



TP.23

BATTERY TRIODE PENTODE

RATING.

Filament Volts	...	...	...	...	...	...	...	...	2-0
Filament Current	...	...	...	...	...	...	...	...	0-25

Pentode Section.

Anode Volts (maximum)	...	...	...	...	...	...	...	...	150
Screen Volts (maximum)	...	...	...	...	...	...	...	...	150
*Mutual Conductance	...	...	...	...	...	...	...	...	1-2

*At $E_a=120$; $E_s=60$; $E_g=0$.

Triode Section.

Anode Volts (maximum)	...	...	...	...	...	...	...	...	150
*Amplification Factor	...	...	...	...	...	...	...	...	20
*Mutual Conductance	...	...	...	...	...	...	...	...	2-1
Maximum Peak Anode Current (mA)	...	...	...	...	...	...	...	...	20

* At $E_a=100$; $E_g=0$.

TYPICAL OPERATION.

	Suppressor Injection.	Cathode Injection.
Anode Voltage	120	120
Screen Voltage	60	60
Fixed Bias	1-5	1-5
Anode Current (mA)	0-55	1-0
Screen Current (mA)	0-95	0-5
Peak Heterodyne Volts	8-0	3-0
Conversion Conductance ($\mu A/V$)	250	400

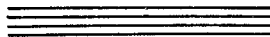
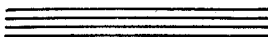
INTER-ELECTRODE CAPACITIES.

*Anode 1 to Earth	...	...	...	...	...	12-25 $\mu\mu F$
*Grid 1 to Earth	...	...	...	...	...	9-25 $\mu\mu F$
Anode 1 to Grid 1	...	...	...	...	...	0-02 $\mu\mu F$
*Anode 0 to Earth (less G0 to A0)	...	...	...	...	...	8-75 $\mu\mu F$
*Grid 0 to Earth (less G0 to A0)	...	...	...	...	...	13-75 $\mu\mu F$
Anode 0 to Grid 0	...	...	...	...	...	4-5 $\mu\mu F$

* "Earth" denotes the electrodes of any second valve section and the remaining earthy potential electrodes of the section under measurement and metallising joined to filament.

DIMENSIONS.

Maximum Overall Length	...	...	...	...	126 mm.
Maximum Overall Diameter	...	...	...	...	45 mm.





GENERAL.

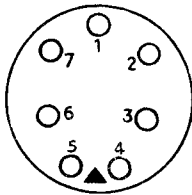
The TP.23 is a triode pentode designed for use as a self-oscillating frequency changer in battery operated receivers covering frequencies up to the order of 20 Mc/second. The frequency changer has variable-mu characteristics, i.e., the gain can be controlled by applying bias to the input grid. The oscillator grid and the suppressor grid of the pentode are joined internally. The valve is based in a standard 7-pin base, the connections to which are given below.

APPLICATION.

The valve is primarily intended for use with suppressor grid injection, though it may be used with combined cathode and suppressor grid injection.

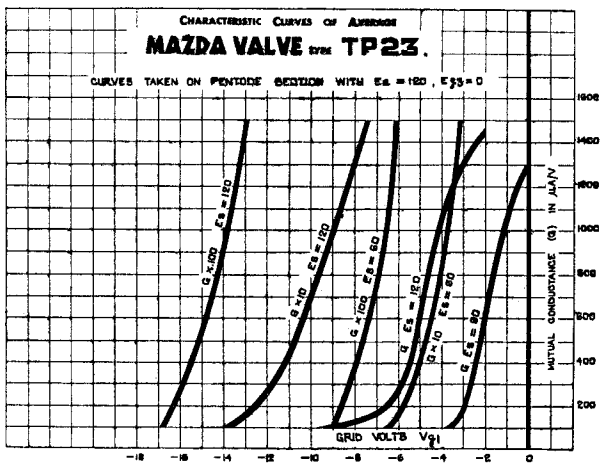
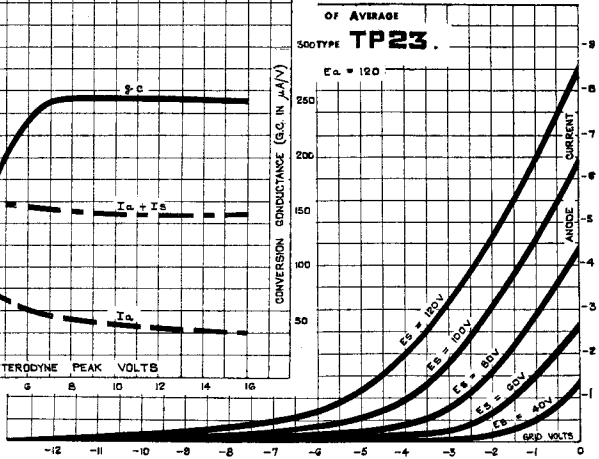
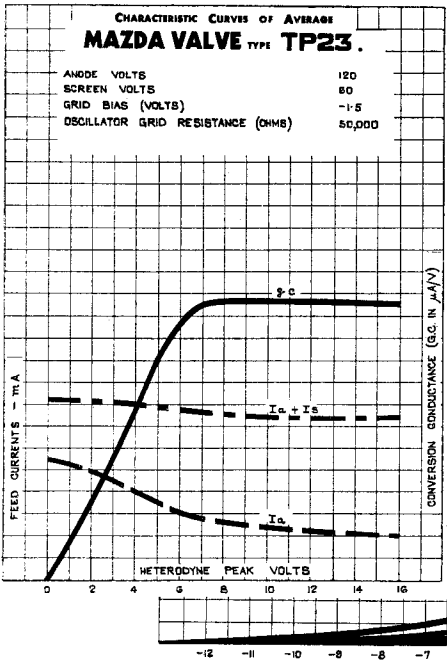
In all-wave receivers when used with suppressor-grid injection the triode anode should be parafed and a tuned anode circuit employed. The coupling condenser should have a value of .0001 mfd. A wave-wound coil should be inserted between the H.T. supply and the parafed resistance in order to remove the damping effect of this resistance on the long and medium wave oscillator tuned circuit. This coil should have a natural resonance outside the oscillator band and a small self-capacity. A grid leak of 50,000 ohms and grid condenser of .0005 mfd. should be used and the grid leak should be returned to the L.T.+ . The circuit diagram shows a suggested arrangement.

BASING.



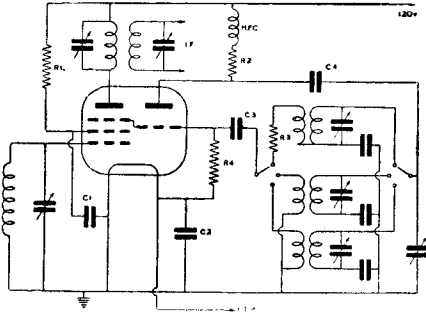
Viewed from the free end of the base.

- Pin No. 1. Oscillator Anode.
 - 2. Oscillator Grid & G3.
 - 3. Screen.
 - 4. Filament.
 - 5. Filament.
 - . Metallising.
 - 7. Pentode Anode.
- Top Cap. Control Grid.





SUGGESTED CIRCUIT DIAGRAM USING
TP.23



Values.

R.1	60,000.	C.1	.05 mfd.
R.2	} Depend	C.2	.01 mfd.
R.3		} on coils	C.3	.0005 mfd.
R.4	50,000.	C.4	.0001 mfd.

Mazda Radio Valves are manufactured in Great Britain for
the British Thomson-Houston Co. Ltd., London and Rugby.
