7	W
P_{out} (approx.)	140	180	W

*May be obtained from a separate supply modulated simultaneously with the anode supply, or from modulated anode supply through a series resistor of value shown.

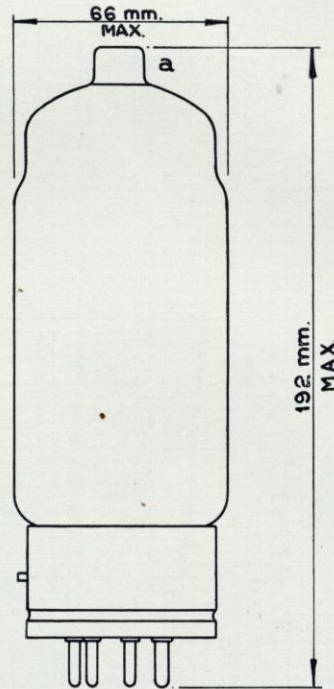
**May be obtained from a fixed supply or by grid resistor of value shown.



R.F. POWER TETRODE

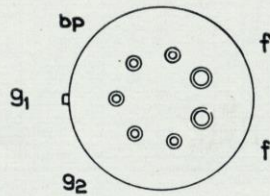
QY2-100

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M.V.H.15 GIANT 7-PIN BASE

Viewed from free end of pins.



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WEIGHT

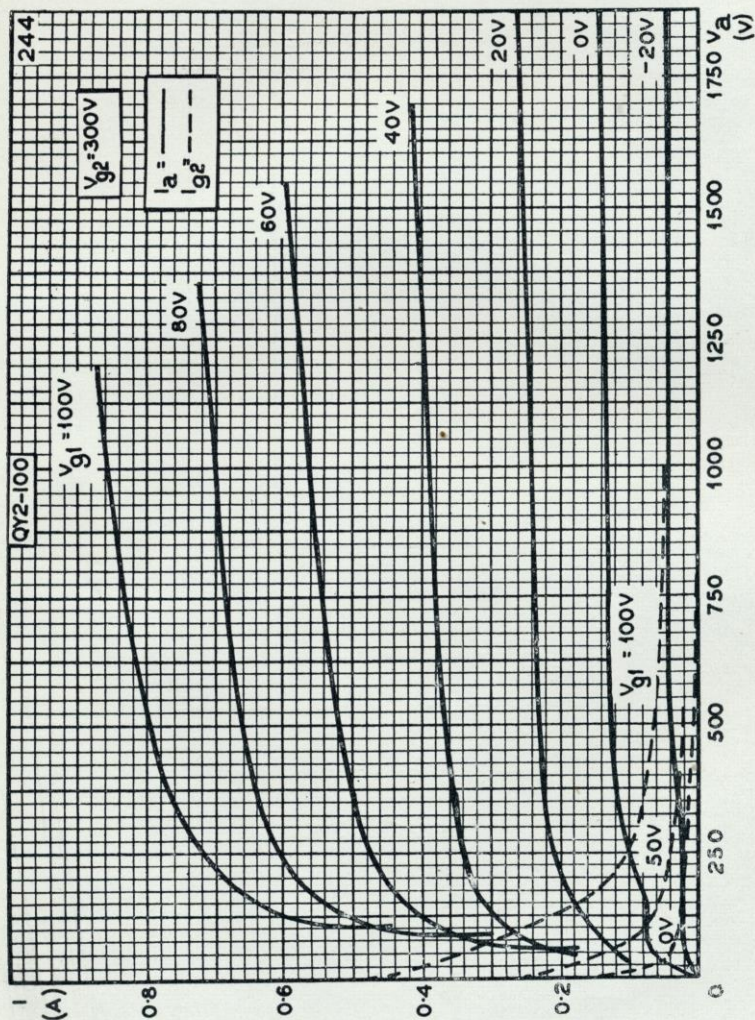
Valve only

9 oz.

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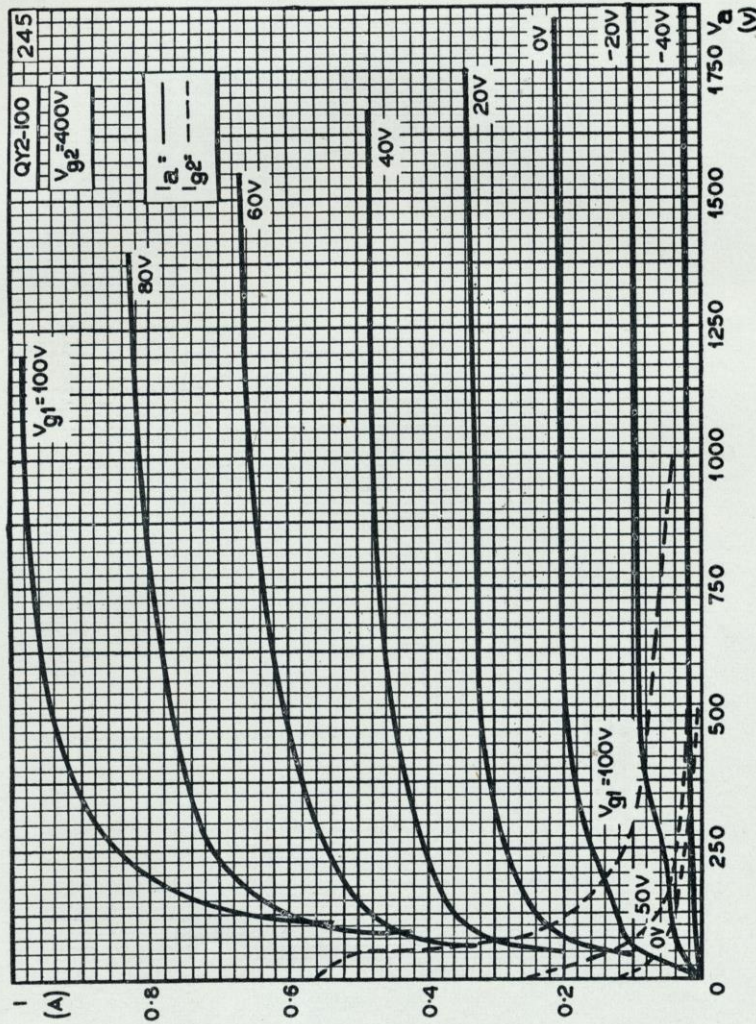


ANODE CURRENT AND SCREEN-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE FOR SCREEN-GRID VOLTAGE OF 300 V.

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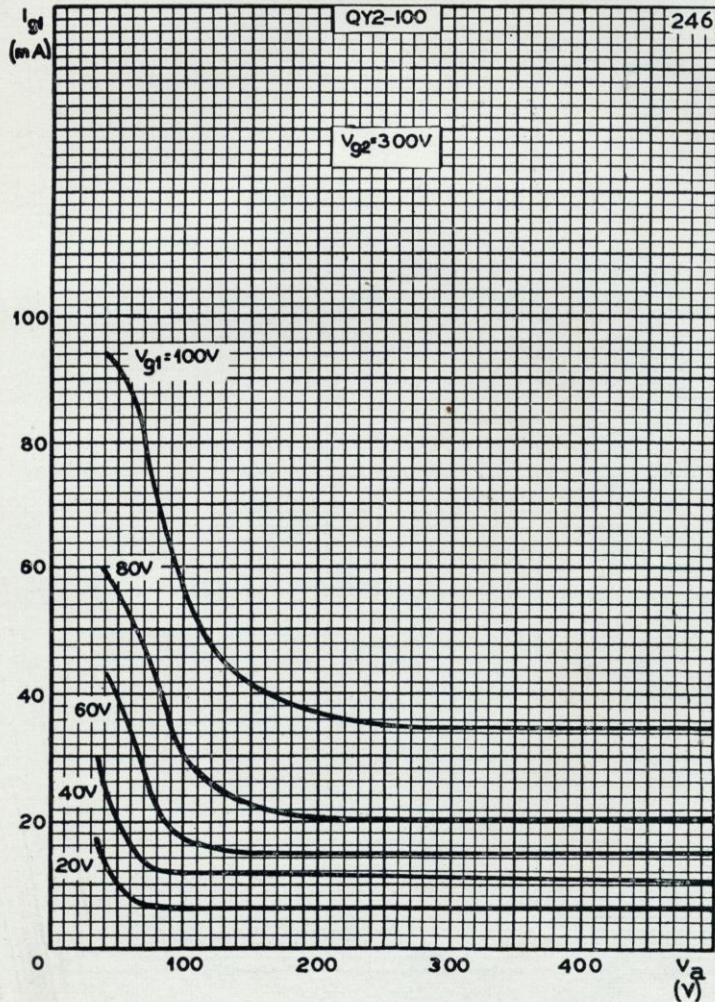


ANODE CURRENT AND SCREEN-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE FOR SCREEN-GRID VOLTAGE OF 400 V.

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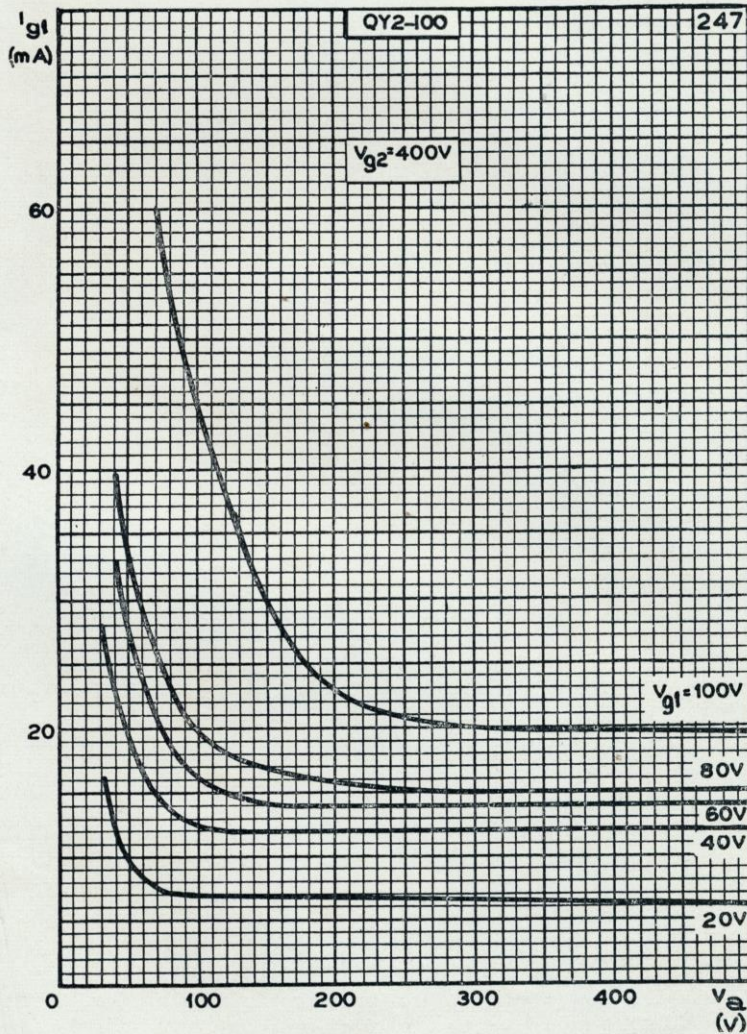


CONTROL-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE
FOR SCREEN-GRID VOLTAGE OF 300 V.

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CONTROL-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE
FOR SCREEN-GRID VOLTAGE OF 400 V.