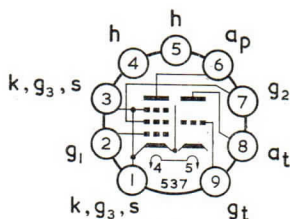


V.H.F. TRIODE PENTODE



B9A Base

GENERAL

This combined triode and high slope frame grid pentode is for use as a frequency changer at frequencies up to 220 Mc/s in television tuners.

Heater Current	I_h	0.3 A
Heater Voltage	V_h	8.0 V

RATINGS

	Pentode	Triode	
Maximum Anode Dissipation	$P_a(\text{max})$	2.0	1.5 W
Maximum Screen Grid Dissipation	$P_{g2}(\text{max})$	0.5	— W
Maximum Anode Voltage	$V_a(\text{max})$	250	125 V
Maximum Screen Grid Voltage	$V_{g2}(\text{max})$	150	— V
Maximum Heater to Cathode Voltage	$V_{h-k}(\text{max})$	100*	100* V
Maximum Cathode Current	$I_k(\text{max})$	18	15 mA
Maximum Grid to Cathode Resistance	$R_{g1-k}(\text{max})$	250	500 kΩ

* To fulfil hum requirements on A.M. sound, it will be necessary for V_{h-k} to be less than 50 V r.m.s.

INTER-ELECTRODE CAPACITANCES†

Input Pentode	$C_{in}(p)$	6.0	pF
Output Pentode	$C_{out}(p)$	3.3	pF
Grid 1 to Anode Pentode	C_{g1-ap}	0.012	pF
Grid 1 to Grid 2	C_{g1-g2}	1.6	pF
Grid Triode to Anode Triode	C_{gt-at}	2.0	pF
Grid Triode to Cathode and Heater	$C_{gt-k,h}$	2.2	pF
Anode Triode to Cathode and Heater	$C_{at-k,h}$	1.2	pF
Anode Pentode to Anode Triode	C_{ap-at}	<0.03	pF
Anode Pentode to Grid Triode	C_{ap-gt}	<0.01	pF
Grid 1 to Anode Triode	C_{g1-at}	<0.01	pF
Grid 1 to Grid Triode	C_{g1-gt}	<0.01	pF

† Measured without an external shield

CHARACTERISTICS

	Pentode	Triode	
Anode Voltage	V_a	170	100 V
Screen Grid Voltage	V_{g2}	150	— V
Control Grid Voltage	V_{g1}	-1.2	-3.0 V
Anode Current	I_a	10	14 mA
Screen Grid Current	I_{g2}	3.3	— mA
Mutual Conductance	g_m	12	5.5 mA/V
Amplification Factor	μ	—	17
Inner Amplification Factor	μ_{g1-g2}	70	—
Valve Anode Resistance ($\partial V_a / \partial I_a$)	r_a	>350	— kΩ
Equivalent Grid Noise Resistance	R_{eq}	1.0	— kΩ

TYPICAL OPERATION—As a Frequency Changer

Anode Voltage	V_a	190	V
Screen Supply Voltage ($R_{g2} = 18k\Omega$)	$V_{g2(b)}$	190	V
Control Grid Resistance	R_{g1}	100	$k\Omega$
Heterodyne Voltage (R.M.S.)	$V_{het(r.m.s.)}$	2.3	V
Anode Current	I_a	8.5	mA
Screen Grid Current	I_{g2}	2.7	mA
Conversion Conductance	g_c	4.5	mA/V

MOUNTING POSITION:—Unrestricted

For characteristic curves see PCF86