

## 12E1

## BEAM TETRODE

Indirectly heated—for parallel operation

GENERAL

The 12E1 is intended for use as a series or shunt control valve in stabilised power packs.

RATING

|                                                    |                         |       |
|----------------------------------------------------|-------------------------|-------|
| Heater Voltage (volts)                             | $V_h$                   | 6.3   |
| Heater Current (amps)                              | $I_h$                   | 1.6   |
| Maximum Anode Voltage (volts)                      | $V_a(\text{max})$       | 800   |
| Maximum Screen Voltage (volts)                     | $V_{g2}(\text{max})$    | 300   |
| Maximum Control Grid Voltage (volts)               | $V_{g1}(\text{max})$    | -100  |
| Maximum Voltage between<br>$g_1$ and $g_2$ (volts) | $V_{g1-g2}(\text{max})$ | 400   |
| Mutual Conductance (mA/V)                          | $g_m$                   | 14 *  |
| Inner $\mu$                                        | $\mu_{g1, g2}$          | 5.3 * |
| Maximum Anode Dissipation (watts)                  | $P_a(\text{max})$       | 35    |
| Maximum Screen Dissipation (watts)                 | $P_{g2}(\text{max})$    | 5.0   |
| Maximum Cathode Current (mA)                       | $I_k(\text{max})$       | 300   |
| Maximum Potential Heater/Cathode<br>(volts D.C.)   | $V_{h-k}(\text{max})$   | 300 † |

\* Taken at  $V_a = V_{g2} = 150V$  $I_a = 200mA$ .

† Provided the cathode is positive.

All maximum ratings are Absolute values not Design Centres.

INTER-ELECTRODE CAPACITANCES (pF)

|             |             |      |
|-------------|-------------|------|
| Grid/Earth  | $C_{in}$    | 23.0 |
| Anode/Earth | $C_{out}$   | 8.0  |
| Anode/Grid  | $C_{a, g1}$ | 0.85 |

"Earth" denotes the remaining earthy potential electrodes and heater joined to cathode.

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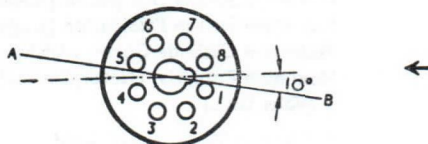
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DIMENSIONS

|                                 |     |
|---------------------------------|-----|
| Maximum Overall Length (mm)     | 146 |
| Maximum Diameter (mm)           | 54  |
| Maximum Seated Height (mm)      | 133 |
| Approximate Nett Weight (ozs)   | 2½  |
| Approximate Packed Weight (ozs) | 7   |

MOUNTING POSITION—Vertical

If run horizontally then the axis AB must be on a horizontal plane.

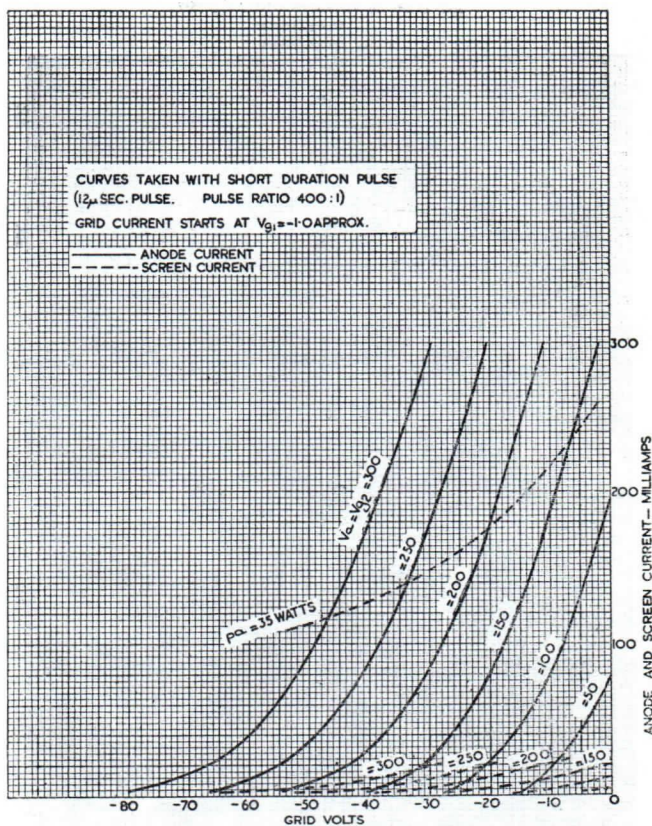
BULB—ClearTOP CAP—American miniature (CT 1)BASE—International Octal (108)CONNECTIONS

|         |               |                |
|---------|---------------|----------------|
| Pin 1   | No connection | NC             |
| Pin 2   | Heater        | h              |
| Pin 3   | No connection | NC             |
| Pin 4   | Screen Grid   | g <sub>2</sub> |
| Pin 5   | Control Grid  | g <sub>1</sub> |
| Pin 6   | No connection | NC             |
| Pin 7   | Heater        | h              |
| Pin 8   | Cathode       | k              |
| Top Cap | Anode         | a              |

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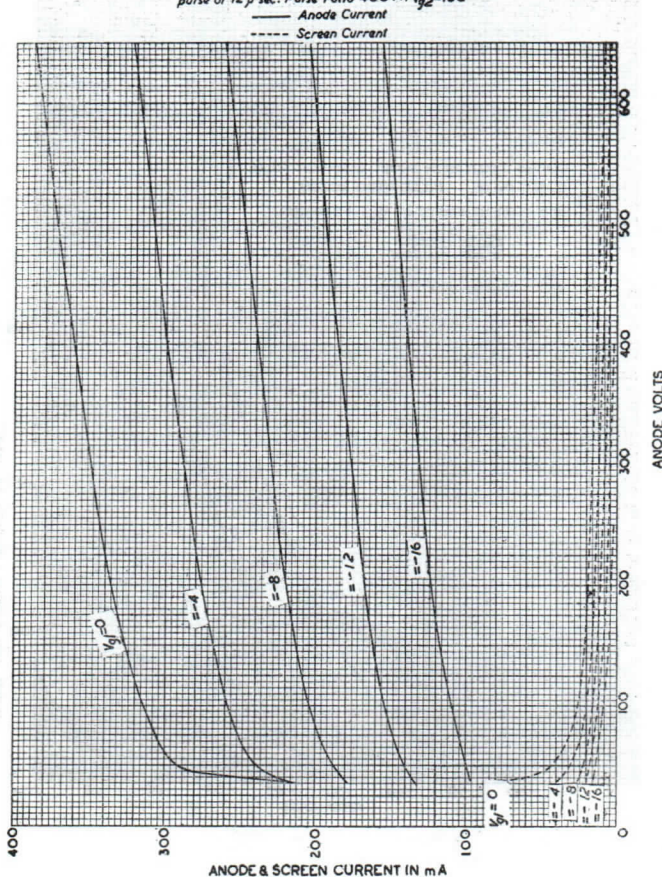
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## AVERAGE CHARACTERISTIC CURVES

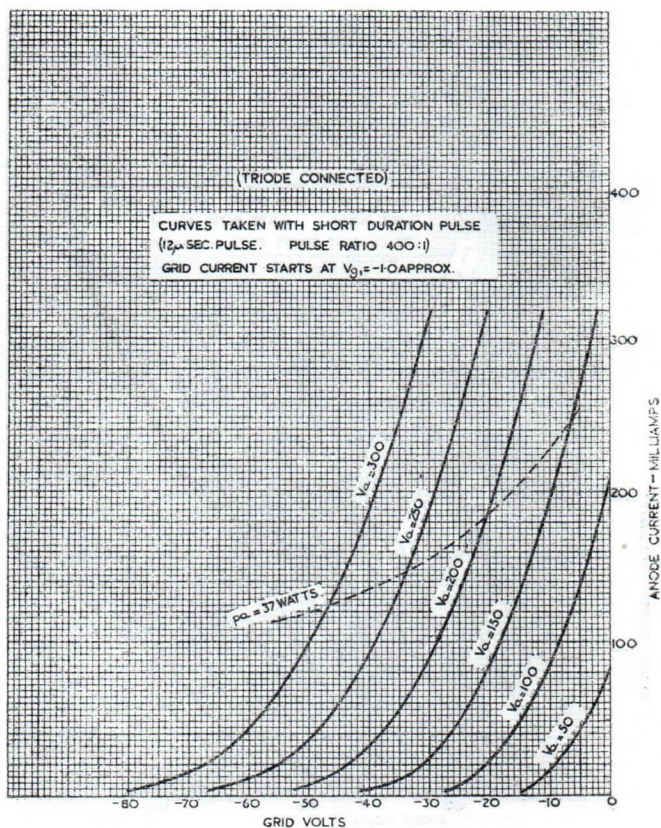
These curves were taken with a short duration pulse of 12  $\mu$  sec. Pulse ratio 400:1.  $V_{g2}=150$



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