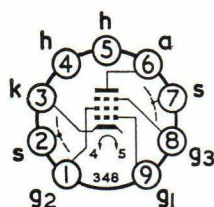


LOW NOISE PENTODE



B9A Base

GENERAL

This low noise pentode is particularly suitable for use in the early stages of high gain audio amplifiers, microphone pre-amplifiers and tape recorders.

Heater Voltage	V_h 6.3	V
Heater Current	I_h 0.2	A

RATINGS

Maximum Anode Dissipation	$P_a(\text{max})$	1.0	W
Maximum Screen Grid Dissipation	$P_{g2}(\text{max})$	0.2	W
Maximum Anode Supply Voltage	$V_{a(b)\text{max}}$	550	V
Maximum Anode Voltage	$V_a(\text{max})$	300	V
Maximum Screen Grid Supply Voltage	$V_{g2(b)\text{max}}$	550	V
Maximum Screen Grid Voltage	$V_{g2}(\text{max})$	200	V
Maximum Heater to Cathode Voltage	$V_{h-k}(\text{max})$		
Heater Negative		100	V
Heater Positive		50	V
Maximum Cathode Current	$I_k(\text{max})$	6.0	mA
Maximum Control Grid to Cathode Resistance	$R_{g1-k}(\text{max})$		
$P_a > 200 \text{ mW}$		3.0	MΩ
$P_a < 200 \text{ mW}$		10	MΩ

INTER-ELECTRODE CAPACITANCES*

Input	C_{in}	3.8	pF
Output	C_{out}	5.1	pF
Anode to Grid 1	C_{a-g1}	<0.05	pF
Grid 1 to Heater	C_{g1-h}	<0.0025	pF

* Measured without an external shield.

CHARACTERISTICS

Anode Voltage	V_a	250	V
Screen Grid Voltage	V_{g2}	140	V
Control Grid Voltage	V_{g1}	-2.2	V
Anode Current	I_a	3.0	mA
Screen Grid Current	I_{g2}	0.6	mA
Valve Anode Resistance ($\delta V_a / \delta I_a$)	r_a	2.5	MΩ
Mutual Conductance	g_m	2.2	mA/V
Inner Amplification Factor	μ_{g1-g2}	38	

TYPICAL OPERATION—As an R.C. coupled A.F. Amplifier

Anode Supply Voltage	$V_{a(b)}$	200	250	300	400	V
Screen Grid Supply Voltage	$V_{g2(b)}$	200	250	300	400	V
Anode Load Resistance	R_a	220	220	220	220	kΩ
Series Screen Grid Resistance	R_{g2}	1.0	1.0	1.0	1.0	MΩ
Cathode Bias Resistance	R_k	2.2	2.2	2.2	2.2	kΩ
Grid Resistor of following stage		680	680	680	680	kΩ
R.M.S. Output Voltage at $D_{tot} \approx 5\%$	$V_{out(r.m.s.)}$	35	44	53	72	V
Voltage Gain		173	185	194	210	
Cathode Current	I_k	0.75	0.9	1.1	1.45	mA

