

FERRANTI

TRIPLE DIODE TRIODE

An indirectly heated triple diode triode. One diode has a separate cathode. Primarily designed for use as A.F. amplifier and demodulator in FM/AM Receivers.

PHYSICAL DETAILS.

Base	...	...	B9A Novaj
Max. Overall Length	...	...	67.5 mm. (2 $\frac{3}{4}$ in.).
Max. Seated Height	...	...	60.5 mm. (2 $\frac{3}{8}$ in.).
Max. Diameter	...	...	22.2 mm. ($\frac{7}{8}$ in.).
Mounting Position	...	...	Any.

BASE CONNECTIONS.

Pin 1—Diode 3 Anode.	Pin 6—Diode 1 Anode.
Pin 2—Diode 2 Anode.	Pin 7—Triode Cathode.
Pin 3—Diode 2 Cathode.	Diode 1 Cathode.
Pin 4—Heater.	Diode 3 Cathode, Shield.
Pin 5—Heater.	Pin 8—Triode Grid.
	Pin 9—Triode Anode.

HEATER.

Heater Current	...	...	0.3 amp.
Heater Voltage	...	...	9.5 volts.

RATINGS.

TRIODE SECTION.

Max. Anode Supply Voltage	...	550 volts.
Max. Anode Voltage	...	250 volts.
Max. Anode Dissipation	...	1 watt.
Max. Cathode Current	...	5 mA.
*Max. R_g-k	...	3 M Ω
Max. R_h-k	...	20 k Ω
§Max. V_h-k	...	150 volts.
†Min. Negative Grid Voltage	...	1.3 volts.

DIODE SECTIONS.

Max. P.I.V. (Each Diode)	...	350 volts.
Max. Peak Current Diode 1	...	6 mA.
Max. Peak Current Diode 2	...	75 mA.
Max. Peak Current Diode 3	...	75 mA.
Max. Current Diode 1	...	1 mA.
Max. Current Diode 2	...	10 mA.
Max. Current Diode 3	...	10 mA.

CHARACTERISTICS.

TRIODE SECTIONS.

Anode Voltage	...	...	170	200	volts.
Grid Voltage	...	...	-1.85	-2.3	volts.
Anode Current	...	...	1	1	mA.
Mutual Conductance	...	...	1.45	1.4	mA/V.
Amplification Factor	...	...	70	70	
Anode Impedance	...	...	48	50	k Ω

DIODE SECTIONS.

Diode 1 Impedance ($V_{a'd}=10v$)	...	5 k Ω
Diode 2 Impedance ($V_{a'd}=5v$)	...	200 Ω
Diode 3 Impedance ($V_{a'd}=5v$)	...	200 Ω
$r_{a'd}/r_{a''d}$	...	0.65 to 1.5

MICROPHONY

This valve can be used without special precautions against microphony in circuits in which the input voltage is not less than 10 mV. for an output of 50 mV. from the output stage at 800 c/s. and higher frequencies.

TYPICAL OPERATION.

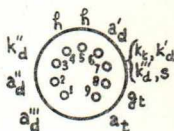
Triode as AF Amplifier with grid current bias.

Anode Supply Voltage	170	200	250	250	volts.
Anode Load Resistor	220	220	100	220	k Ω
Grid Resistor (R_{g-k})	10	10	10	10	M Ω
Cathode Resistor (R_k)	0	0	0	0	
Anode Current	0.46	0.56	1.4	.76	mA.
Stage Gain	51	53	47	54	
Total Distortion (for $V_{out}=3v$ r.m.s.)	0.4	0.3	0.25	0.2	%
Total Distortion (for $V_{out}=8v$ r.m.s.)	1.1	0.9	0.8	0.6	%
Grid Resistor for following valve ...	680	680	330	680	k Ω

*For operation with grid current biasing R_{g-k} may be increased to 22 M Ω max.

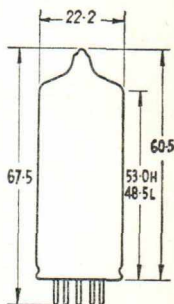
†For grid current of 0.3 μ A.

9AK8



Base
Connections

Underside View
of Base



All dimensions
shown are in
millimetres
(max. unless
otherwise stated).



9AK8



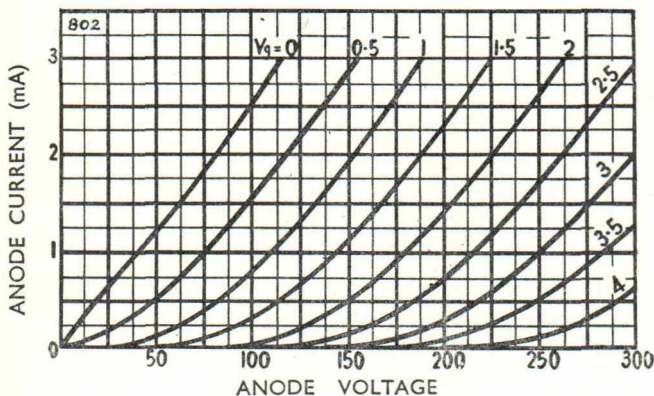
CAPACITANCES.

C_{in}	...	...	...	1.9 pF.
C_{out}	...	...	...	1.4 pF.
C_{a-g}	...	...	...	2.0 pF.
C_{g-h}	...	...	...	<0.04 pF.

TRIODE SECTION.

$C_{a'd}-(h+kt, k'd, k''d, s)$	...	0.8 pF.
$C_{a''d}-(h+k''d+kt, k'd, k''d, s)$	...	4.8 pF.
$C_{k''d}-(h+kt, k'd, k''d, s)$	...	4.8 pF.
$C_{k''d}$ -all	...	5.0 pF.
$C_{a'd-h}$	...	<0.25 pF.
$C_{a''d-h}$	...	<0.2 pF.
$C_{k''d-h}$	...	2.5 pF.

DIODE SECTION.



DIODE I

DIODE II - DIODE III

