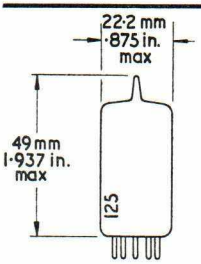
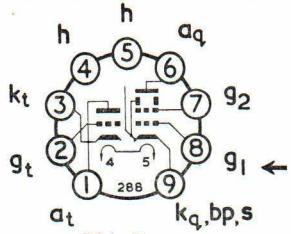


TRIODE BEAM TETRODE



B9A Base

GENERAL

This triode beam tetrode valve combination primarily intended for use in Video and Sync Separator stages of AC/DC television receivers, has a medium mu triode and a high slope beam tetrode with a shield between the two sections to reduce interaction. The triode section is a general purpose one with identical characteristics to the 6/30L2.

Heater Current	I_h	0·3	A
Heater Voltage	V_h	9·4	V

RATINGS

		Triode	Tetrode	
Maximum Anode Dissipation	$P_{a(max)}$	2	3	W
Maximum Screen Grid Dissipation	$P_{g2(max)}$	—	1	W
Maximum Anode Voltage	$V_{a(max)}$	250	250	V
Maximum Screen Grid Voltage	$V_{g2(max)}$	—	250	V
Maximum Heater to Cathode Voltage (R.M.S.)	$V_{h-k(r.m.s.)max}$	150*	150*	V

* Measured with respect to the higher potential heater pin.

INTER-ELECTRODE CAPACITANCES ←

		†	§	‡	
Grid 1 to Earth	C_{g1-E}	7·8	8·0	9·1	pF
Anode Tetrode to Earth	C_{aq-E}	2·4	2·7	3·8	pF
Grid 1 to Anode Tetrode	C_{g1-aq}	0·033	0·047	0·075	pF
Grid Triode to Earth	C_{gt-E}	1·85	2·1	2·9	pF
Anode Triode to Earth	C_{at-E}	2·1	2·3	3·0	pF
Grid Triode to Anode Triode	C_{gt-at}	2·3	2·4	2·7	pF
Grid 1 to Anode Triode	C_{g1-at}	0·0065	0·016	0·03	pF
Grid Triode to Anode Tetrode	C_{gt-aq}	0·0073	0·012	0·015	pF
Anode Tetrode to Anode Triode	C_{aq-at}	0·035	0·043	0·046	pF
Grid 1 to Grid Triode	C_{g1-gt}	0·002	0·0055	0·0094	pF

† In fully shielded socket without can.
§ With holder capacitance balanced out (Holder as below).
‡ Total capacity including B9A nylon phenolic holder without skirt or radial shield (AEI holder type VH19/902).
"Earth" denotes the electrodes of any second value section and the remaining earthy potential electrodes of the section under measurement, heater and shields joined to cathode.

CHARACTERISTICS

		Triode	Tetrode	
Anode Voltage	V_a	200	170	V
Screen Grid Voltage	V_{g2}	—	170	V
Anode Current	I_a	10	10	mA
Mutual Conductance	g_m	3·4	8	mA/V
Amplification Factor (Tetrode g_1 to g_2)	μ	18	44	←

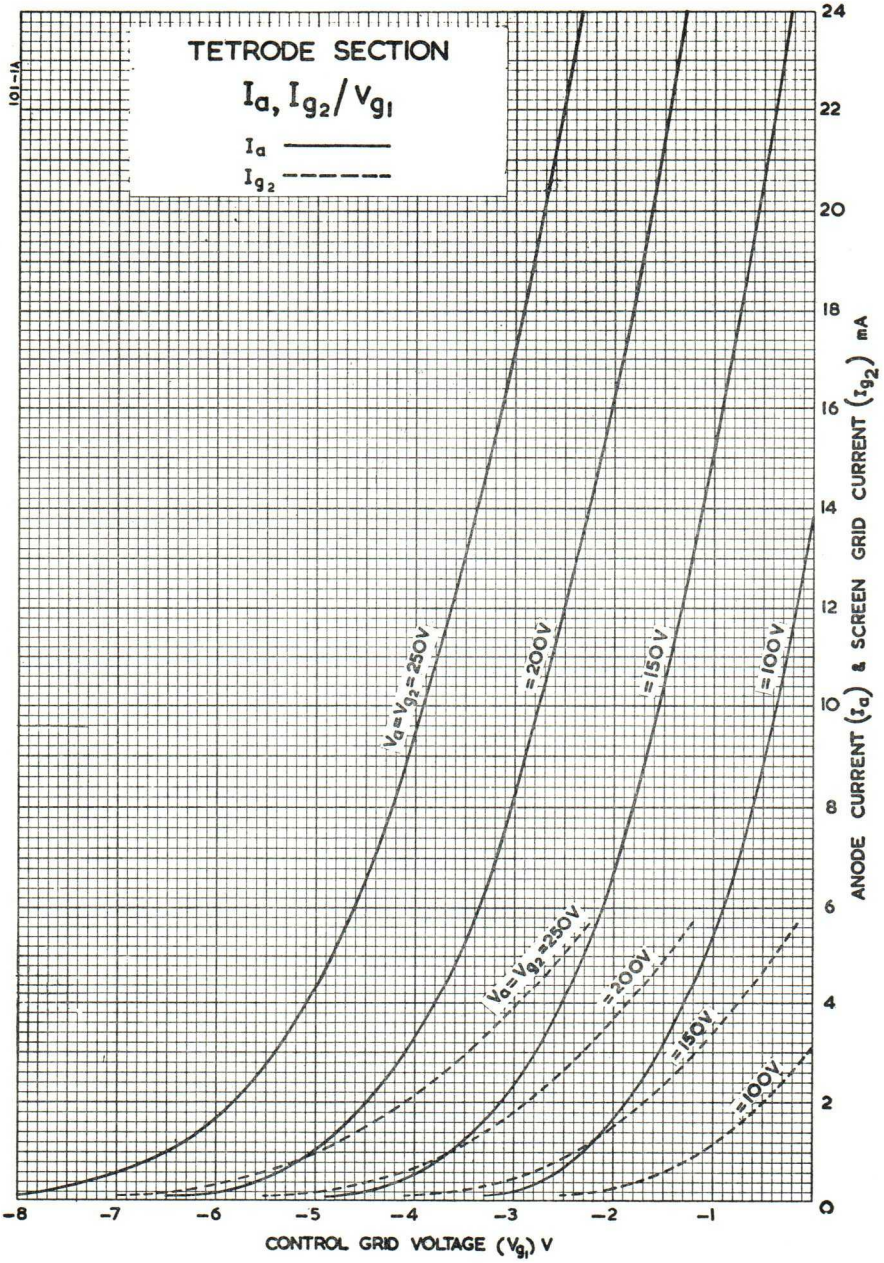
MOUNTING POSITION—Unrestricted.

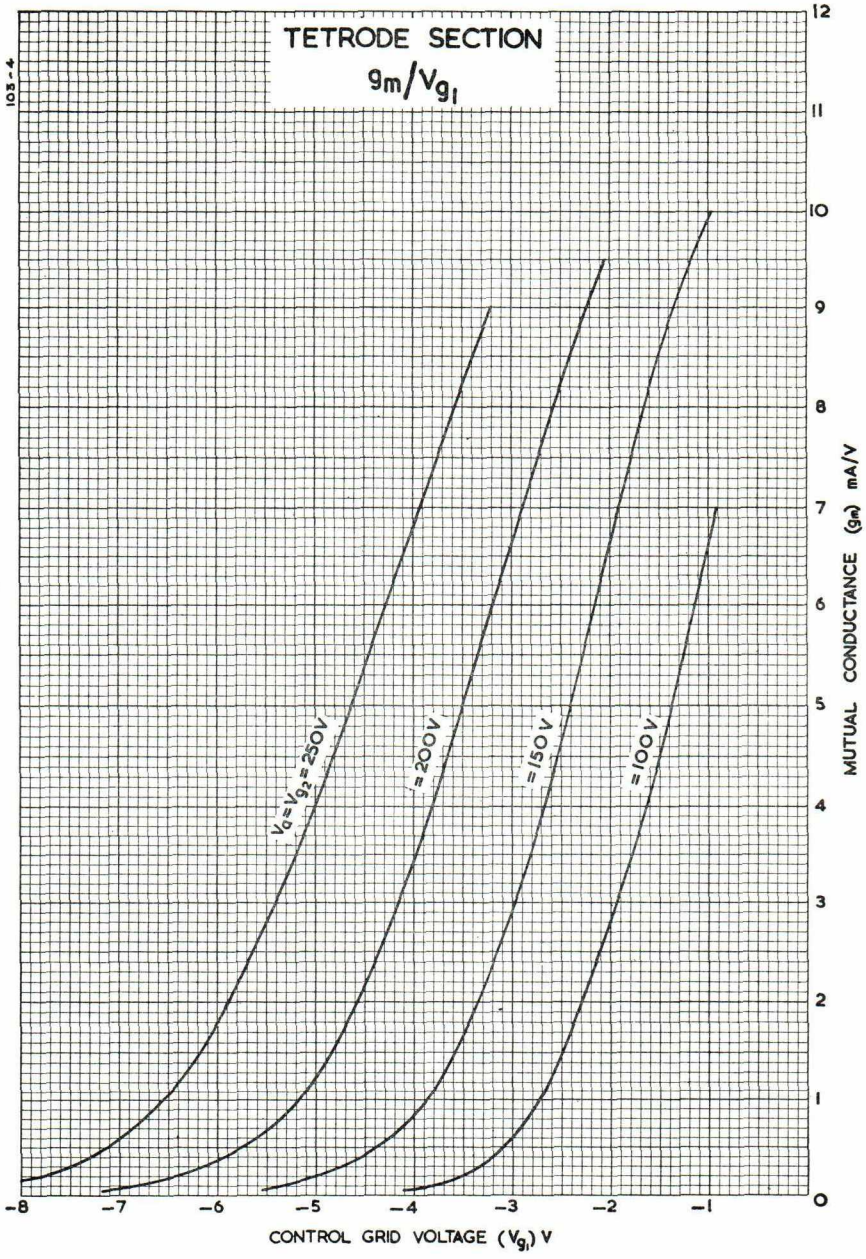
APPROXIMATE WEIGHT

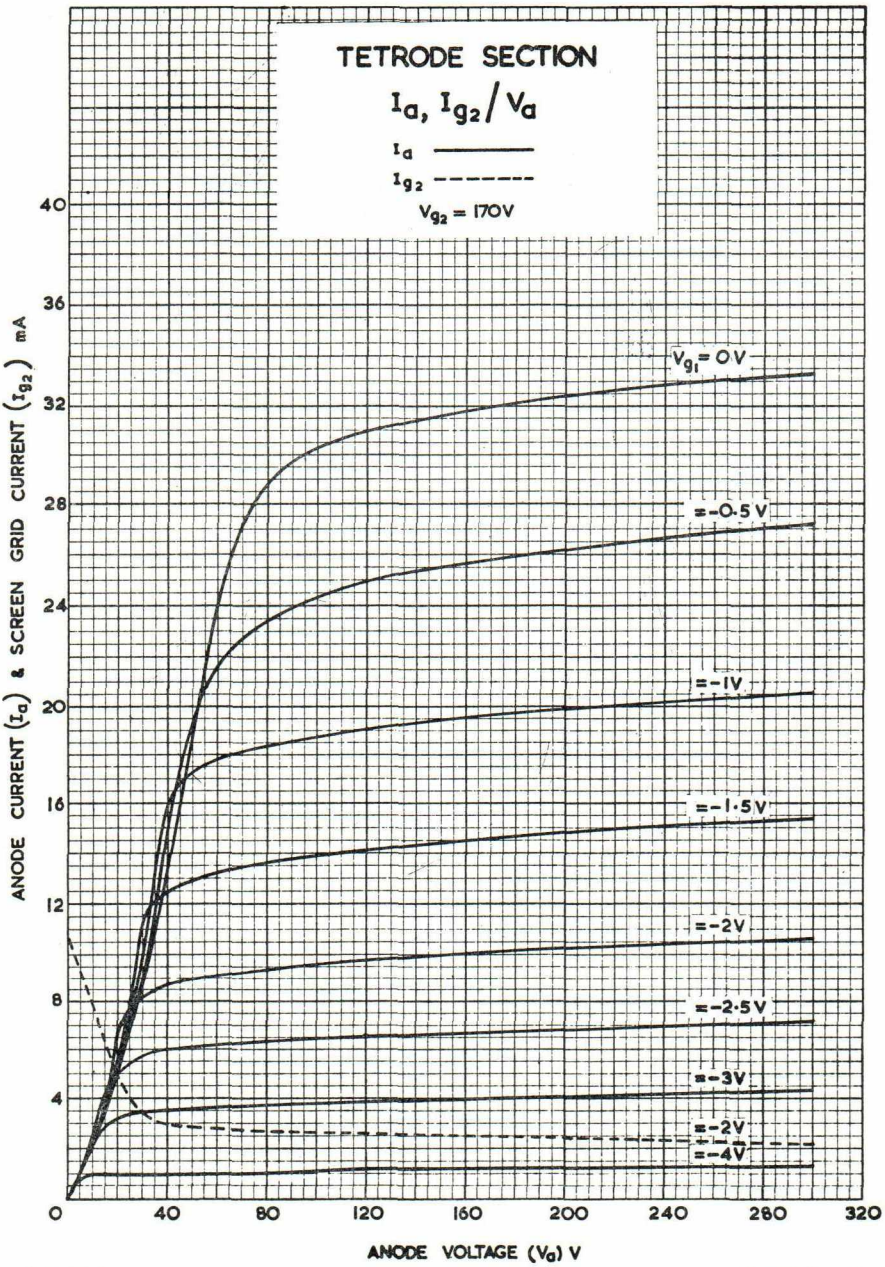
Net	0·5	oz
Packed	0·75	oz

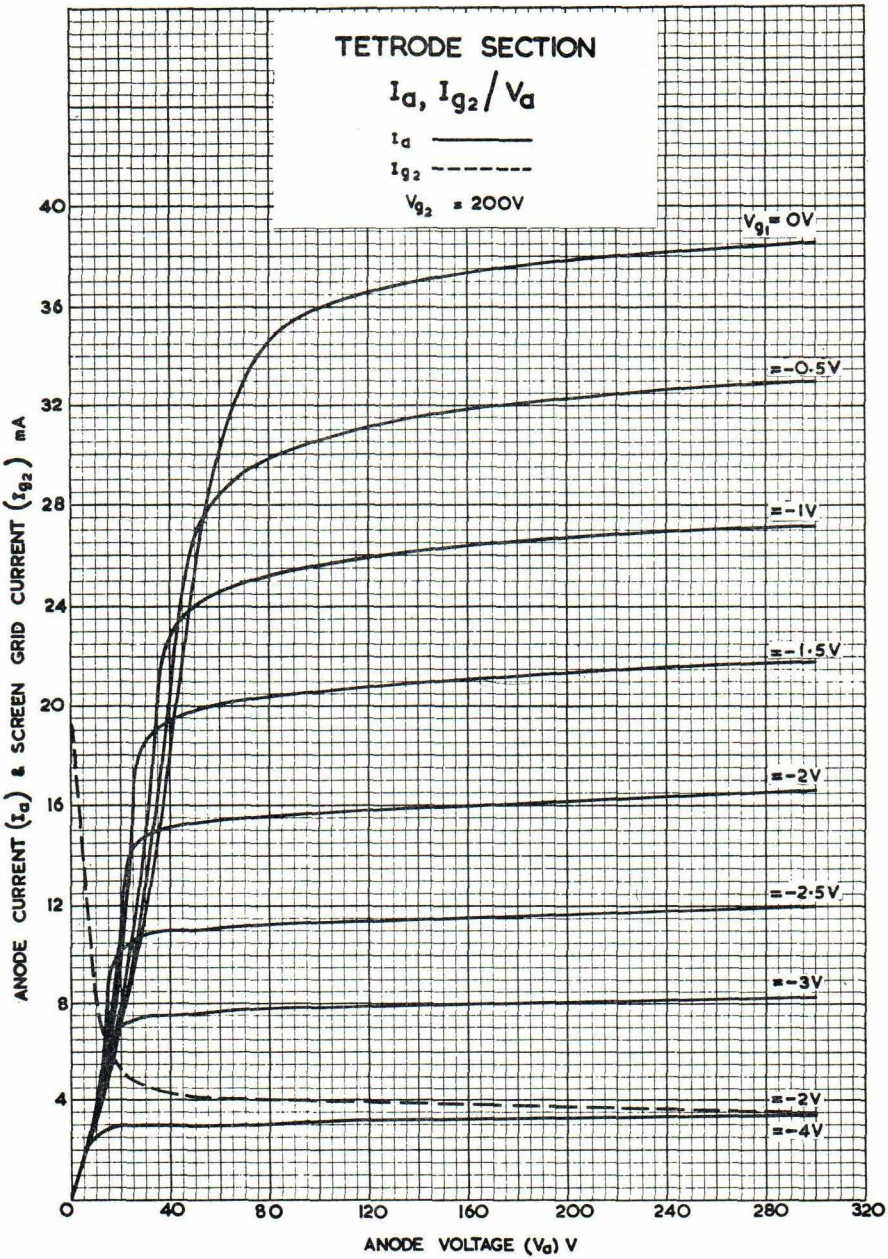
Indicates a change ←

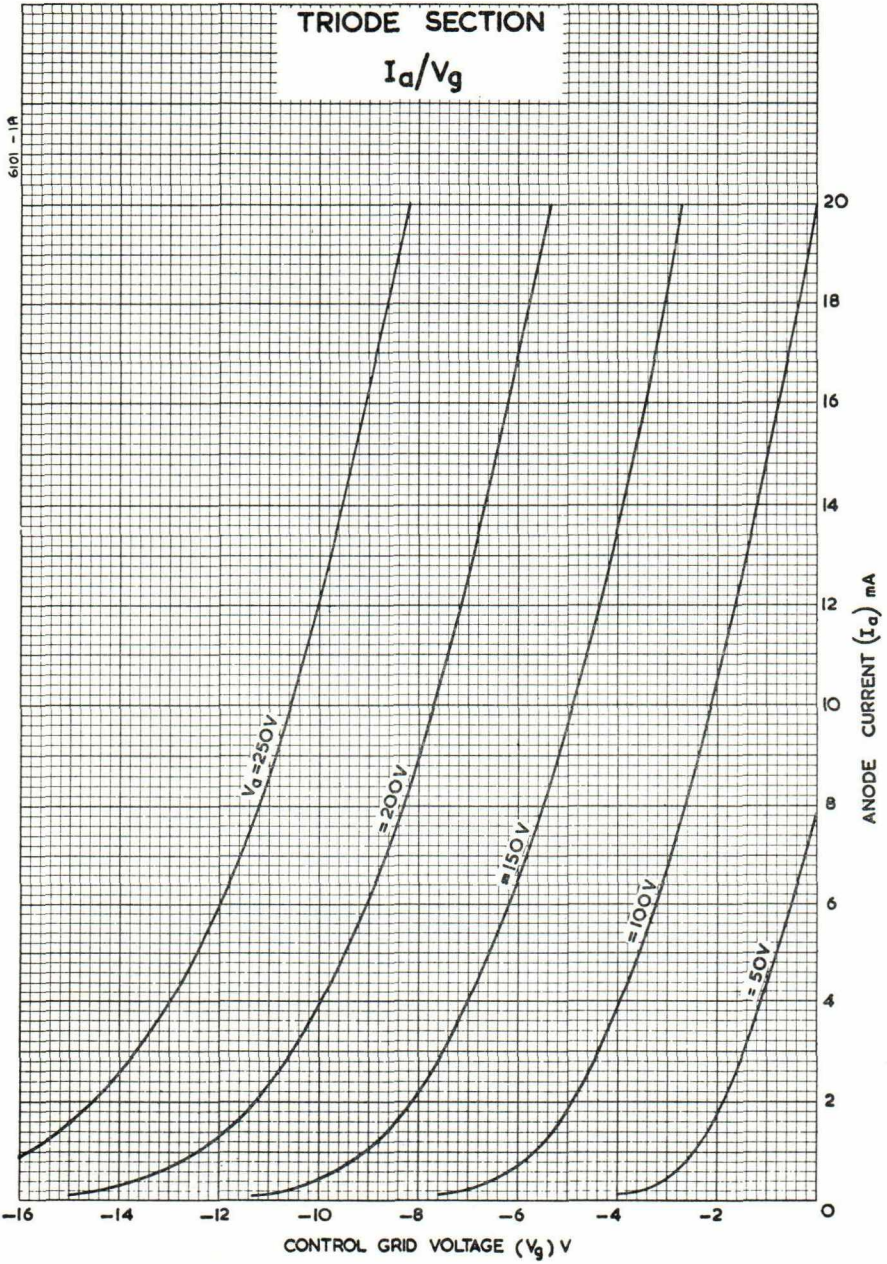
THORN—AEI RADIO VALVES & TUBES LTD.

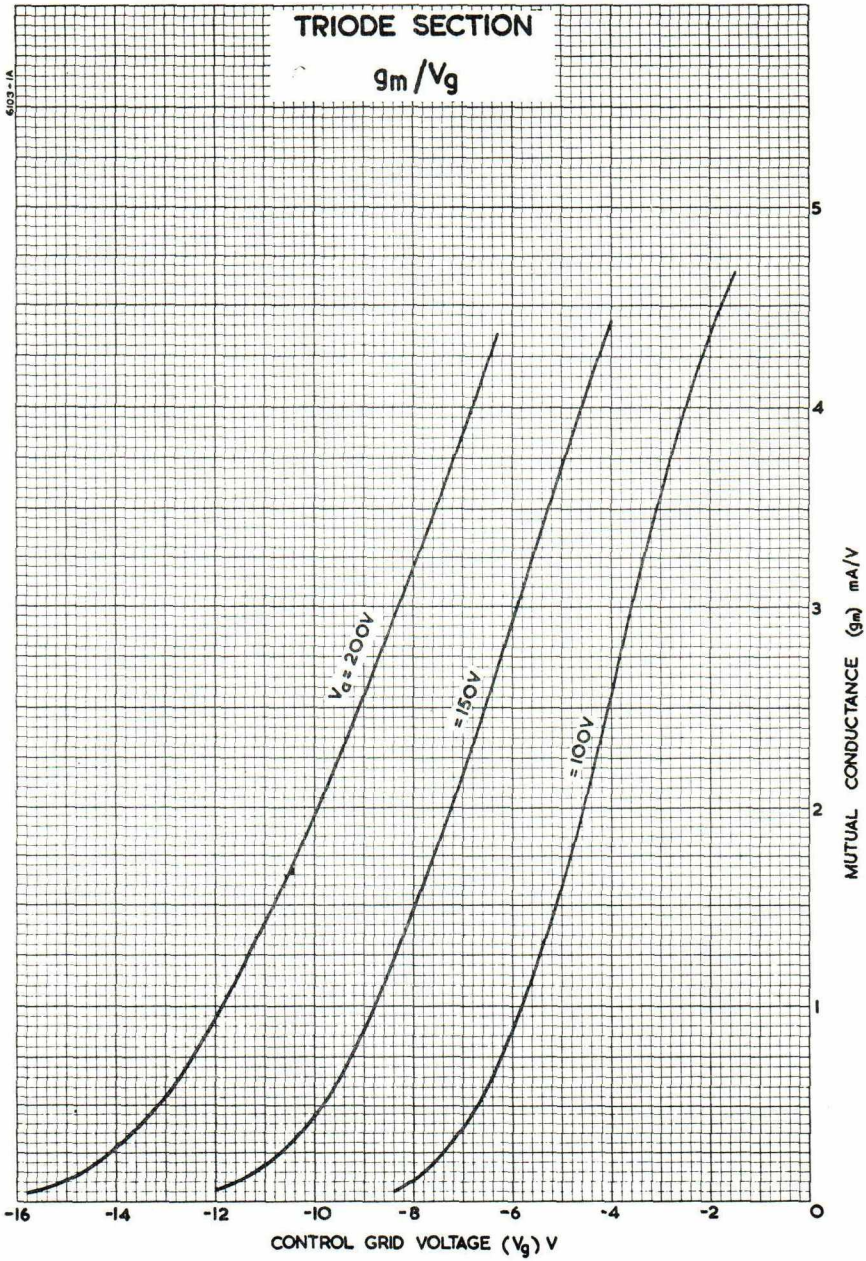

TETRODE SECTION
$I_a, I_{g_2}/V_{g_1}$
I_a
I_{g_2}
101-1A
$V_a = V_{g_2} = 250V$
= 200V
= 150V
= 100V
$V_a = V_{g_2} = 250V$
= 200V
= 150V
= 100V
24
22
20
18
16
14
12
10
8
6
4
2
0
ANODE CURRENT (I_a) & SCREEN GRID CURRENT (I_{g_2}) mA
-8
-7
-6
-5
-4
-3
-2
-1
CONTROL GRID VOLTAGE (V_{g_1}) V

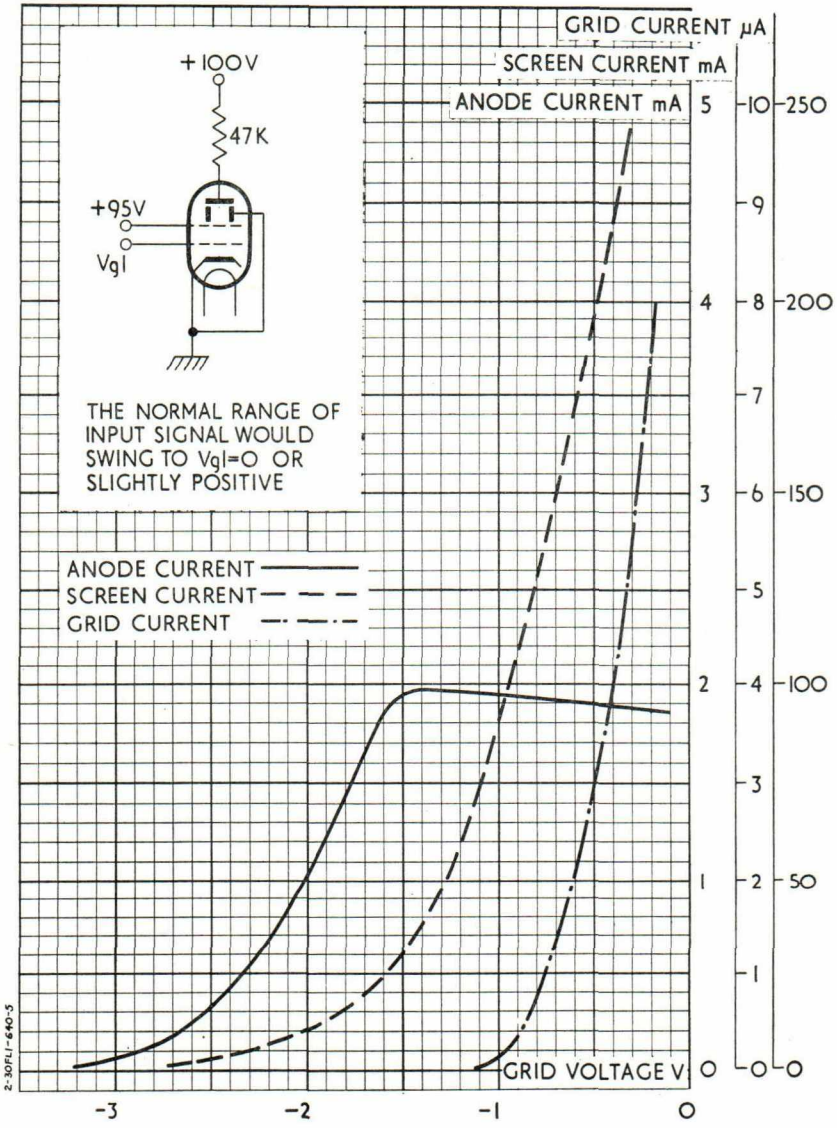

TETRODE SECTION
gm/Vg1
103-4
Va=Vg2=250V
=200V
=150V
=100V
MUTUAL CONDUCTANCE (gm) mA/V
CONTROL GRID VOLTAGE (Vg1) V
-8
-7
-6
-5
-4
-3
-2
-1
0
1
2
3
4
5
6
7
8
9
10
11
12


TETRODE SECTION
Ia, Ig2 / Va
Ia
Ig2
Vg2 = 170V
Vg1 = 0V
= -0.5V
= -1V
= -1.5V
= -2V
= -2.5V
= -3V
= -2V
= -4V
ANODE CURRENT (Ia) & SCREEN GRID CURRENT (Ig2) mA
0
4
8
12
16
20
24
28
32
36
40
40
80
120
160
200
240
280
320
ANODE VOLTAGE (Va) V


TETRODE SECTION
Ia, Ig2 / Va
Ia
Ig2
Vg2 = 200V
Vg1 = 0V
= -0·5V
= -1V
= -1·5V
= -2V
= -2·5V
= -3V
= -2V
= -4V
ANODE CURRENT (Ia) & SCREEN GRID CURRENT (Ig2) mA
0
4
8
12
16
20
24
28
32
36
40
0
40
80
120
160
200
240
280
320
ANODE VOLTAGE (Va) V


TRIODE SECTION
Ia/Vg
6101-1A
Va=250V
=200V
=150V
=100V
=50V
20
18
16
14
12
10
8
6
4
2
0
ANODE CURRENT (Ia) mA
-16
-14
-12
-10
-8
-6
-4
-2
CONTROL GRID VOLTAGE (Vg) V


TRIODE SECTION
gm/Vg
6103-1A
Va = 200V
= 150V
= 100V
5
4
3
2
1
0
MUTUAL CONDUCTANCE (gm) mA/V
-16
-14
-12
-10
-8
-6
-4
-2
CONTROL GRID VOLTAGE (Vg) V

TETRODE SECTION

Used as limiter in a synchronising separator circuit.