

A.F. DOUBLE TRIODE

Double triode intended for use as A.F. amplifier.

QUICK REFERENCE DATA (each unit)			
Anode current	I_a	10.5	mA
Transconductance	S	2.2	mA/V
Amplification factor	μ	17	-

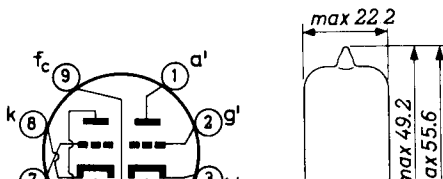
HEATING: Indirect by A.C. or D.C.; series or parallel supply

Heater voltage	V_f	6.3	12.6	V
Heater current	I_f	300	150	mA
		pins 9-(4+5)	pins 4-5	

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Noval



CAPACITANCES

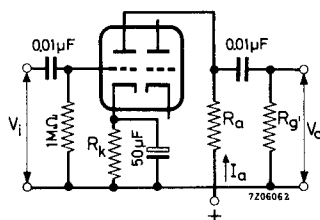
Grid to all except anode	$C_{g(a)}$	1.8	pF
	$C_{g'(a')}$	1.8	pF
Anode to all except grid	$C_{a(g)}$	0.37	pF
	$C_{a'(g')}$	0.25	pF
Anode to grid	C_{ag}	1.5	pF
	$C_{a'g'}$	1.5	pF
Grid to heater	C_{gf}	max. 0.135	pF
	$C_{g'f}$	max. 0.135	pF
Anode to anode	$C_{aa'}$	max. 1.1	pF
Anode to grid other unit	$C_{ag'}$	max. 0.11	pF
Grid to anode other unit	$C_{ga'}$	max. 0.06	pF
Grid to grid	$C_{gg'}$	max. 0.010	pF

TYPICAL CHARACTERISTICS

Anode voltage	V_a	100	250	V
Grid voltage	V_g	0	-8.5	V
Anode current	I_a	11.8	10.5	mA
Transconductance	S	3.1	2.2	mA/V
Amplification factor	μ	19.5	17	-
Internal resistance	R_i	6.25	7.7	k Ω

OPERATING CHARACTERISTICS

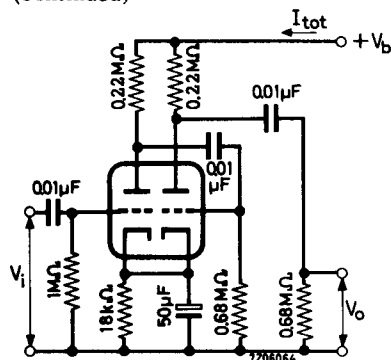
As A.F. amplifier, one unit



Supply voltage	V_b	100	150	200	250	300	350	400	V
Anode resistor	R_a	47	47	47	47	47	47	47	kΩ
Grid resistor next stage	$R_{g'}$	150	150	150	150	150	150	150	kΩ
Cathode resistor	R_k	1.2	1.2	1.2	1.2	1.2	1.2	1.2	kΩ

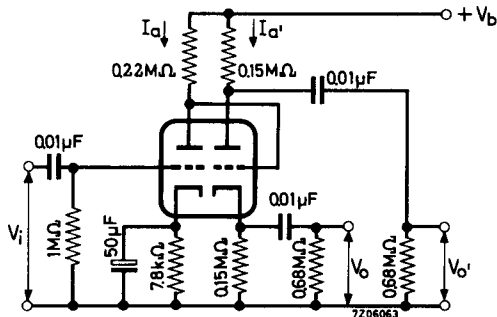
OPERATING CHARACTERISTICS (continued)

Two sections in cascade



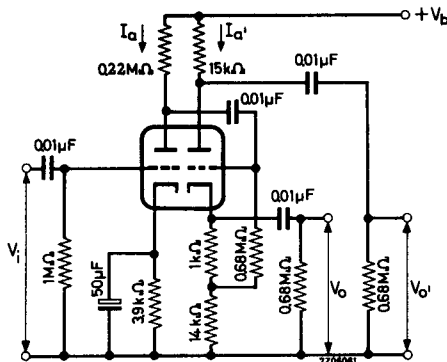
Supply voltage	V_b	250	350	V
Total current	I_{tot}	1.66	2.33	mA
Voltage gain	V_o/V_i	178	178	-
Output voltage ($I_g = 0.3 \mu A$)	V_o	15	25	V_{RMS}
Total distortion	d_{tot}	2	2	%

As phase inverter



Supply voltage	V_b	250	350	V
Anode current	I_a	0.70	1.00	mA
Anode current	$I_{a'}$	0.68	0.93	mA
Voltage gain	V_o/V_i	11	11	-
Output voltage ($I_g = 0.3 \mu A$)	V_o	15	24	V_{RMS}
Total distortion	d_{tot}	1	1	%

OPERATING CHARACTERISTICS (continued)



Supply voltage	V_b	250	350	V
Anode current	I_a	0.82	1.16	mA
Anode current	$I_{a'}$	4.5	6.3	mA
Voltage gain	V_o/V_i	11	11	-
Output voltage ($I_g = 0.3 \mu A$)	V_o	13	20	V_{RMS}
Total distortion	d_{tot}	1.5	1.5	%

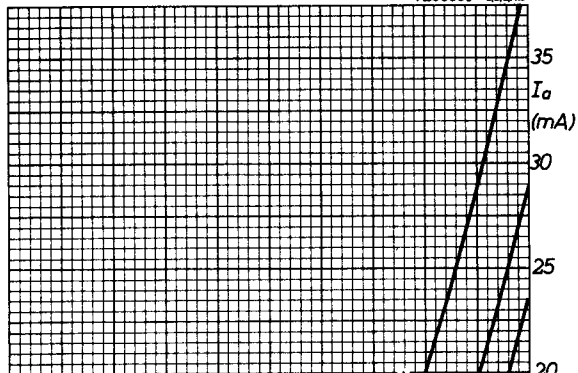
LIMITING VALUES (Design centre rating system) (each unit)

Anode voltage	V_{a0}	max.	550	V
	V_a	max.	300	V
Anode dissipation	W_a	max.	2.75	W
Cathode current	I_k	max.	20	mA
Grid voltage , peak	$-V_g$	max.	100	V
	$-V_{gp}$	max.	250	V
Grid resistor (automatic bias)	R_g	max.	1	$M\Omega$
Cathode to heater voltage	V_{kf}	max.	180	V
Cathode to heater circuit resistance in phase splitting circuits	R_{kf}	max.	150	$k\Omega$

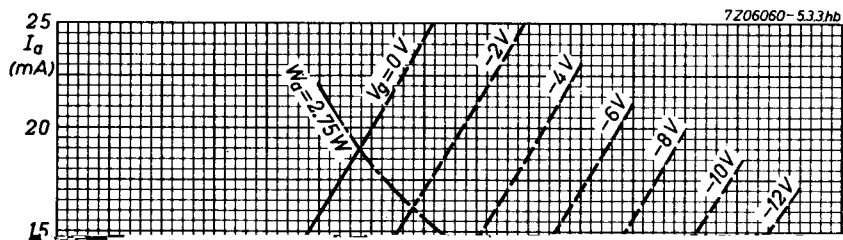
REMARK

This tube can be used without precautions against microphony in equipment in which $V_i \geq 10$ mV for an output of 50 mW of the output tube (or $V_i \geq 100$ mV for 5 W output) provided that the average acceleration of the tube is not greater than indicated in the section "Microphonic effect" of the "Application Directions". When the centre tap of the heater transformer has been earthed, $R_g \leq 0.3 \text{ M}\Omega$ and R_k is sufficiently decoupled, the disturbance level for hum and noise will then be better than 60 dB below 100 mV.

7206059-533hb



ECC82



PHILIPS

Data handbook



**Electronic
components
and materials**

ECC82

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