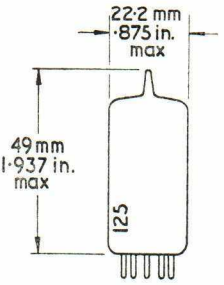
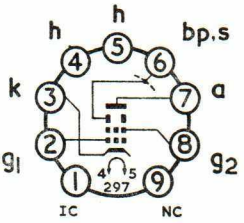


HIGH SLOPE BEAM TETRODE



B9A Base

GENERAL

This valve is a high slope beam tetrode intended for use in the video output stages of A.C. or A.C./D.C. mains television receivers. The characteristics are identical to those of the tetrode section of the 30FL12.

Heater Voltage	V_h	6·3	V
Heater Current	I_h	0·3	A

RATINGS

Maximum Anode Dissipation	$P_{a(max)}$	2·5	W
Maximum Screen Grid Dissipation	$P_{g_2(max)}$	1·3	W
Maximum Anode Voltage	$V_{a(max)}$	250	V
Maximum Screen Grid Voltage	$V_{g_2(max)}$	250	V
Maximum Heater to Cathode Voltage (R.M.S.)	$V_{h\text{-}k(r.m.s.)max}$	150*	V

* Measured with respect to the higher potential heater pin.

INTER-ELECTRODE CAPACITANCES

		†	‡	§	
Grid 1 to Earth	c_{in}	8·1	8·5	9·6	pF
Anode to Earth	c_{out}	2·6	2·9	4·0	pF
Grid 1 to Anode	$c_{g_1\text{-}a}$	0·03	0·034	0·036	pF

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

CHARACTERISTICS

Anode Voltage	V_a	180	V
Screen Grid Voltage	V_{g_2}	180	V
Anode Current	I_a	10	mA
Mutual Conductance	g_m	12·5	mA/V

TYPICAL OPERATION—Video Amplifier

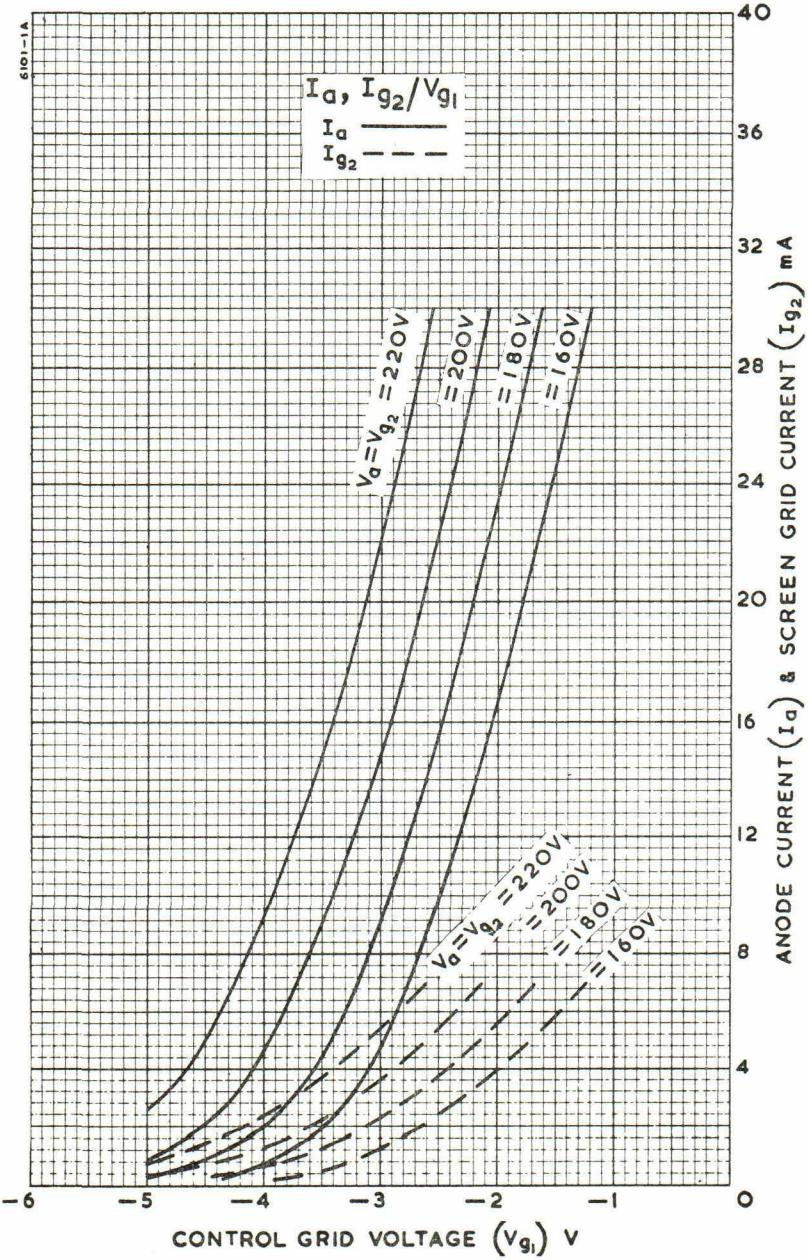
The stage should be designed to allow for valve spread and deterioration during life in addition to component variations. Values of peak anode current available for a new average valve and at the assumed end of life point for any valve are as follows:

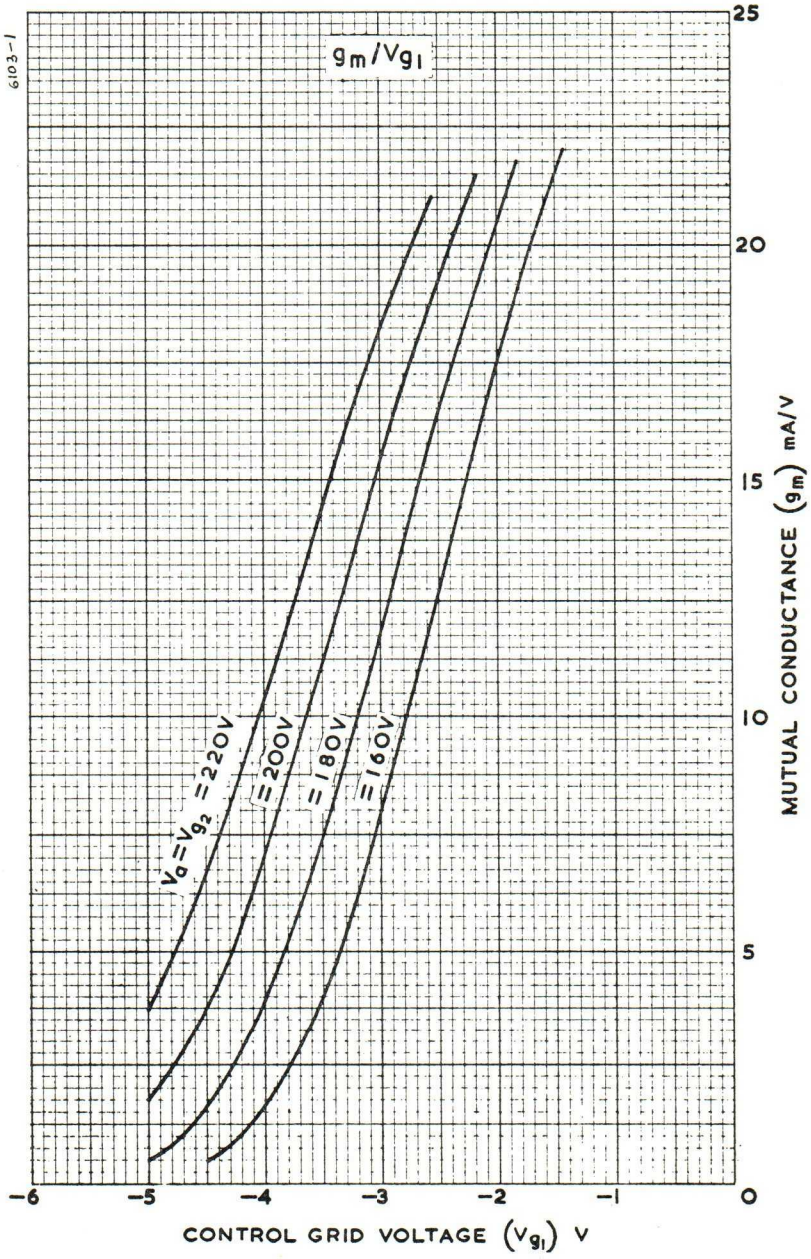
		ϕ	‖	
Anode Voltage	V_a	70	60	V
Screen Grid Voltage	V_{g_2}	180	180	V
Grid Bias Voltage	V_{g_1}	−1	−1	V
Anode Current	I_a	40	25	mA

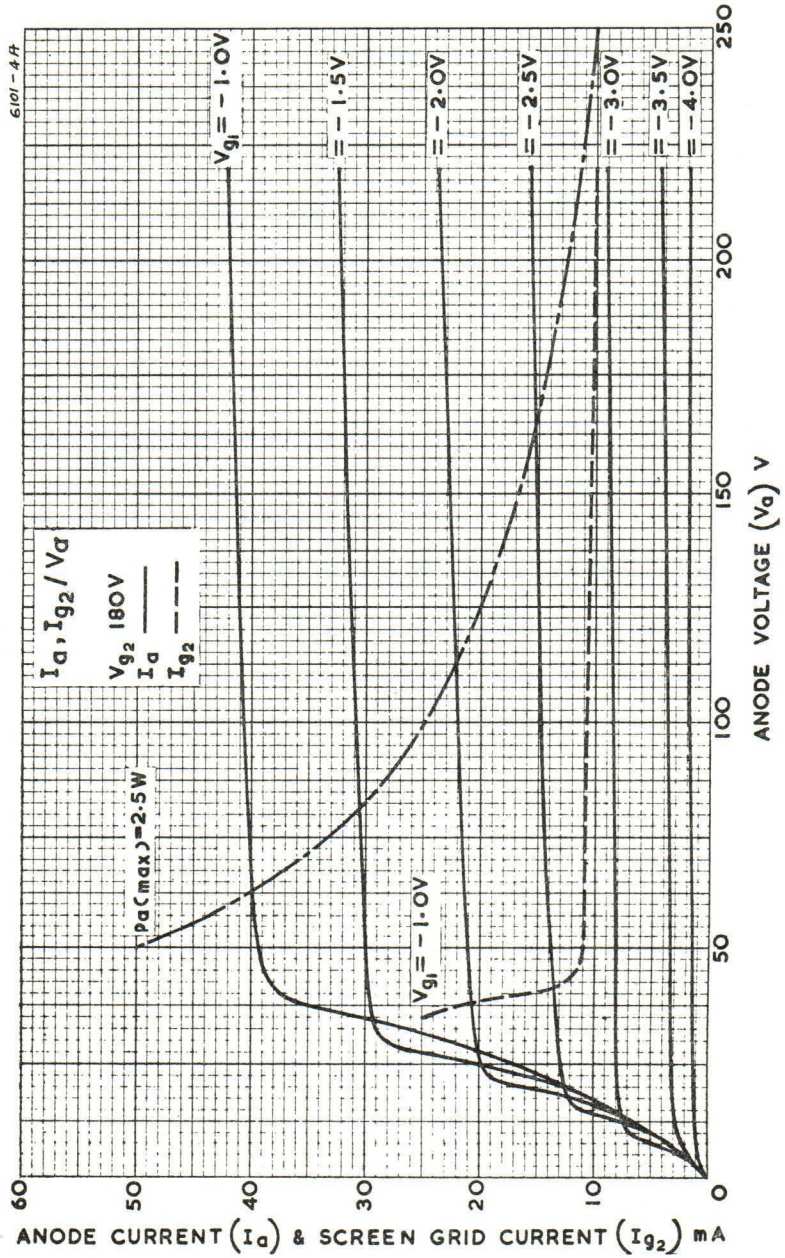
ϕ Average New Valve.
‖ Assumed End of Life Condition.

MOUNTING POSITION—Unrestricted

THORN—A E I RADIO VALVES & TUBES LTD.


6101-1A
I_a, I_{g_2}/V_{g_1}
I_a
I_{g_2}
$V_a=V_{g_2}=220V$
$=200V$
$=180V$
$=160V$
40
36
32
28
24
20
16
12
8
4
0
ANODE CURRENT (I_a) & SCREEN GRID CURRENT (I_{g_2}) mA
−6
−5
−4
−3
−2
−1
CONTROL GRID VOLTAGE (V_{g_1}) V


6103-1
g_m/V_{g1}
$V_a=V_{g2}=220V$
$=200V$
$=180V$
$=160V$
25
20
15
10
5
0
MUTUAL CONDUCTANCE (g_m) mA/V
−6
−5
−4
−3
−2
−1
CONTROL GRID VOLTAGE (V_{g1}) V


6101-4A
Ia, Ig2 / Va
Vg2 180V
Ia
Ig2
Vg1 = -1.0V
= -1.5V
= -2.0V
= -2.5V
= -3.0V
= -3.5V
= -4.0V
Pa(max)=2.5W
Vg1 = -1.0V
ANODE VOLTAGE (Va) V
250
200
150
100
50
0
60
50
40
30
20
10
0
ANODE CURRENT (Ia) & SCREEN GRID CURRENT (Ig2) mA