A.F. DOUBLE TRIODE

Double triode intended for use as A.F. amplifier, phase inverter or output tube.

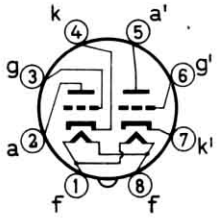
QUICK REFERENCE DATA (Each unit)			
Anode current	I_a	6	mA
Transconductance	S	2.9	mA/V
Amplification factor	μ	32	–

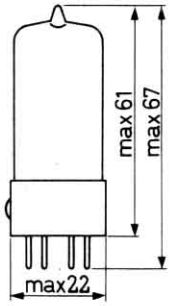
HEATING: Indirect by A.C. or D.C.; parallel supply

Heater voltage	V_f	6.3 V
Heater current	I_f	0.6 A

DIMENSIONS AND CONNECTIONS Dimensions in mm

Base: Rimlock





TYPICAL CHARACTERISTICS

Anode voltage	V_a	250	V
Anode current	I_a	6	mA
Grid voltage	V_g	-5.6	V
Transconductance	S	2.9	mA/V
Amplification factor	μ	32	–
Internal resistance	R_i	11	kΩ

7Z2 6996

OPERATING CHARACTERISTICS as class A output amplifier (one unit)

Anode voltage	V_a	250	V
Anode current	I_a	6	mA
Grid voltage	V_g	-5.6	V
Load resistance	$R_{a\sim}$	15	kΩ
Input voltage	V_i	3.9	V_{RMS}
Output power	W_o	280	mW
Total distortion	d_{tot}	8.5	%

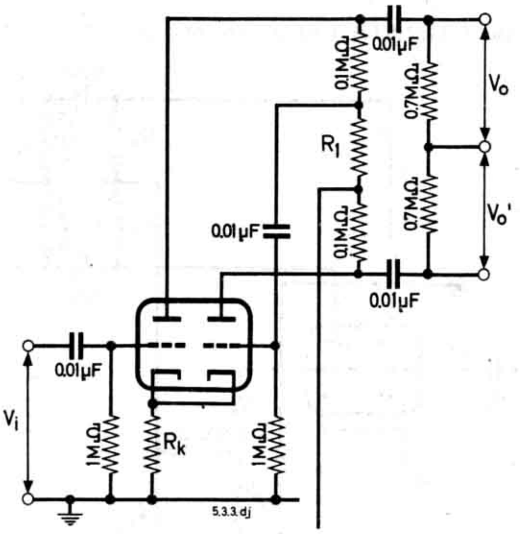
OPERATING CHARACTERISTICS as class A output amplifier (two units in push-pull)

Anode voltage	V_a	250		V
Cathode resistor	R_k	560		Ω
Load resistance	$R_{aa\sim}$	30		kΩ
Input voltage	V_i	0	4.1	V_{RMS}
Anode current	I_a	2x5.2	2x5.6	mA
Output power	W_o	0	520	mW
Total distortion	d_{tot}	-	1.0	%

7Z2 6997

OPERATING CHARACTERISTICS as phase inverter

Supply voltage	V_b	350	250	V
Resistor R_1	R_1	3.8	3.9	kΩ
Cathode resistor	R_k	750	1000	Ω
Total current	I_{tot}	4.3	3.0	mA
Voltage gain	V_o/V_i	27.5	26	
Output voltage	V_o=V_o'	30	30	V_{RMS}
Total distortion 1st unit	d_{tot}	1.1	1.5	%
2nd unit	d'_{tot}	0.3	0.5	%

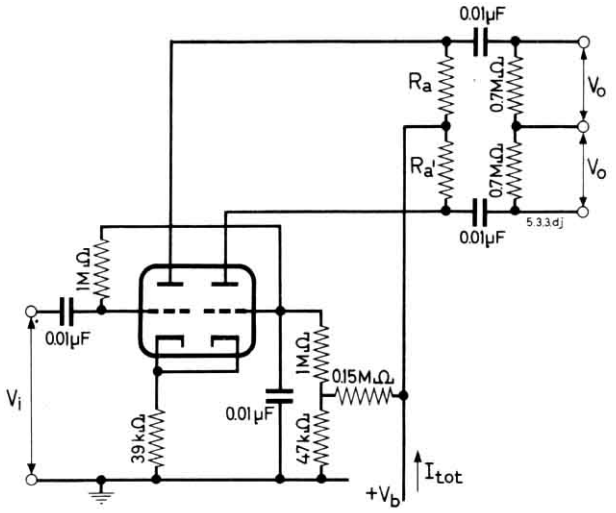


7Z2 6998

OPERATING CHARACTERISTICS as A.F. amplifier (one unit)

Supply voltage	V_b	400	350	300	250	200	V
Anode resistor	R_a	100	100	100	100	100	kΩ
Grid resistor	R_g	1	1	1	1	1	MΩ
Grid resistor next stage	R_g'	0.33	0.33	0.33	0.33	0.33	MΩ
Cathode resistor	R_k	2.2	2.2	2.2	2.2	2.2	kΩ
Anode current	I_a	2.2	1.9	1.6	1.4	1.1	mA
Voltage gain	V_o/V_i	24	24	24	24	24	–
Output voltage, max.	$V_{o\,max}$	76	65	54	44	33	V_{RMS}
Total distortion	d_{tot}	3.9	3.9	3.8	3.7	3.6	%

OPERATING CHARACTERISTICS as phase inverter



Supply voltage	V_b	250	350	V
Anode resistor	R_a	0.11	0.11	MΩ
	R_a'	0.12	0.12	MΩ
Total current	I_{tot}	3.0	4.5	mA
Voltage gain	V_o/V_i	11.5	12	–
Output voltage	V_o	30	30	V_{RMS}
Total distortion	d_{tot}	0.6	0.4	%

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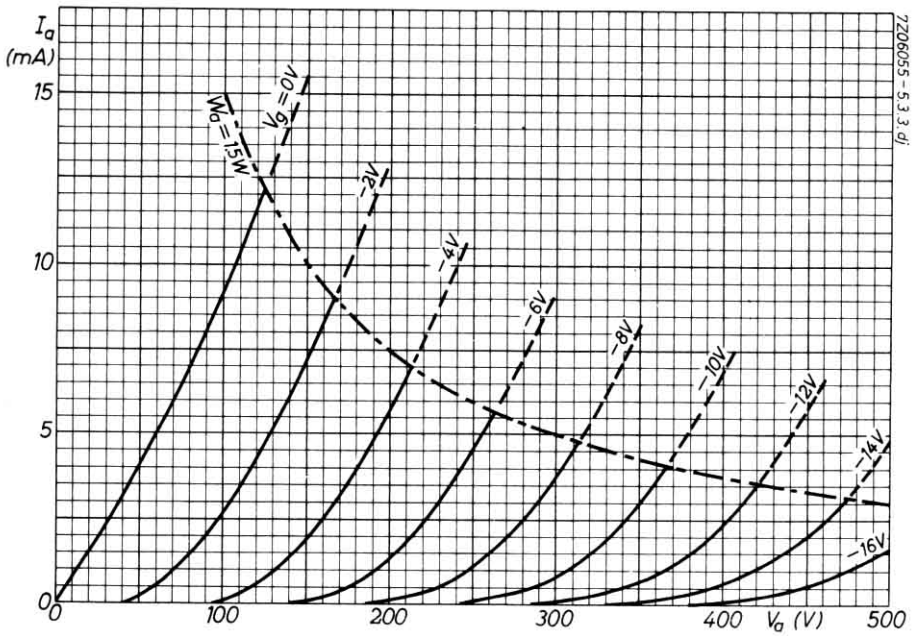
LIMITING VALUES (Design centre rating system) (each unit)

Anode voltage	V_{a_o}	max.	550	V
	V_a	max.	300	V
Anode dissipation	W_a	max.	1.5	W
Grid dissipation	W_g	max.	0.1	W
Grid resistor	R_g	max.	1	MΩ
Cathode current	I_k	max.	10	mA
Cathode to heater voltage				
cathode positive	V_{kf}	max.	175	V
cathode negative	V_{kf}	max.	100	V
Cathode to heater circuit resistance	R_{kf}	max.	0.15	MΩ
Bulb temperature	t_{bulb}	max.	120	°C


I_a
(mA)
15
10
5
0
0
100
200
300
400
V_a (V)
500
$W_a = 15W$
$V_g = 0V$
−2V
−4V
−6V
−8V
−10V
−12V
−14V
−16V
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