OUTPUT PENTODE

EL86

Low impedance output pentode suitable for use in single-ended push-pull output stages and series regulators.

HEATER

V_h	6.3	V
I_h	760	mA

CAPACITANCES (measured without an external shield)

c_{in}	13	pF
c_{out}	6.8	pF
c_{a-g1}	<600	mpF
c_{h-g1}	<250	mpF

CHARACTERISTICS

Pentode connection

V_a	100	170	V
V_{g2}	100	170	V
V_{g1}	−5.0	−12.5	V
I_a	57	70	mA
I_{g2}	3	3.5	mA
g_m	13	11	mA/V
μ_{g1-g2}	9	8	
r_a	23	26	kΩ
V_{g1} max.		−1.3	V

Triode connection (g_2 connected to a)

V_a	100	170	V
V_{g1}	−5.0	−12.5	V
I_a	60	74	mA
g_m	14	12	mA/V
μ	9	8	
r_a	645	665	Ω

OPERATING CONDITIONS AS SINGLE VALVE CLASS 'A' AMPLIFIER

$V_{a(b)}$	200	V
$V_{g2(b)}$	200	V
R_k	215	Ω
R_a	2.5	kΩ
R_{g2} (unbypassed)	470	Ω
I_a	64	mA
$I_{g2(o)}$	3.2	mA
$V_{in(r.m.s.)}$ (P_{out} = 50mW)	520	mV
$V_{in(r.m.s.)}$	7.0	V
P_{out}	5.3	W
D_{tot}	10	%
I_{g2} (max. sig.)	11.4	mA

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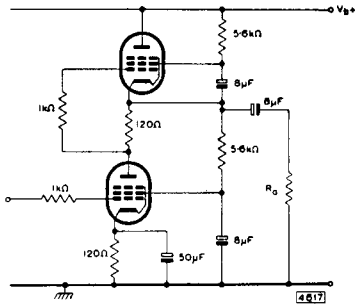
OUTPUT PENTODE

OPERATING CONDITIONS FOR TWO VALVES IN SINGLE ENDED PUSH-PULL



V_b	300	V
R_a	1.0	kΩ
$I_{b(o)}$	66	mA
I_b (max. sig.)	64	mA
$V_{in(r.m.s.)}$	5.4	V
P_{out}	4.5	W
D_{tot}	9.3	%

OPERATING CONDITIONS FOR TWO VALVES IN CLASS 'AB' PUSH-PULL

Speech and music

V_{a-k}	250	V
V_{g2-k}	200	V
R_k (per valve)	300	Ω
R_{a-a}	5.5	kΩ
$I_{a(o)}$	2×50	mA
I_a (max. sig.)	2×55	mA
$I_{g2(o)}$	2×2.0	mA
I_{g2} (max. sig.)	2×13	mA
$V_{in(g1-g1)r.m.s.}$	26	V
P_{out}	18.5	W
D_{tot}	4.5	%

Continuous sine wave drive

V_{a-e}	190	220	250	V
$V_{g2(b)}$	190	220	250	V
R_k (per valve)	220	270	390	Ω
R_{g2} (common)	330	1000	1800	Ω
$I_{a(o)}$	2×61	2×59	2×51	mA
$I_{g2(o)}$	2×2.8	2×2.7	2×2.4	mA
R_{a-a}	2.6	3.0	3.5	kΩ
P_{out}	13.3	15.7	17.4	W
$V_{in(g1-g1)r.m.s.}$	24	29	39	V
D_{tot}	2.3	3.3	4.2	%
I_a (max. sig.)	2×69	2×69	2×64	mA
I_{g2} (max. sig.)	2×10	2×9.7	2×8.7	mA
$V_{in(g1-g1)r.m.s.}$ (P_{out} = 50mW)	930	920	960	mV

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LIMITING VALUES

$V_{a(b)}$ max.	550	V
V_a max.	250	V
V_{a+g2} max.	250	V
p_a max.	12	W
p_{a+g2} max.	13	W
$V_{g2(b)}$ max.	550	V
V_{g2} max.	250	V
p_{g2} max.	1.75	W
I_k max.	100	mA
R_{g1-k} max.	500	kΩ
V_{h-k} max.	200	V
R_{h-k} max.	20	kΩ

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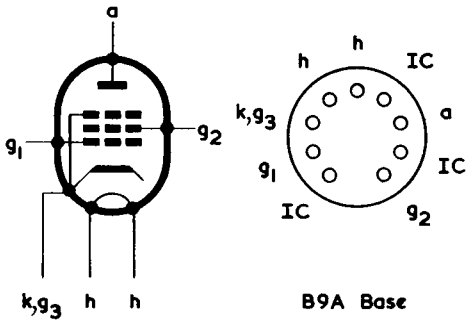

B9A Base