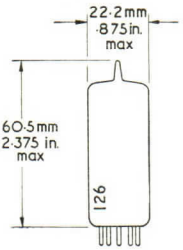
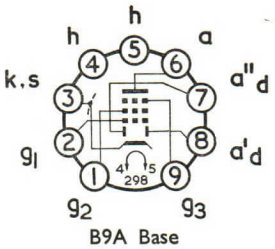


DOUBLE DIODE VARIABLE-MU R.F. PENTODE



B9A Base

GENERAL

This double diode variable-mu R.F. pentode is intended for use with the pentode as an R.F. Amplifier or I.F. Amplifier and the diode sections only for A.M. detection.

Heater Voltage	V_h	6·3	V
Heater Current	I_h	0·3	A

RATINGS

Pentode Section

Maximum Anode Dissipation	$P_{a(max)}$	2·25	W
Maximum Screen Grid Dissipation	$P_{g2(max)}$	0·45	W
Maximum Anode Supply Voltage	$V_{a(b)max}$	550	V
Maximum Anode Voltage	$V_{a(max)}$	300*	V
Maximum Screen Grid Supply Voltage	$V_{g2(b)max}$	550	V
Maximum Screen Grid Voltage	$V_{g2(max)}$		
$I_a < 4mA$		300*	V
$I_a > 8mA$		125	V
Maximum Negative Control Grid Voltage ($I_{g1}=0·3\mu A$)	$-V_{g1(Ig1=0·3\mu A)}$	1·3	V
Maximum Heater to Cathode Voltage	$V_{h-k(max)}$	100†	V
Maximum Cathode Current	$I_{k(max)}$	16·5	mA
Maximum Control Grid to Cathode Resistance	$R_{g1-k(max)}$	3·0	MΩ
Grid Current Biasing		22	MΩ
Maximum Grid 3 to Cathode Resistance	$R_{g3-k(max)}$	10	kΩ
Maximum Heater to Cathode Resistance	$R_{h-k(max)}$	20	kΩ

Diode Sections (each section)

Maximum Peak Inverse Voltage	P.I.V. max	200	V
Maximum Mean Anode Current	$I_{a(av)max}$	0·8	mA
Maximum Peak Anode Current	$i_{a(pk)max}$	5·0	mA

* If the heater, anode and screen grid voltages are obtained from an accumulator by means of a vibrator, $V_{a(max)}=250V$, $V_{g2(max)}=250V$.

† Measured with respect to higher potential heater pin.

INTER-ELECTRODE CAPACITANCES

Input	c_{in}	5·0	pF
Output	c_{out}	5·2	pF
Anode to Grid 1	$c_{a\text{-}g1}$	<0·0025	pF
Grid 1 to Heater	$c_{g1\text{-}h}$	0·05	pF
Anode′ Diode to Cathode	$c_{a'd\text{-}k}$	2·5	pF
Anode″ Diode to Cathode	$c_{a''d\text{-}k}$	2·5	pF
Anode′ Diode to Anode″ Diode	$c_{a'd\text{-}a''d}$	<0·25	pF
Grid 1 to Anode″ Diode	$c_{g1\text{-}a''d}$	<0·0008	pF
Grid 1 to Anode′ Diode	$c_{g1\text{-}a'd}$	<0·001	pF
Anode′ Diode to Heater	$c_{a'd\text{-}h}$	<0·003	pF
Anode″ Diode to Heater	$c_{a''d\text{-}h}$	<0·015	pF
Anode Pentode to Anode′ Diode	$c_{ap\text{-}a'd}$	<0·025	pF
Anode Pentode to Anode″ Diode	$c_{ap\text{-}a''d}$	<0·15	pF

CHARACTERISTICS

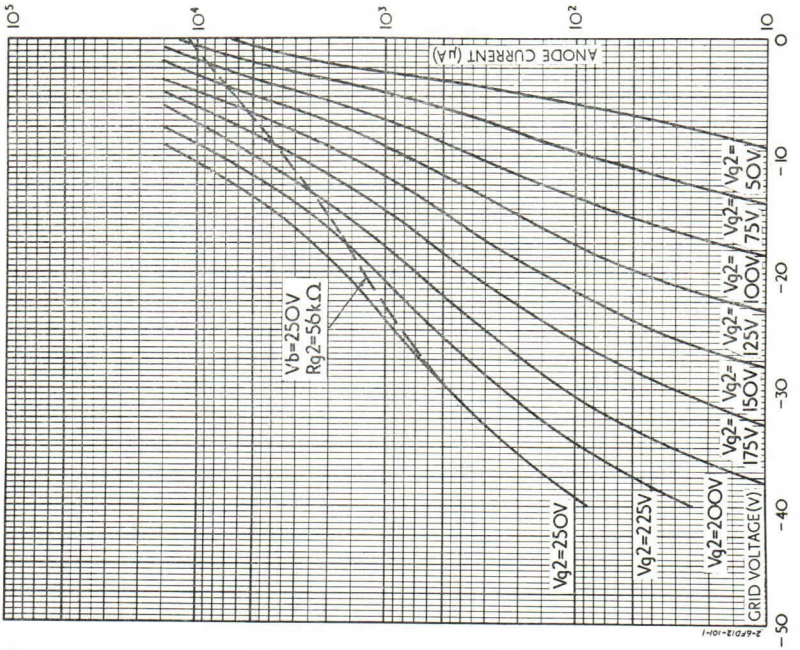
Anode Voltage	V_a	250	V
Screen Grid Voltage	V_{g2}	100	V
Control Grid Voltage	V_{g1}	−2·0	V
Anode Current	I_a	9·0	mA
Screen Grid Current	I_{g2}	2·7	mA
Mutual Conductance	g_m	3·8	mA/V
Valve Anode Resistance ($\delta v_a/\delta i_a$)	r_a	1·0	MΩ
Inner Amplification Factor	$\mu_{g1\text{-}g2}$	20	

TYPICAL OPERATION

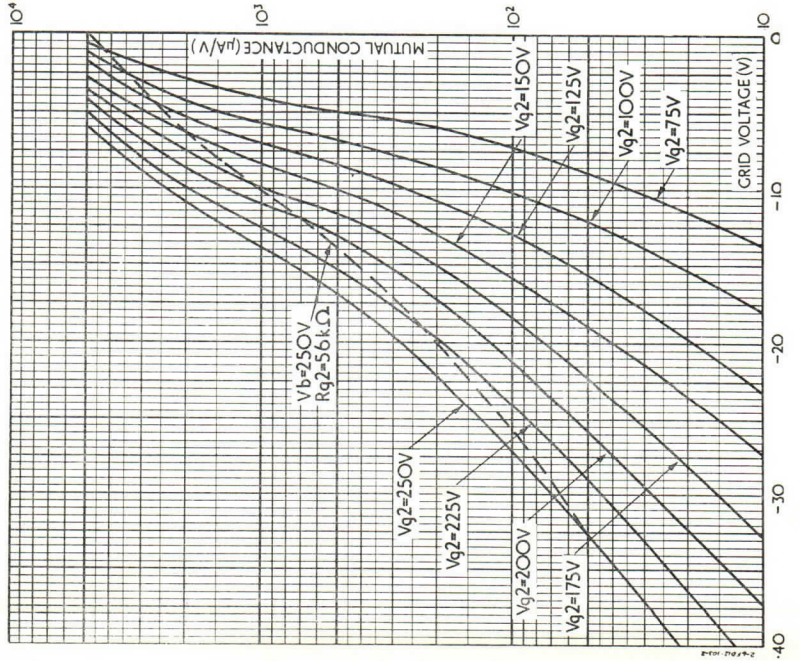
Supply Voltage	V_b	200	200	250	250	V
Anode Voltage	V_a	200	200	250	250	V
Control Grid Voltage	V_{g1}	−0·5*	−1·5	−0·5*	−2·0	V
Screen Grid Resistance	R_{g2}	47	30	82	56	kΩ
Cathode Resistance	R_k	—	105	—	170	Ω
Anode Current	I_a	9·5	11	8·0	9·0	mA
Screen Grid Current	I_{g2}	2·8	3·3	2·2	2·7	mA
Mutual Conductance	g_m	5·0	4·5	4·7	3·8	mA/V
Valve Anode Resistance ($\delta v_a/\delta i_a$)	r_a	0·6	0·6	0·8	1·0	MΩ
Equivalent Grid Noise Resistance	R_{eq}	2·5	3·5	2·3	4·0	kΩ
Mutual Conductance for $V_{g1}=-20V$	$g_{m(Vg1=-20V)}$	115	120	180	200	μA/V

* This voltage is produced by the grid current flowing through the grid resistor and the steady current of the diode. If this condition is not acceptable the negative grid bias should be increased to −1·5V at $V_a=200V$ and −2·0V at $V_a=250V$.

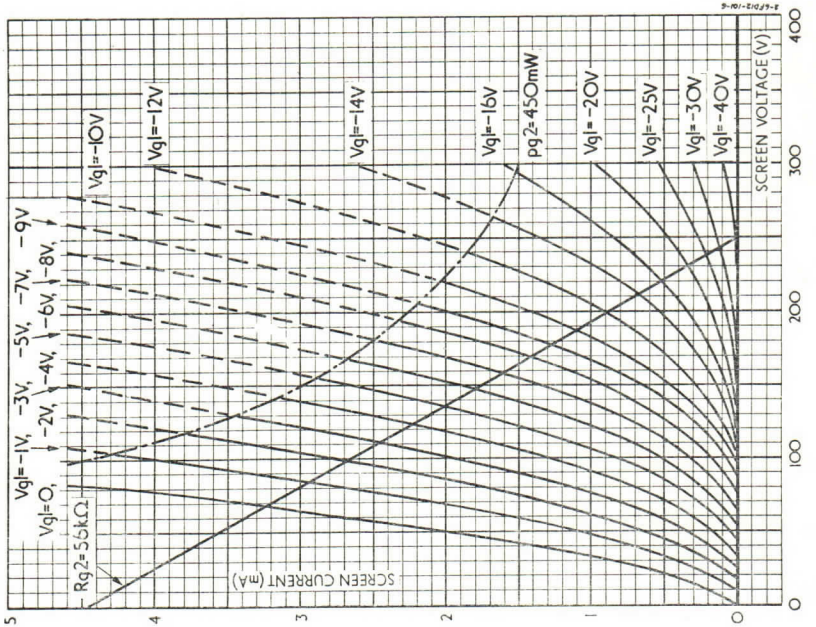
CHARACTERISTIC CURVES : I_a/V_g (V_a = 250V)



CHARACTERISTIC CURVES : g_m/V_g (V_a = 250V)



CHARACTERISTIC CURVES : I_{g2}/V_{g2} (V_a=250V)



CHARACTERISTIC CURVES : I_a, g_m, r_a/V_g
V_b=250V R_{g2}=56kΩ