



## HL.23 DD.

### BATTERY ECONOMY DOUBLE DIODE TRIODE

#### RATING.

Filament Voltage ... ..	2.0
Filament Current (amps.) ... ..	0.05
Maximum Anode Voltage ... ..	150
*Mutual Conductance (mA/V) ... ..	1.2
*Amplification Factor ... ..	25
*Anode A.C. Resistance (ohms) ... ..	21,000

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

#### TYPICAL OPERATION.

H.T. Voltage ... ..	120	120
Anode Load (ohms) ... ..	50,000	100,000
Grid Bias ... ..	-1.5	-0.9
Anode Current (mA) ... ..	0.6	0.5

#### INTER-ELECTRODE CAPACITIES.

*Anode to Earth ... ..	6.0 $\mu\mu\text{F}$ .
*Grid to Earth ... ..	2.0 $\mu\mu\text{F}$ .
Anode to Grid ... ..	3.5 $\mu\mu\text{F}$ .
*Diode 1 to Earth ... ..	3.5 $\mu\mu\text{F}$ .
*Diode 2 to Earth ... ..	3.0 $\mu\mu\text{F}$ .
Diode 1 to Diode 2 ... ..	0.1 $\mu\mu\text{F}$ .

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

#### DIMENSIONS.

Maximum Overall Length ... ..	95 mm.
Maximum Diameter ... ..	32 mm.

#### GENERAL.

The HL.23DD is a double diode triode for use in battery operated receivers. The two diodes operate on a separate portion of the filament, with the result that in operation the two diodes and the triode are independent of each other. The special feature of this valve, is that it has been designed for battery economy, and due to the exceptionally low filament consumption is therefore particularly recommended for use in battery portable receivers. The bulb is of small dimensions and metallised. The valve is fitted with a British Octal Base, the connections to which are given overleaf.

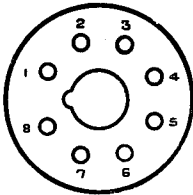
#### APPLICATION.

The HL.23DD is recommended for performing the simultaneous functions of detection, automatic volume control and audio frequency amplification. The anode current of each diode starts at different potentials. In use, therefore, Pin No. 1 should be connected to the negative terminal of the L.T. battery, and for normal purposes the Diode No. 2 should be employed as a detector diode. The diode load resistance should be returned to the negative end of the filament, whilst diode No. 1 should be



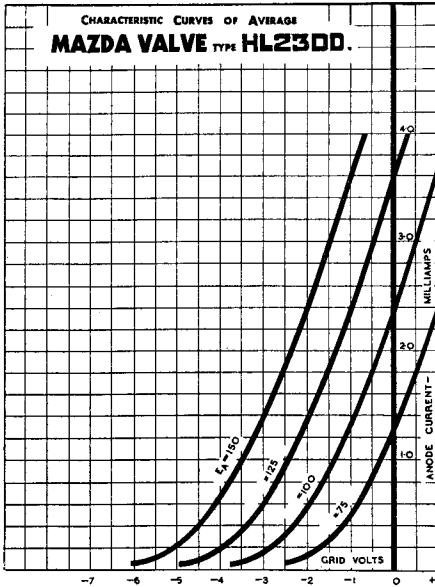
used as an A.V.C. diode. In this way an extra delay voltage of the order of 1.4 volt is obtained. When the valve is used in conjunction with an H.F. valve requiring an initial bias of 1.5 volts, a total delay voltage of about 2.9 is obtained. It is recommended that the diode load resistance should not be less than 0.5 megohm. When the triode is used as a resistance-coupled L.F. amplifier an anode load of the order of 100,000 ohms should be used. When used with a parafed transformer circuit, a lower resistance may be necessary, but this will depend upon the transformer design.

**BASING.**



- Pin No. 1. Filament.
  - 2. —
  - 3. Anode.
  - 4. —
  - 5. Diode 2.
  - 6. Metallising.
  - 7. Diode 1.
  - 8. Filament.
- Top Cap. Control Grid.

Viewed from the free end of the base.



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