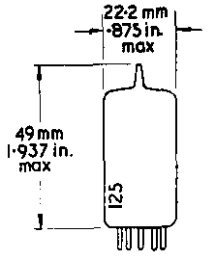
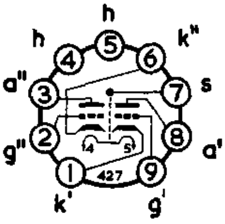
ECC807

CURRENT EQUIPMENT TYPE



BRIMAR

A.F.
DOUBLE
TRIODE



B9A Base

GENERAL

This valve is a double triode specifically designed for use in high gain pre-amplifier stages operating from low level inputs.

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

RATINGS (Each Section)

Maximum Anode Dissipation	$p_{a(max)}$	1·0	W
Maximum Anode Voltage ($I_a = 0$)	$V_{a(b)max}$	550	V
Maximum Anode Voltage	$V_{a(max)}$	300	V
Maximum Negative Grid Voltage	$-V_{g(max)}$	50	V
Maximum Heater to Cathode Voltage	$V_{h\text{-}k(max)}$	150	V
Maximum Cathode Current	$I_{k(max)}$	8·0	mA
Maximum Grid to Cathode Resistance	$R_{g\text{-}k(max)}$		
Fixed Bias		1·0	MΩ
Cathode Bias		2·2	MΩ
Grid Current Bias		22	MΩ

INTER-ELECTRODE CAPACITANCES (Each Section)

Input	c_{in}	2·0	pF
Output	c_{out}	1·35	pF
Anode to Grid	$c_{a\text{-}g}$	2·3	pF

CHARACTERISTICS (Each Section)

Anode Voltage	V_a	250	V
Grid Voltage	V_g	−1·5	V
Anode Current	I_a	1·3	mA
Mutual Conductance	g_m	2·4	mA/V
Amplification Factor	μ	150	
Negative Grid Voltage for $I_g = 0{\cdot}3\mu A$	$-V_{g\,(I_g = 0{\cdot}3\mu A)}$	<1·3	V

TYPICAL OPERATION (Each Section)

Anode Supply Voltage	$V_{a(b)}$	250	250	250	250	V
Anode Load Resistor	R_a	100	100	220	220	kΩ
Cathode Resistor ($C_k = 100\mu F$)	R_k	0	1·0*	0	2·2*	kΩ
Grid Resistor	R_g	8·2†	1·0	15†	1·0	MΩ
Grid Resistor of Following Stage		470	470	470	470	kΩ
Generator Resistance		50	50	100	100	kΩ
Anode Current	I_a	0·91	0·93	0·5	0·5	mA
Input Voltage (R.M.S.)	$V_{in(r.m.s.)}$	100	100	90	100	mV
Output Voltage (R.M.S.)	$V_{out(r.m.s.)}$	7·1	6·9	6·8	6·9	V
Stage Gain		71	69	76	69	
Total Harmonic Distortion	D_{tot}	1·0	2·0	1·5	2·0	%

Notes:

When used in cascade, section 1 should be employed as the input stage, as this section has the lower grid hum level of 3μV r.m.s. average with a maximum of 5μV r.m.s. Measured with a low pass filter (cut-off = 350 c/s).

If either side of the heater is earthed rather than the centre tap, the maximum value of hum would be of the order of 10μV r.m.s.

* ±5%. † ±10%.

ECC807 Equivalent
13D7 (Obsolete)

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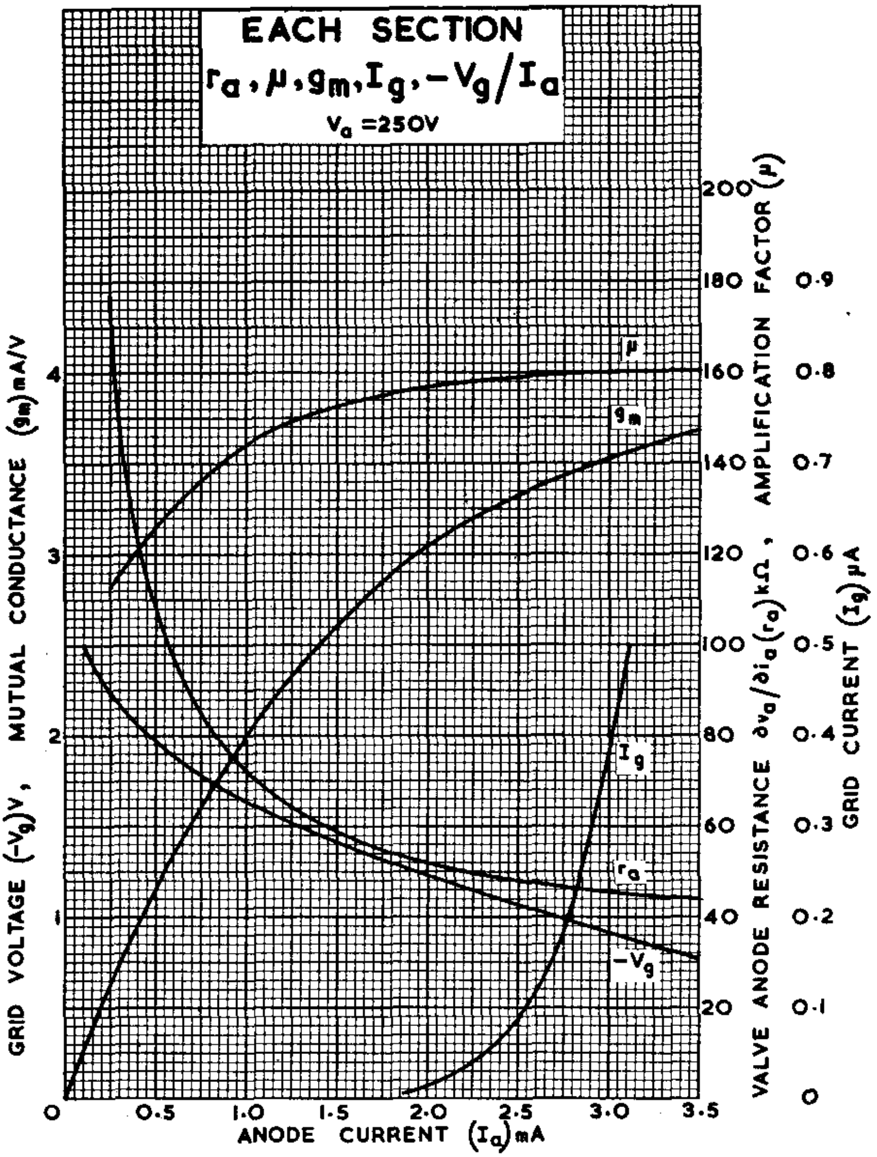
EACH SECTION
$r_a, \mu, g_m, I_g, -V_g / I_a$
V_a =250V
GRID VOLTAGE $(-V_g)$V, MUTUAL CONDUCTANCE (g_m) mA/V
1
2
3
4
ANODE CURRENT (I_a) mA
0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
VALVE ANODE RESISTANCE $\partial v_a/\partial i_a (r_a)$ kΩ, AMPLIFICATION FACTOR (μ)
20
40
60
80
100
120
140
160
180
200
GRID CURRENT (I_g) µA
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
µ
g_m
I_g
r_a
$-V_g$