

X78 X79



X78 and X79 TRIODE-HEXODE FREQUENCY CHANGERS

DESCRIPTION

Type X78 and X79 are triode-hexode frequency changers mounted on the B7G and B9A base respectively. Both types have identical electrical characteristics and are suitable for use up to 100 Mc/s.

RATINGS

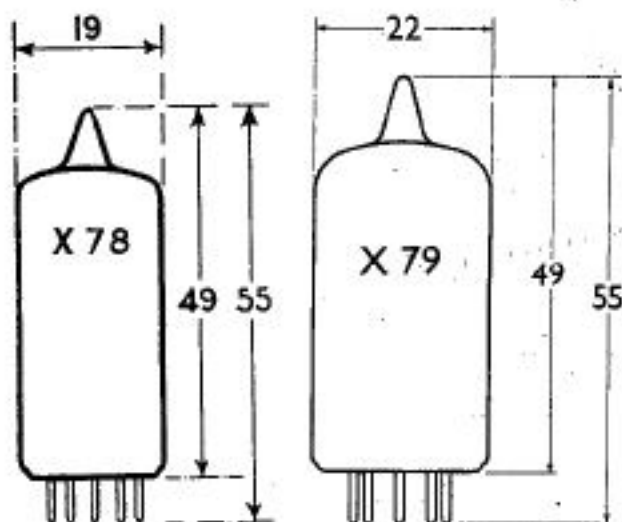
Heater Voltage	...	6.3	volts
Heater Current	...	0.3	approx. amp
Hexode Anode Voltage	...	250	max. volts
Screen Grid Voltage	...	100	max. volts
Triode Anode Voltage	...	100	max. volts
Cathode Current	...	20	max. mA
Optimum Triode Grid Voltage	...	10	peak volts
Triode Amplification Factor	...	22*	
Triode Mutual Conductance	...	2.8*	mA/V

* measured at $V_{at}=100$, $V_{gt}=0$.

Capacitances (taken on unshielded valve):

Control Grid to Hexode Anode	...	0.11	approx. pF
Control Grid to Triode Anode	...	0.08	" "
Control Grid to Triode Grid	...	0.22	" "
Triode Grid to Triode Anode	...	1.48	" "
Control Grid to all other electrodes	...	4.1	" "
Triode Anode to all other electrodes (Triode grid earthed)	...	1.5	" "
Triode Grid to all other electrodes (Triode anode earthed)	...	5.47	" "
Hexode Anode to all other electrodes	...	4.34	" "

DIMENSIONS



All dimensions are in mm. and are the maximum except where otherwise stated.

BASES

X78

B7G

- Pin 1: Screen Grid
 2: Control Grid
 3: Heater and Cathode
 4: Heater
 5: Hexode Anode
 6: Triode Anode
 7: Triode Grid

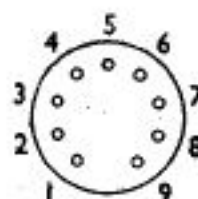


View looking on underside of base.

X79

B9A

- Pin 1: Screen Grid
 2: Control Grid
 3: Cathode
 4: Heater
 5: Heater
 6: Hexode Anode
 7: Triode Grid
 8: Triode Anode
 9: I.C.



View looking on underside of base.

I.C. No external connections should be made to this pin.

TYPES X78 & X79

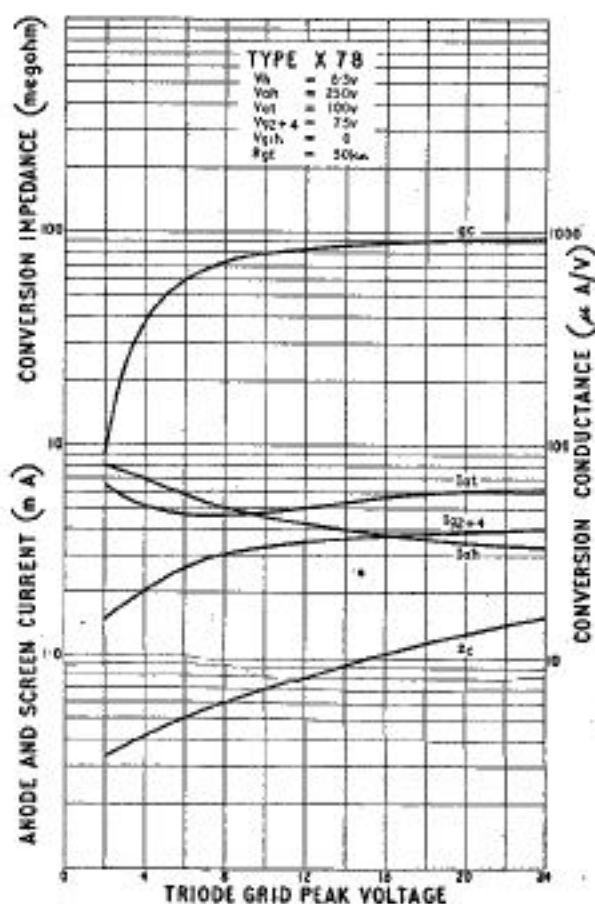
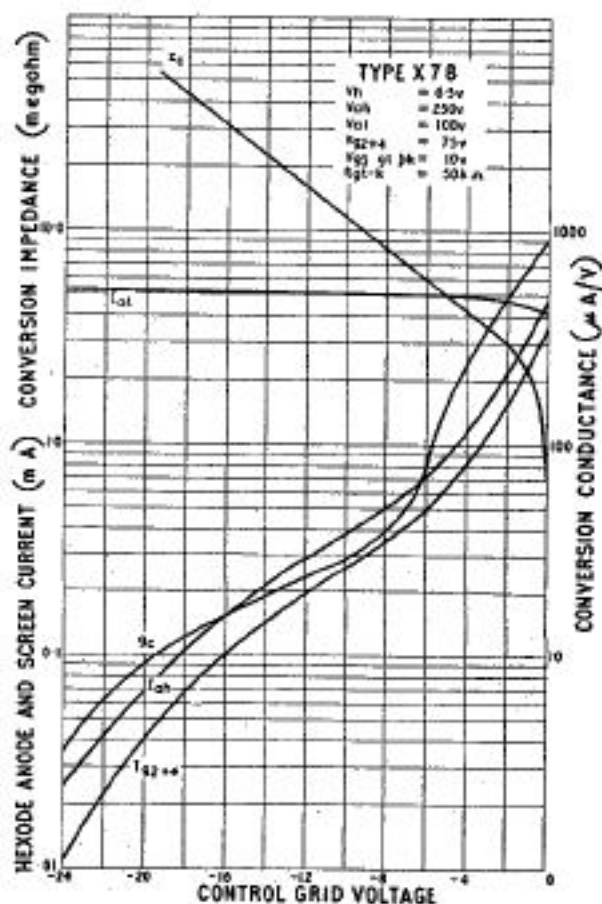
OPERATING CONDITIONS

Hexode Anode Voltage	...	...	...	...	...	...	250	volts
Screen Grid Voltage	...	...	...	...	...	...	75	volts
Triode Anode Voltage	...	...	...	...	...	...	100	volts
Triode Grid Voltage	...	...	...	...	...	...	10	peak volts
Control Grid Voltage	...	...	...	...	...	...	0	volts
Hexode Anode Current	...	...	...	...	...	...	4.5	mA
Screen Grid Current	...	...	...	...	...	...	3.4	mA
Triode Anode Current	...	...	...	...	...	...	4.5	mA
Conversion Conductance	...	...	...	...	...	...	780	$\mu\text{A/V}$
Conversion Impedance	...	...	...	...	...	...	0.7	megohm
Triode Grid Resistor	...	...	...	...	...	...	0.05	megohm
Equivalent Noise Resistance†	...	...	...	...	...	...	150,000	ohms
Input Impedance at 45 Mc/s.	...	...	...	...	...	...	3,500	ohms
Control Grid to Cathode Capacitance at 45 Mc/s.	...	...	...	...	...	...	6	pF

† Referred to Control Grid.

KEY TO SYMBOLS

zc	Conversion Impedance
gc	Conversion Conductance
lah	Hexode Anode Current
lg _{g+4}	Screen Grid Current
lat	Triode Anode Current



CHARACTERISTIC CURVES OF AVERAGE VALVES.