

DOUBLE DIODE TRIODE

UBC81

High gain triode for use as a.f. voltage amplifier,
combined with twin diodes, for use in equipment
with series connected heaters.

HEATER

Suitable for series operation, a.c. or d.c.

I_h	100	mA
V_h	14	V

MOUNTING POSITION

Any

CAPACITANCES

$C_{a'd-g}$	<0.007	pF
$C_{a''d-g}$	<0.007	pF
$C_{a'd-at}$	<0.005	pF
$C_{a''d-at}$	<0.01	pF

Triode section

C_{g-k}	2.3	pF
C_{a-k}	2.3	pF
C_{a-g}	1.2	pF
C_{g-h}	<0.05	pF

Diode sections

$C_{a'd-k}$	0.9	pF
$C_{a''d-k}$	0.9	pF
$C_{a'd-a''d}$	<0.2	pF
$C_{a'd-h}$	<0.25	pF
$C_{a''d-h}$	<0.25	pF

CHARACTERISTICS

V_a	100	170	V
V_g	-1.0	-1.6	V
I_a	0.8	1.5	mA
g_m	1.4	1.65	mA/V
μ	70	70	
r_a	50	42	k Ω

OPERATING CONDITIONS AS RESISTANCE COUPLED A.F. AMPLIFIER (with cathode bias)

V_b (V)	R_a (k Ω)	I_a (mA)	R_k (k Ω)	$\frac{V_{out}}{V_{in}}$	$\frac{V_{out}}{(V_{r.m.s.})}$ ($D_{tot}=5\%$)	$\frac{V_{out}}{(V_{r.m.s.})}$ ($D_{tot}=10\%$)	$R_{g1}^\dagger$ (k Ω)
350	100	1.18	2.2	43	30.5	54	330
300	100	1.0	2.2	42.5	25.5	46	330
250	100	0.85	2.2	42	21	38	330
200	100	0.7	2.2	41	16	28.5	330
150	100	0.5	2.2	40	12	19.5	330
100	100	0.28	3.3	33.5	6.0	10.5	330
350	220	0.67	3.9	47.5	34.5	64	680
300	220	0.56	3.9	47	27	54	680
250	220	0.48	3.9	46.5	24.5	44.5	680
200	220	0.4	3.9	46	19	34	680
150	220	0.32	3.9	44	16.5	24	680
100	220	0.18	5.6	38	8.0	13.5	680

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OPERATING CONDITIONS AS RESISTANCE COUPLED A.F. AMPLIFIER* (with grid current bias)

V_b (V)	R_a (k Ω)	I_a (mA)	$\frac{V_{out}}{V_{in}}$	$\frac{V_{out}}{(V_{r.m.s.})}$ ($D_{tot}=2.5\%$)	$\frac{V_{out}}{(V_{r.m.s.})}$ ($D_{tot}=5\%$)	$R_{g1}^\dagger$ (k Ω)
350	100	2.0	55	27	43	330
300	100	1.95	53.5	22	35	330
250	100	1.3	51	17	27	330
200	100	0.95	48.5	12	19	330
150	100	0.6	44	7.0	11	330
100	100	0.3	35.5	3.0	5.0	330
350	220	1.1	61.5	29	47	680
300	220	0.9	59.5	23	38	680
250	220	0.7	57	17	29.5	680
200	220	0.5	54	12.5	21	680
150	220	0.33	49	8.0	14	680
100	220	0.18	40	4.0	7.0	680

*Measured with grid resistor of 20M Ω and signal source impedance $Z_s = 0$. The distortion figures quoted hold good for values of Z_s not exceeding 200k Ω . At this value of Z_s the gain will be reduced by 10%.

$^\dagger R_{g1}$ = Grid resistor of following valve.

LIMITING VALUES

Triode section

$V_{a(b)}$ max.	550	V
V_a max.	250	V
p_a max.	500	mW
I_k max.	5.0	mA
V_g max. ($I_g = +0.3\mu A$)	-1.3	V
R_{g-k} max. (cathode bias)	3.0	M Ω
R_{g-k} max. (grid current biasing)	22	M Ω
V_{h-k} max.	100	V
R_{h-k} max.	20	k Ω

Diode sections (each section)

$V_{ad(pk)}$ max.	200	V
I_{ad} max.	800	μA
$I_{ad(pk)}$ max.	5.0	mA

MICROPHONY

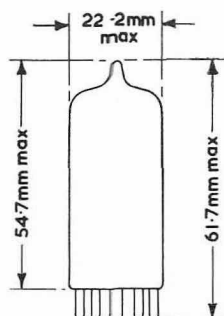
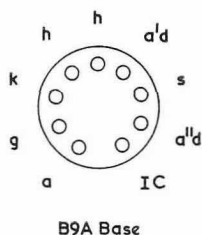
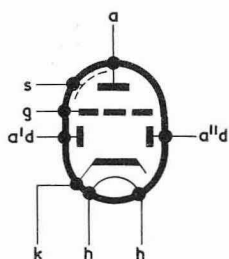
This valve can be used without special precautions against microphony in circuits in which the input voltage is $>10mV$ (r.m.s.) for an output of 50mW from the output valve.

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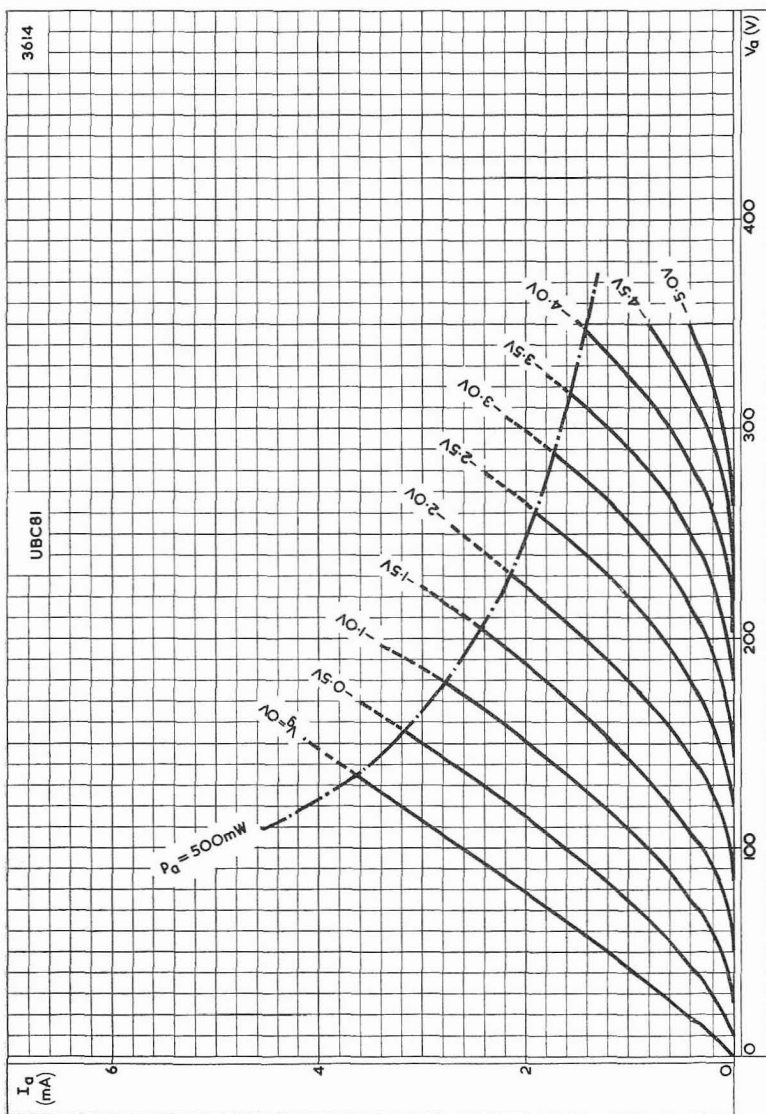


Pin 4 should be connected to the earthed side of the heater circuit

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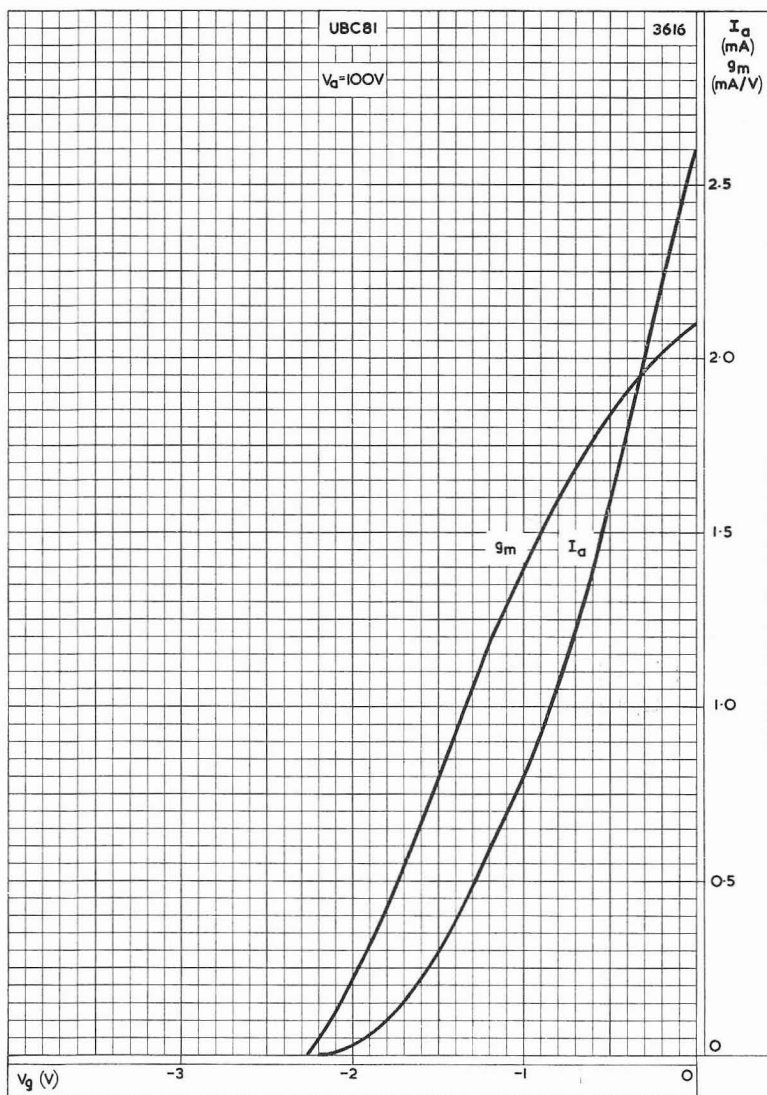
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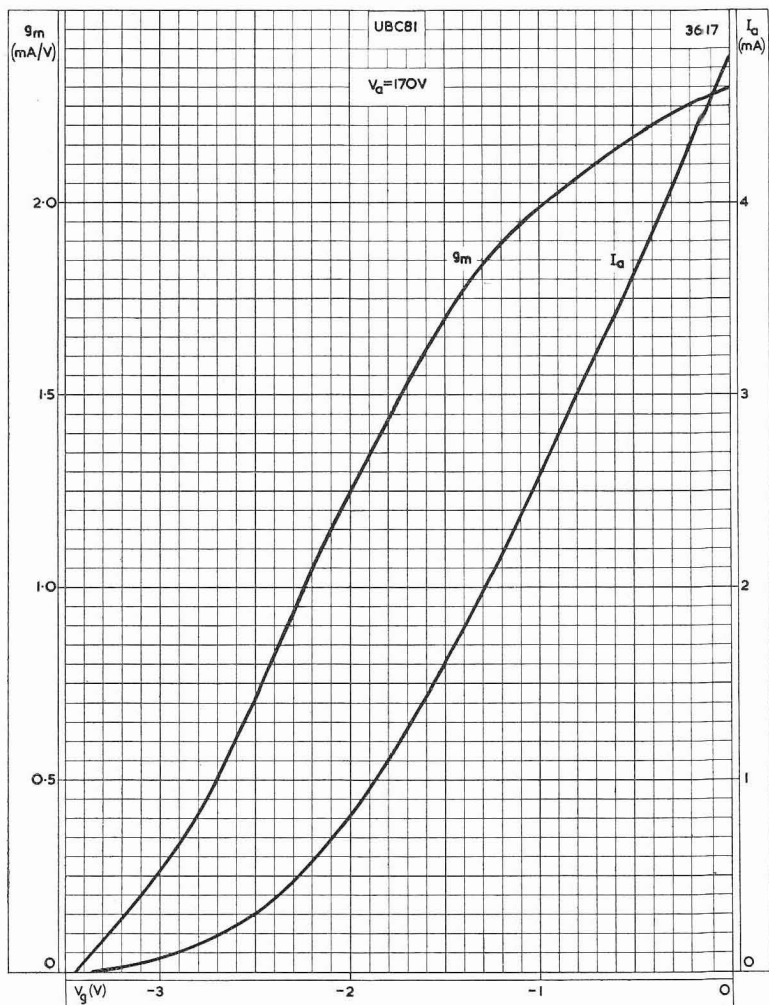


ANODE CURRENT AND MUTUAL CONDUCTANCE PLOTTED AGAINST
GRID VOLTAGE. $V_a = 100V$

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ANODE CURRENT AND MUTUAL CONDUCTANCE PLOTTED AGAINST GRID VOLTAGE. $V_a = 170V$