TETRODE

QV08-100

Application: *R.F. amplifier, suitable for single side-band applications.*
Power output: *200W.*
Frequency: *30Mc/s at full ratings.*
Construction: *Glass, natural cooling.*

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS—TRANSMITTING VALVES which precede this section of the handbook.

CATHODE

Indirectly heated

V_h	6.3	V
I_h	3.9	A

MOUNTING POSITION

Vertical, or horizontal with plane of anode vertical

CAPACITANCES

c_{a-g1}	<900	mpF
c_{g1-k}	30	pF
c_{a-k}	12.7	pF

CHARACTERISTICS (measured at $V_a = 750V$, $V_{g2} = 250V$, $I_a = 100mA$)

g_m	9.0	mA/V
μ_{g1-g2}	5.7	

COOLING

Natural cooling

T_{bulb} max.	300	°C
$T_{anode\ seal}$ max.	220	°C
T_{pins} max.	180	°C

WEIGHT

Valve only	8	oz
	220	g
Shipping weight	15	oz
	400	g

ACCESSORIES

Base socket	40211/01
Anode cap	40619

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TETRODE

CLASS 'C' TELEGRAPHY

Limiting values (absolute ratings)

f max.	30	Mc/s
V_a max.	825	V
I_k max.	450	mA
$i_{k(pk)}$ max.	2.1	A
V_{g2} max.	300	V
$-V_{g1}$ max.	150	V
I_{g1} max.	30	mA
p_a max.	100	W
p_{g2} max.	12	W
R_{g1-k} max.	25	kΩ
V_{h-k} max.	125	V

Operating conditions

f	⩽30	Mc/s
V_a	750	V
I_a	385	mA
V_{g2}	250	V
I_{g2}	20	mA
V_{g1}	−90	V
I_{g1}	7.0	mA
p_a	85	W
$v_{in(pk)}$	120	V
$P_{load(driver)}$	2.5	W
η_a	70	%
P_{out}	200	W
P_{load} ($\eta_{transfer}$ = 85%)	170	W

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CLASS 'C' ANODE AND SCREEN GRID MODULATION

Limiting values (absolute ratings)

Carrier condition for a modulation factor of 1

f max.	30	Mc/s
V_a max.	650	V
i_k max.	380	mA
$i_{k(pk)}$ max.	1.8	A
V_{g2} max.	300	V
$-V_{g1}$ max.	150	V
I_{g1} max.	30	mA
p_a max.	67	W
p_{g2} max.	10	W
R_{g1-k} max.	25	kΩ
V_{h-k} max.	125	V

Operating conditions

f	⩽30	Mc/s
V_a	600	V
I_a	300	mA
V_{g2}	250	V
I_{g2}	20	mA
V_{g1}	−100	V
I_{g1}	4.0	mA
p_a	50	W
p_{g2}	5.0	W
$v_{in(pk)}$	110	V
$P_{load(driver)}$	3.0	W
η_a	72	%
P_{out}	130	W
P_{load} ($\eta_{transfer}$ = 85%)	110	W

For 100% modulation

$P_{mod.}$	92	W
$v_{g2(pk)}$	220	V

CLASS 'B' R.F. AMPLIFIER (S.S.B.)

Limiting values (absolute ratings)

f max.	30	Mc/s
V_a max.	825	V
I_k max.	430	mA
V_{g2} max.	350	V
p_a max.	100	W
p_{g2} max.	12	W
R_{g1-k} max.	25	kΩ
V_{h-k} max.	125	V

Operating conditions (for two tone modulation)

The r.f. voltage is modulated by two sinusoidal a.f. signals of equal strength but different frequency.

f	⩽30	Mc/s
V_a	750	V
V_{g2}	310	V
*V_{g1}	−45	V
$I_{a(o)}$	130	mA
$I_{a\ (max.\ sig.)}$	270	mA
$I_{g2(o)}$	<5.0	mA
$I_{g2\ (max.\ sig.)}$ approx.	26	mA
I_{g1}	0	mA
†$V_{in(pk)}$	45	V
$P_{a\ (max.\ sig.)}$	90	W
$P_{g2\ (max.\ sig.)}$	8.0	W
η_a	55	%
P_{out} (two tone)	110	W
P.E.P.	220	W

*To be adjusted for $I_{a(o)}$ = 130mA

†To be adjusted for I_{g1} = 0mA

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CLASS 'B' A.F. AMPLIFIER AND MODULATOR

Limiting values (absolute ratings)

V_a max.	825	V
I_k max.	430	mA
$i_{k(pk)}$ max.	600	mA
V_{g2} max.	300	V
$-V_{g1}$ max.	150	V
I_{g1} max.	30	mA
p_a max.	100	W
p_{g2} max.	12	W
R_{g1-k} max.	25	kΩ
V_{h-k} max.	125	V

Operating conditions (two valves)

V_a	750	600	V
V_{g2}	250	250	V
V_{g1}	−45	−45	V
$I_{a(o)}$	2 × 45	2 × 25	mA
$I_{a\ (max.\ sig.)}$	2 × 280	2 × 235	mA
$I_{g2(o)}$	0	2 × 500	μA
$I_{g2\ (max.\ sig.)}$	2 × 40	2 × 24	mA
$I_{g1\ (max.\ sig.)}$	2 × 1.0	2 × 0.5	mA
$V_{in(g1-g1)r.m.s.}$	78	74	V
p_a	2 × 60	2 × 40	W
R_{a-a}	3.6	3.5	kΩ
η_a	71.5	71.5	%
P_{out}	300	200	W
D_{tot}	6.5	5.0	%

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TETRODE

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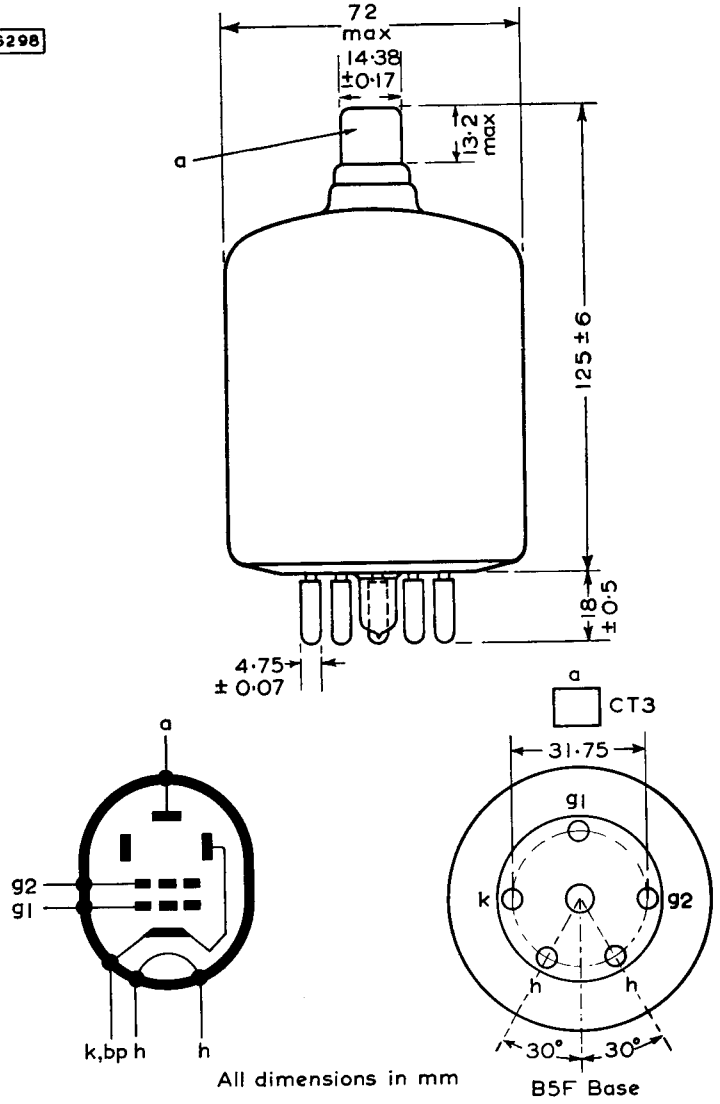
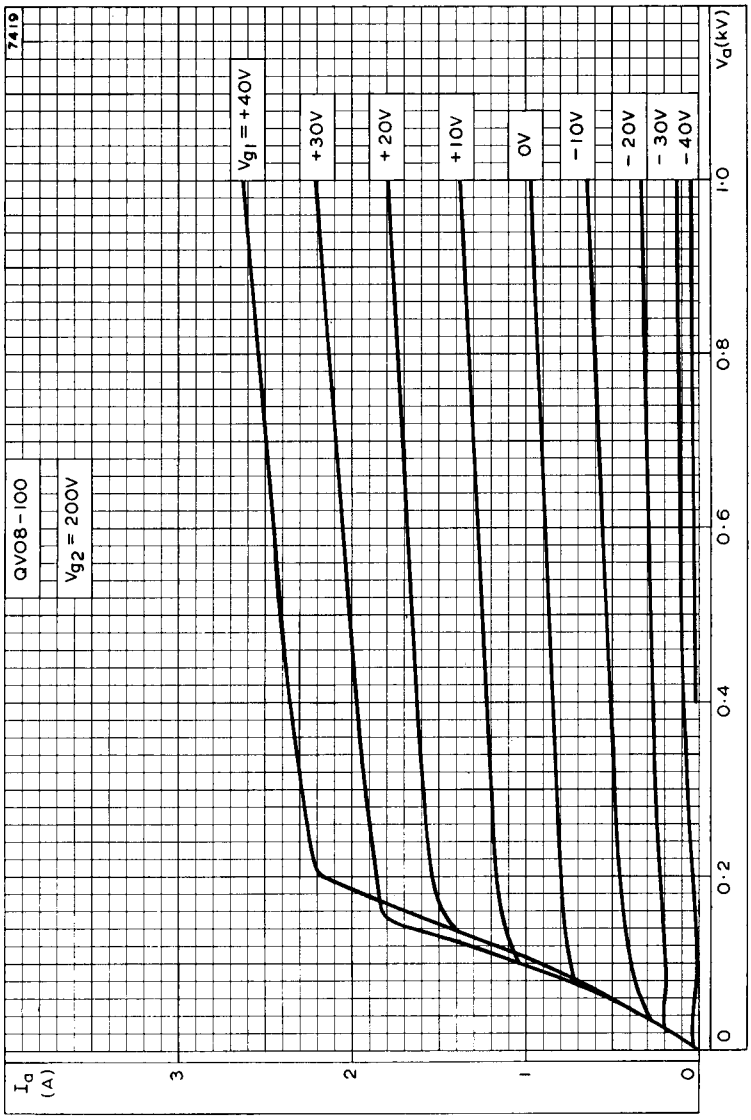
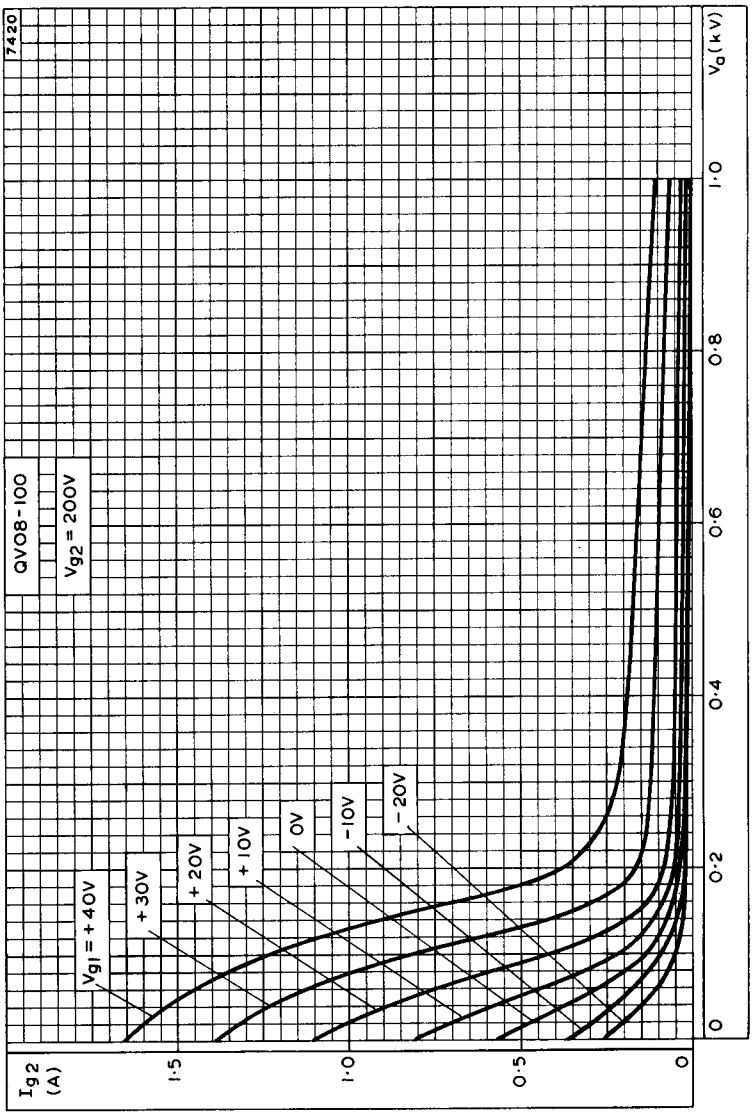


All dimensions in mm

QV08-100

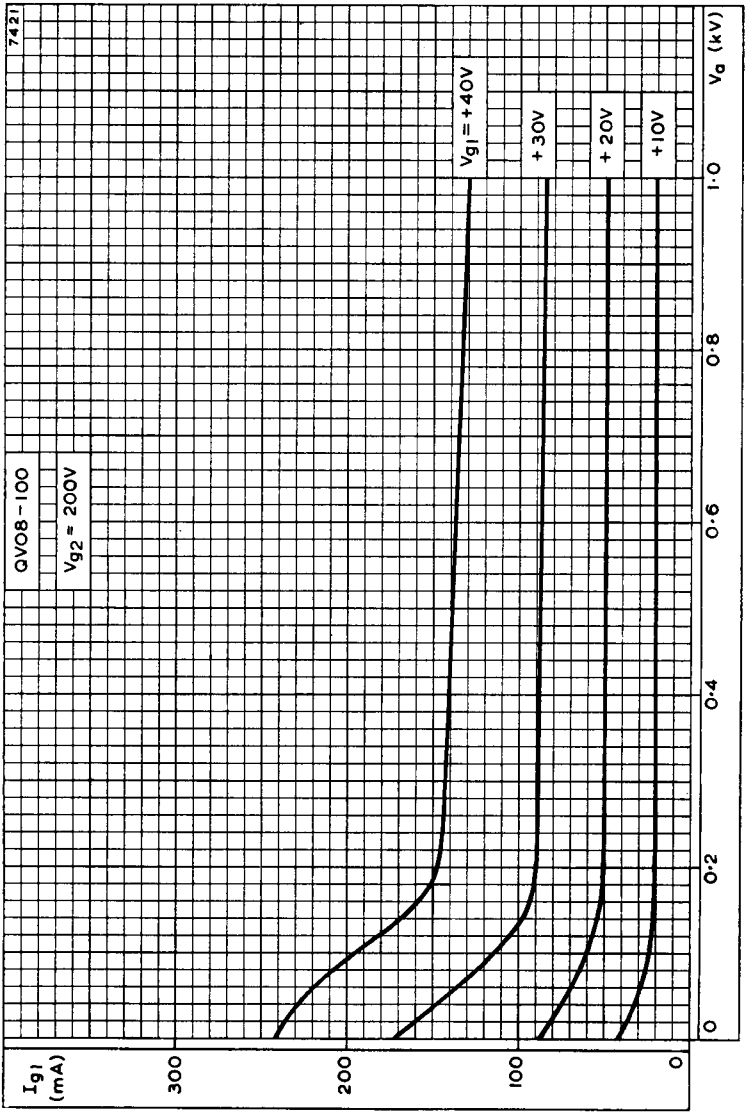


ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. V_{g2} = 200V

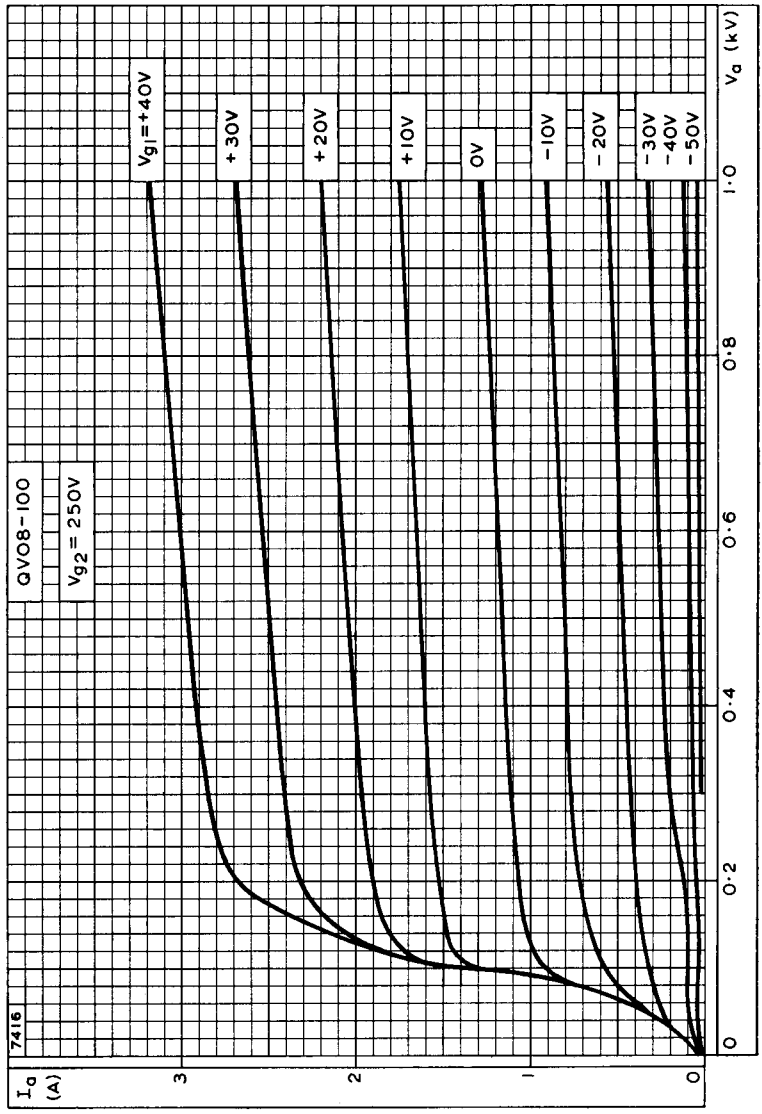


SCREEN-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. V_{g2} = 200V

QV08-100

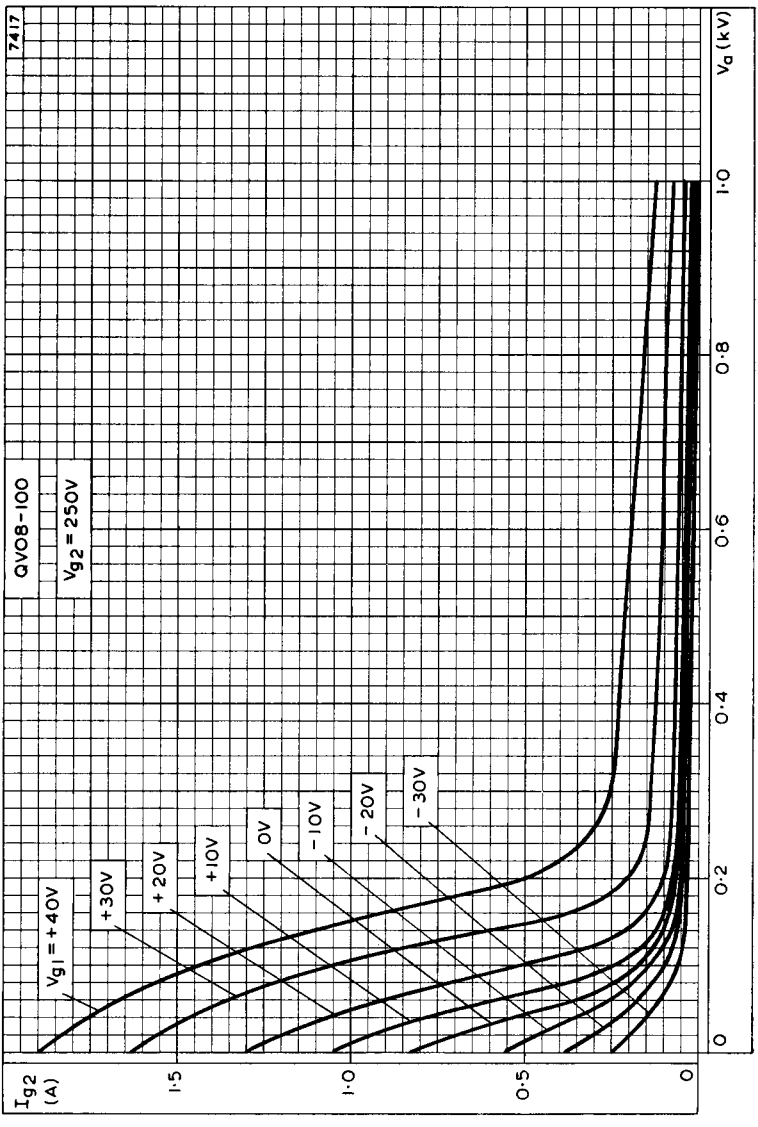


CONTROL-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. V_{g2} = 200V

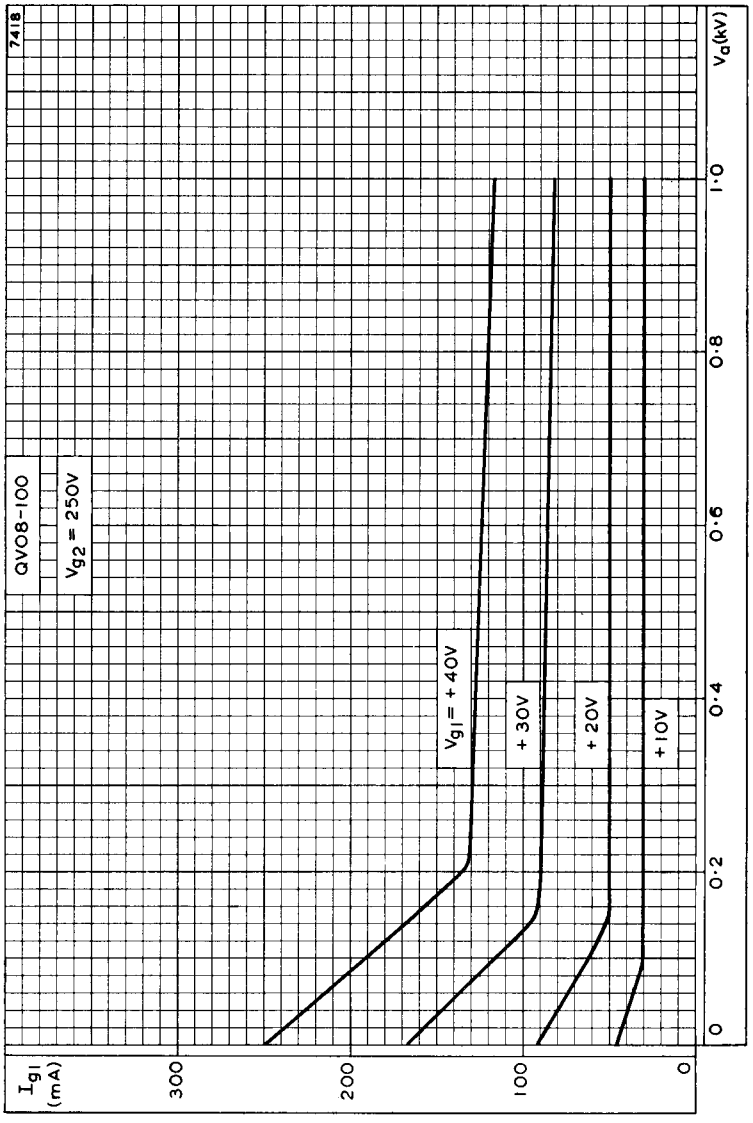


ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. V_{g2} = 250V

QV08-100

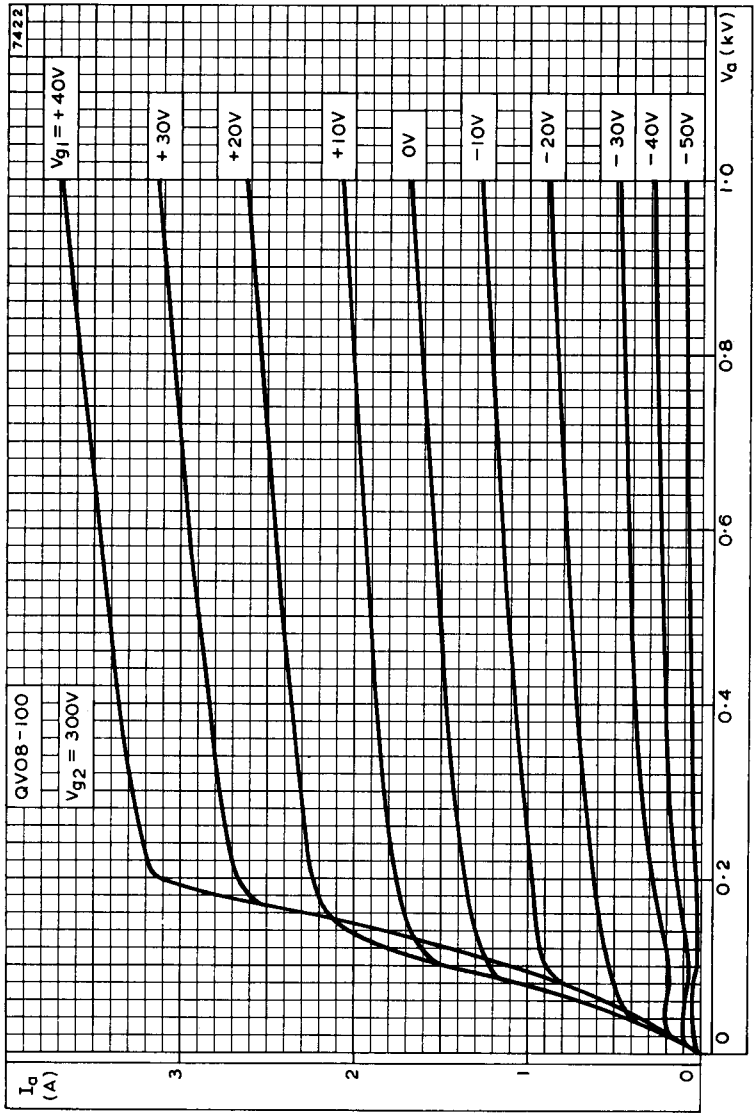


SCREEN-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. V_{g2} = 250V



CONTROL-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. V_{g2} = 250V

QV08-100



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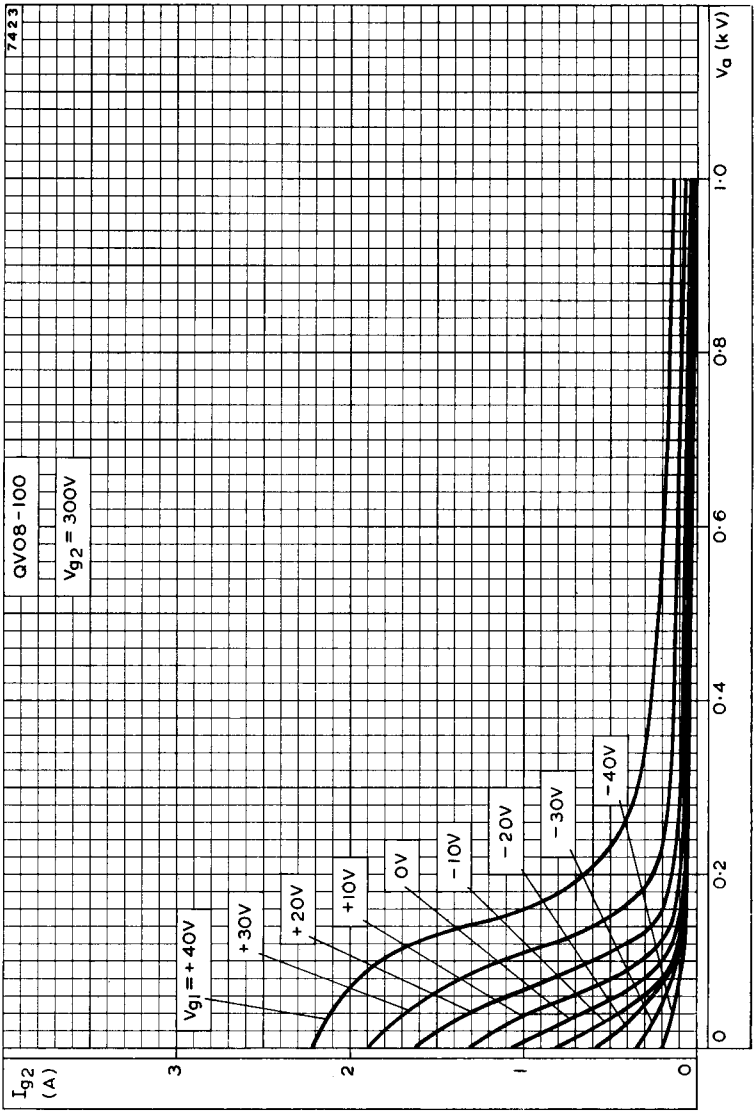
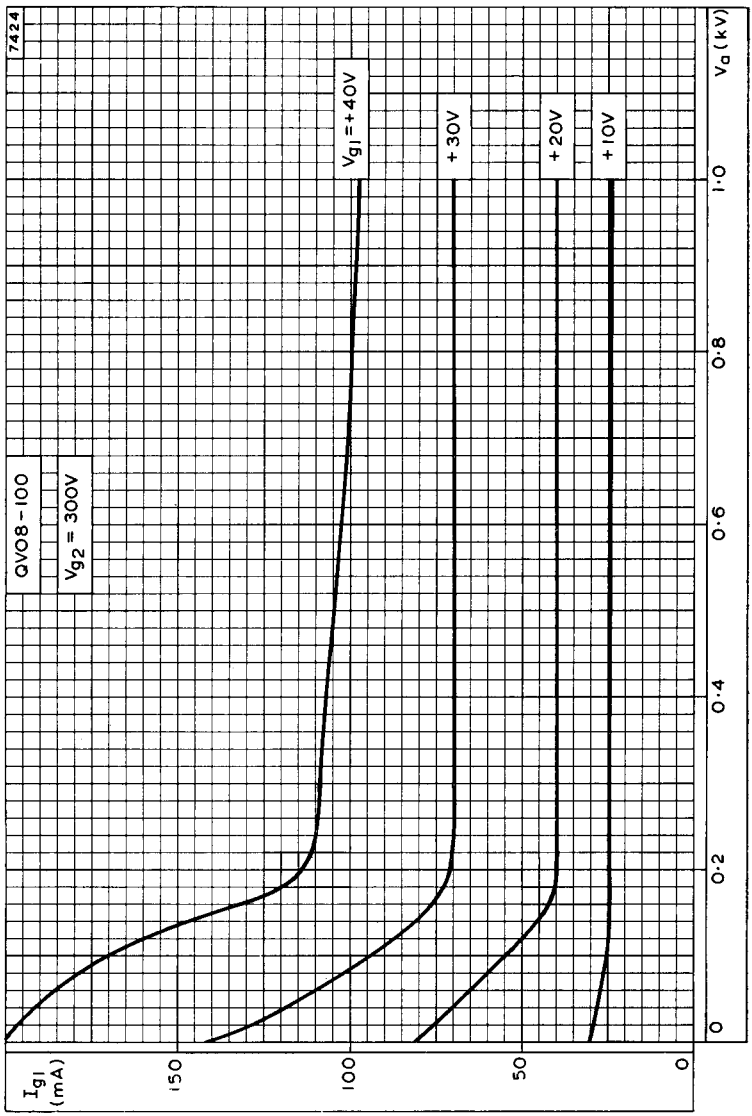


SCREEN-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. V_{g2} = 300V

QV08-100



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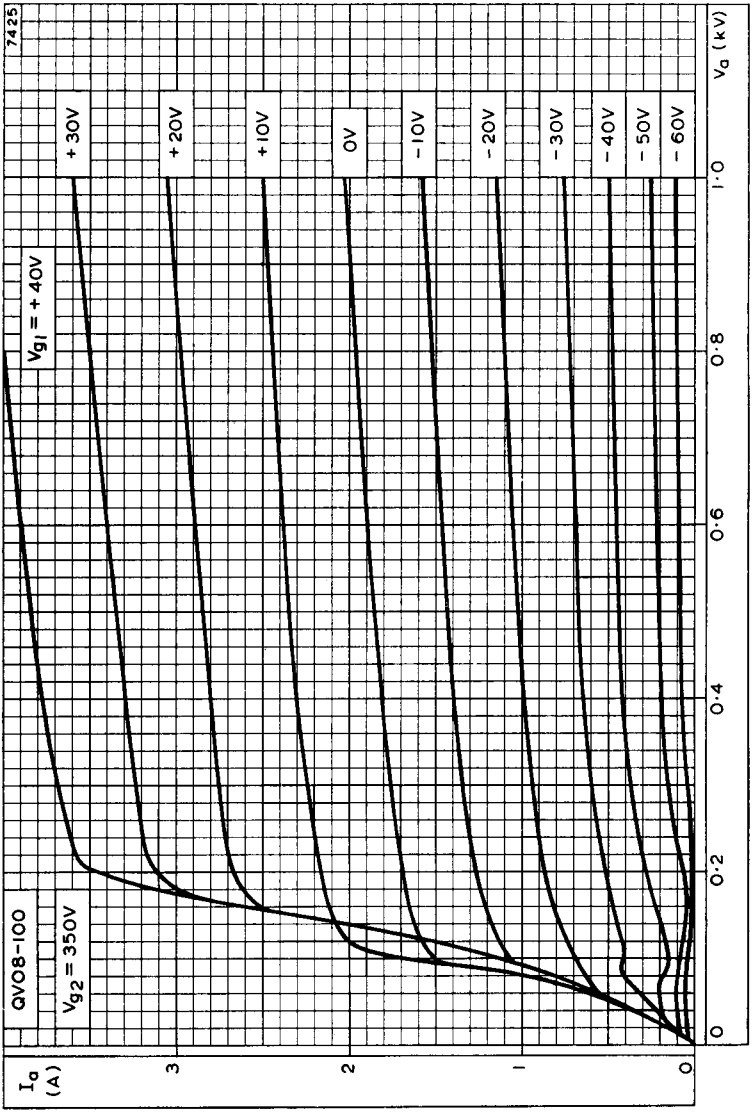
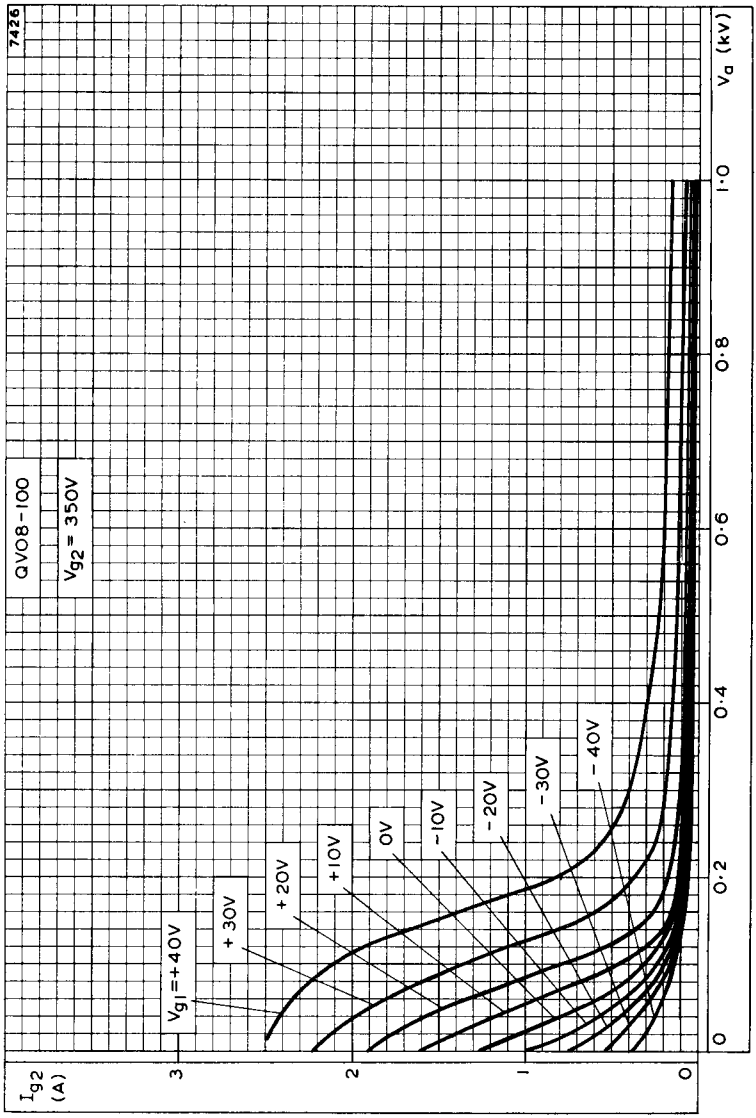
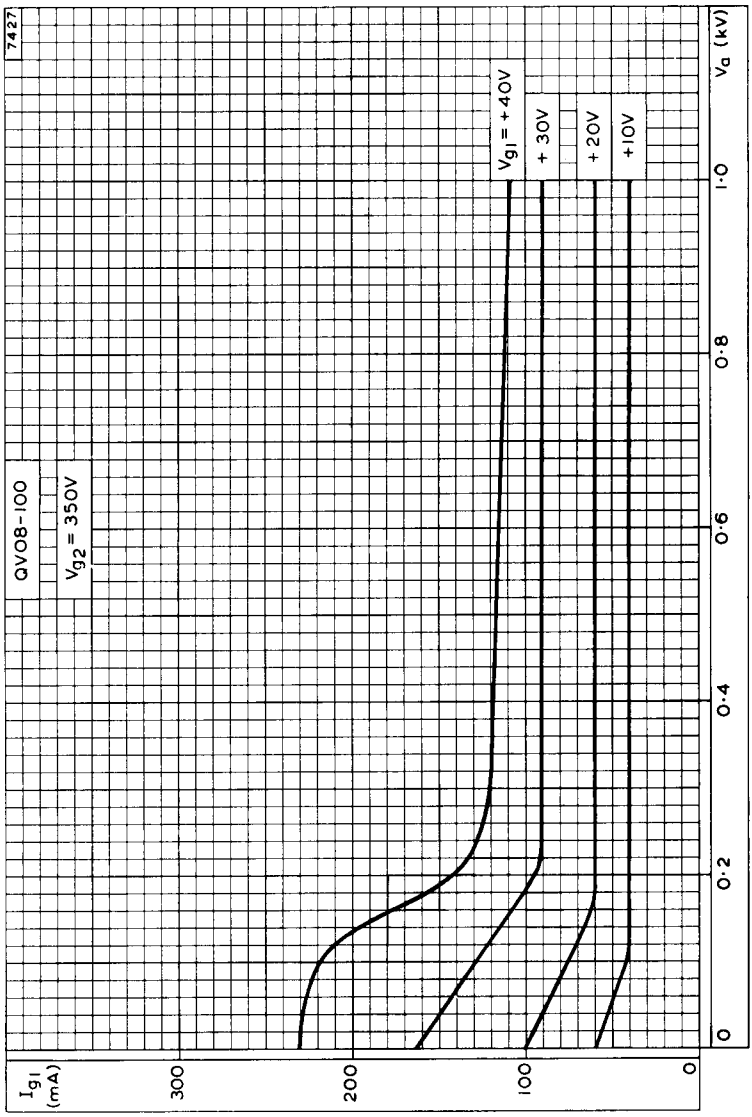


ANODE CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. V_{g2} = 350V

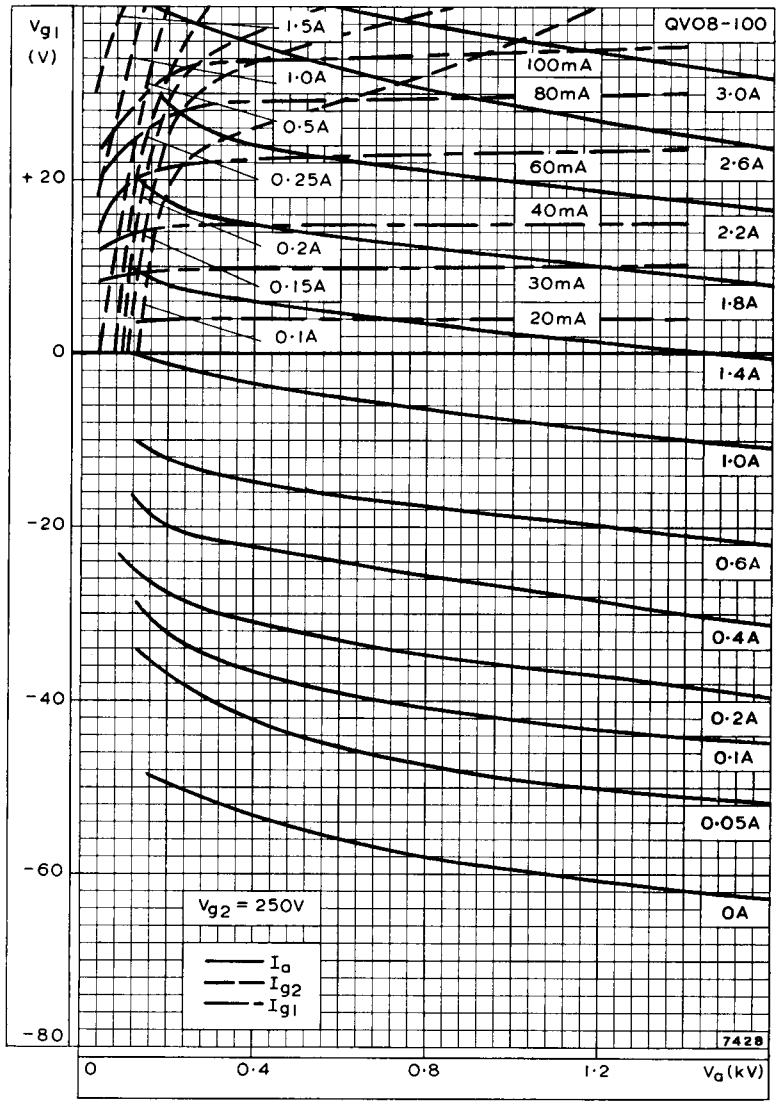
QV08-100



SCREEN-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. V_{g2} = 350V



CONTROL-GRID CURRENT PLOTTED AGAINST ANODE VOLTAGE WITH CONTROL-GRID VOLTAGE AS PARAMETER. V_{g2} = 350V



CONSTANT CURRENT CURVES