The triple diode EAB 1 consists of three diodes arranged about a common, horizontally mounted, cathode, having been especially developed for 3-diode circuits. The object of this type of circuit is to eliminate distortion and other unpleasant effects arising from the use of delayed automatic gain control and it involves an arrangement employing three diodes, one of which serves as detector and one for the A.G.C., whilst the third is used for the delaying effect. With a view to suppressing hum, the detector diode, which is shown as $d_1$ in the diagram of base connections, Fig. 2, is mounted farthest from the heater. The diode nearest to the filament and marked $d_2$ in the diagram has a very low capacitance with respect to the detector diode, this being less than 0.08 $\mu\text{F}$. Since the A.G.C. diode, for many reasons, is usually connected to the primary circuit of the preceding band-filter, the amount of capacitance between this diode and the detector diode is extremely important. As the reader is doubtless aware, this capacitance acts as a coupling between the two band-filter circuits and tends to have an adverse effect on the selectivity. It is for this reason that diode $d_1$ is employed for the A.G.C. Diode $d_3$, located between $d_1$ and $d_2$, is then available for other purposes, in particular to provide the delaying effect for the A.G.C. as employed in this type of circuit.

**Heater ratings**

Heating: indirect, A.C. or D.C., series or parallel supply.

Heater voltage .......................... $V_f = 6.3$ V

Heater current .......................... $I_f = 0.200$ $\text{A}$

**Capacitances**

Diodes $d_1$ — $d_2$ .......................... $C_{d1d2} < 0.05$ $\mu\text{F}$

Diodes $d_1$ — $d_3$ .......................... $C_{d1d3} < 0.08$ $\mu\text{F}$

Diodes $d_2$ — $d_3$ .......................... $C_{d2d3} < 0.4$ $\mu\text{F}$

Diode $d_1$ — cathode ....................... $C_{d1k} = 1.5$ $\mu\text{F}$

Diode $d_2$ — cathode ....................... $C_{d2k} = 1.35$ $\mu\text{F}$

Diode $d_3$ — cathode ....................... $C_{d3k} = 2.2$ $\mu\text{F}$
Maximum ratings

Voltage on $d_1$ (peak value) 
\[ V_{d_1} = \text{max.} \ 200 \ \text{V} \]
Voltage on $d_2$ (peak value) 
\[ V_{d_2} = \text{max.} \ 200 \ \text{V} \]
Voltage on $d_3$ (peak value) 
\[ V_{d_3} = \text{max.} \ 200 \ \text{V} \]
Direct current to $d_1$ 
\[ I_{d_1} = \text{max.} \ 0.8 \ \text{mA} \]
Direct current to $d_2$ 
\[ I_{d_2} = \text{max.} \ 0.8 \ \text{mA} \]
Direct current to $d_3$ 
\[ I_{d_3} = \text{max.} \ 0.8 \ \text{mA} \]
External resistance between filament and cathode 
\[ R_{fk} = \text{max.} \ 20,000 \ \text{ohms} \]

Potential difference between filament and cathode
(D.C. voltage or effective value of alternating voltage) 
\[ V_{fk} = \text{max.} \ 100 \ \text{V} \]

Voltage on diode at diode current 
\[ \begin{cases} (I_{d_1} = \pm 0.3 \ \mu\text{A}) \ V_{d_1} \\ (I_{d_2} = \pm 0.3 \ \mu\text{A}) \ V_{d_2} \\ (I_{d_3} = \pm 0.3 \ \mu\text{A}) \ V_{d_3} \end{cases} \]
\[ = \text{max.} \ -1.3 \ \text{V} \]