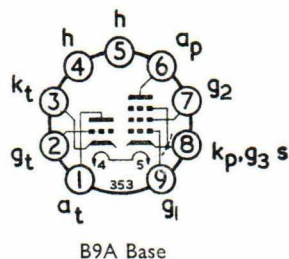


TRIODE FIELD OUTPUT PENTODES



GENERAL

Combined triode pentode with separate cathodes for use as a field oscillator and field output valve in television receivers. Data is applicable to both types.

Heater Current	I_h	0.3	A
Heater Voltage	V_h	17.5	V

RATINGS

		Triode	Pentode	
Maximum Anode Dissipation	$P_a(\max)$	0.5	8.0*	W
Maximum Screen Grid Dissipation	$P_{g_2}(\max)$	—	1.5†	W
Maximum Anode Supply Voltage	$V_{a(b)\max}$	550	550	V
Maximum Anode Voltage	$V_a(\max)$	300	300	V
Maximum Peak Anode Voltage	$V_a(pk)\max$	—	2.0‡	kV
Maximum Screen Grid Supply Voltage	$V_{g_2(b)\max}$	—	550	V
Maximum Screen Grid Voltage	$V_{g_2}(\max)$	—	250	V
Maximum Heater to Cathode Voltage	$V_{h-k}(\max)$	200§	200	V
Maximum Cathode Current	$I_k(\max)$	15	75	mA
Maximum Peak Cathode Current	$i_k(pk)\max$	150	—	mA
Maximum Peak Cathode Current	$i_k(pk)\max$	100¶	—	mA
Maximum Grid 1 to Cathode Resistance	$R_{g_1-k}(\max)$			
Fixed Bias		1.0	1.0	MΩ
Self Bias		3.3	2.2	MΩ

* For a nominal tube at the worst probable operating conditions and at normal picture height p_a should not exceed 10.5 W.

† For a nominal tube at the worst probable operating conditions and at normal picture height p_{g_2} should not exceed 2.0 W.

‡ Maximum pulse duration 5% of one cycle with a maximum of 1.0 ms.

§ During warming up the maximum d.c. component is 315 V, heater negative.

|| Maximum pulse duration 2% of one cycle with a maximum of 400 μ s.

¶ Maximum pulse duration 4% of one cycle with a maximum of 800 μ s.

INTER-ELECTRODE CAPACITANCES

Anode Pentode to Grid Triode	C_{ap-gt}		<0.03	pF
Anode Triode to Grid 1	C_{at-g_1}		<0.08	pF
		Triode	Pentode	
Anode to Grid 1	C_{a-g_1}	—	<0.6	pF
Grid 1 to Heater	C_{g_1-h}	<0.15	<0.2	pF

CHARACTERISTICS

Triode Section

Anode Voltage	V_a	100	100	V
Control Grid Voltage	V_g	-0.85	0	V
Anode Current	I_a	5.0	10.5	mA
Mutual Conductance	g_m	5.5	7.0	mA/V
Valve Anode Resistance ($\delta V_a / \delta I_a$)	r_a	11	9.0	k Ω
Amplification Factor	μ	60	63	

Pentode Section—Field Output Application

Anode Voltage	V_a	50	65	V
Screen Grid Voltage	V_{g2}	170	210	V
Control Grid Voltage	V_{g1}	-1.0	-1.0	V
Peak Anode Current	$i_{a(pk)}$	200	285	mA
Peak Screen Grid Current	$i_{g2(pk)}$	35	45	mA

CIRCUIT DESIGN

Note.—The curves on page 7 can be used to derive the minimum I_a to be expected as a result of the spread of valve characteristics, valve deterioration during life and decrease of the mains voltage to 10% below the nominal value by decreasing by 40% the I_a values on the curve A-B at the V_{g2} occurring at the decreased mains voltage.

In order that the maximum permissible value of screen grid dissipation is not exceeded, the circuit should be designed in such a way that the anode voltage should never be lower than the value determined by curve A-B at the relevant V_{g2} value.

HUM

The equivalent pentode grid hum voltage without negative feedback is ≤ 10 mV when

$$\begin{aligned} Z_{g1} \text{ (f = 50 Hz)} &\leq 500 \text{ k}\Omega \\ C_{g1-h} &= 0.2 \text{ pF} \\ V_{h-k} \text{ (r.m.s.)} &= 150 \text{ V} \end{aligned}$$

MOUNTING POSITION—Unrestricted

