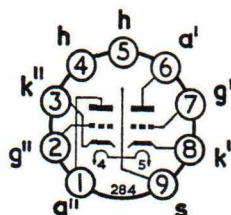


R.F. DOUBLE TRIODE



B9A Base

GENERAL

This double triode is primarily designed for use in television receivers as an oscillator and mixer at frequencies up to 200 MHz.

Heater Current	I_h	0.3	A
Heater Voltage	V_h	9.0	V

DESIGN CENTRE RATINGS (Each Section)

Maximum Anode Dissipation	$P_a(\max)$	2.5	W
Maximum Total Anode Dissipation	$P_a(\text{tot})\max$	4.5	W
Maximum Anode Supply Voltage	$V_{a(b)}\max$	550	V
Maximum Anode Voltage	$V_a(\max)$	250	V
Maximum Negative Grid Voltage	$-V_{g(\max)}$	100	V
Maximum Heater to Cathode Voltage*	$V_{h-k}(\max)$	90	V
Maximum Cathode Current	$I_{k(\max)}$	15	mA
Maximum Grid to Cathode Resistance	$R_{g-k}(\max)$	1.0	MΩ
Maximum Heater to Cathode Resistance	$R_{h-k}(\max)$	20	kΩ

* When operating as an oscillator no r.f. voltage should be applied between heater and cathode.

INTER-ELECTRODE CAPACITANCES

Anode to Grid (each section)	C_{a-g}	1.5	pF
Grid to Cathode, Heater, Shield (each section)	$C_{g-k+h+s}$	3.1	pF
Anode to Cathode (each section)	C_{a-k}	0.18	pF
Anode to Cathode, Heater, Shield (each section)	$C_{a-k+h+s}$		
Unshielded		1.2	pF
Shielded		1.8	pF
Anode' to Anode''	$C_{a'-a''}$		
Unshielded		<0.04	pF
Shielded		<0.008	pF
Grid' to Grid''	$C_{g'-g''}$	<0.003	pF
Anode' to Grid''	$C_{a'-g''}$	<0.008	pF
Anode'' to Grid'	$C_{a''-g'}$	<0.008	pF
Anode' to Cathode''	$C_{a'-k''}$	<0.008	pF
Anode'' to Cathode'	$C_{a''-k'}$	<0.008	pF
Grid' to Cathode''	$C_{g'-k''}$	<0.003	pF
Grid'' to Cathode'	$C_{g''-k'}$	<0.003	pF

TYPICAL CHARACTERISTICS (Each Section)

Anode Voltage	V_a	100	170	200	V
Grid Voltage	V_g	-1.2*	-1.75	-2.4	V
Anode Current	I_a	4.5	10	10	mA
Mutual Conductance	g_m	4.8	6.7	6.0	mA/V
Amplification Factor	μ	46	48	46	
Valve Anode Resistance ($\delta V_a / \delta I_a$)	r_a	9.6	7.1	7.7	k Ω

* Grid current may occur, if this is not permissible use a condition with $V_g = -1.5$ V.

TYPICAL OPERATION

As Self-oscillating Additive Mixer

Anode Supply Voltage	$V_{a(b)}$	100	170	200	V
Anode Load Resistance	R_a	4.7	4.7	8.2	k Ω
Grid Resistance	R_g	1.0	1.0	1.0	M Ω
Oscillator Voltage	$V_{osc(r.m.s.)}$	1.8	2.8	2.8	V
Anode Current	I_a	2.7	5.5	6.0	mA
Conversion Conductance	g_c	2.2	2.8	2.9	mA/V
Valve Anode Resistance ($\delta V_a / \delta I_a$)	r_a	19	15	14	k Ω
Input Resistance ($f = 100$ MHz)	R_{in}	—	15	—	k Ω

As Oscillator in Television Receivers

Anode Supply Voltage	$V_{a(b)}$	180	V
Anode Load Resistance	R_a	4.4	k Ω
Grid Resistance	R_g	22	k Ω
Oscillator Voltage	$V_{osc(r.m.s.)}$	9.0	V
Anode Current	I_a	7.4	mA
Anode Dissipation	P_a	1.2	W

