



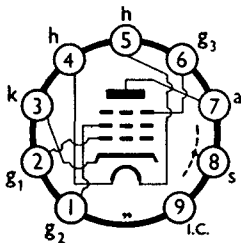
## VIDEO POWER PENTODE

# N309/PL83

FEBRUARY, 1956

A power pentode of high mutual conductance primarily designed for use as a video output valve in television receivers.

### BASE CONNECTIONS AND VALVE DIMENSIONS



External view

Base Type : B9A

Bulb : Tubular.

#### Maximum Dimensions

|                  |    |    |
|------------------|----|----|
| Overall Length : | 78 | mm |
| Seated Length    | 72 | mm |
| Diameter         | 22 | mm |

### HEATER

|       |     |   |
|-------|-----|---|
| $I_h$ | 0.3 | A |
| $V_h$ | 15  | V |

### MAXIMUM RATINGS

|           |     |   |
|-----------|-----|---|
| $V_{h-k}$ | 150 | V |
| $V_a$     | 250 | V |
| $V_{g2}$  | 250 | V |
| $P_a$     | 9   | W |
| $P_{g2}$  | 2   | W |

### CHARACTERISTICS

#### Pentode Connection

|                  |      |      |      |            |
|------------------|------|------|------|------------|
| $V_a$            | 170  | 200  | 250  | V          |
| $V_{g2}$         | 170  | 200  | 250  | V          |
| $V_{g1}$ approx. | -2.3 | -3.5 | -5.8 | V          |
| $I_a$            | 36   | 40   | 36   | mA         |
| $I_{g2}$         | 5    | 5.5  | 5    | mA         |
| $\mu$            | 410  | 450  | 840  |            |
| $r_a$            | 41   | 42   | 75   | k $\Omega$ |
| $g_m$            | 10   | 10.7 | 11.2 | mA/V       |

#### Triode Connection

|                  |      |      |            |
|------------------|------|------|------------|
| $V_a, g2^*$      | 170  | 200  | V          |
| $V_{g1}$ approx. | -2.4 | -3.4 | V          |
| $I_a, g2$        | 40   | 45   | mA         |
| $\mu$            | 24   | 25   | —          |
| $r_a, g2$        | 1.92 | 1.84 | k $\Omega$ |
| $g_m$            | 12.5 | 13.5 | mA/V       |

\*  $g2$  connected to anode through 100 ohms resistor.

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## TYPICAL OPERATION

### Pentode Connection Class A Amplifier. Single Valve

|                                   |      |      |      |    |
|-----------------------------------|------|------|------|----|
| V <sub>a</sub>                    | 170  | 200  | 250  | V  |
| V <sub>g2</sub>                   | 170  | 200  | 250  | V  |
| V <sub>g1</sub> (no sig.) approx. | −2.5 | −3.0 | −5.5 | V  |
| I <sub>a</sub> (no sig.)          | 32   | 39   | 33   | mA |
| I <sub>g2</sub> (no sig.)         | 4.2  | 5.0  | 4.2  | mA |
| r <sub>a</sub>                    | 5.0  | 5.0  | 5.0  | kΩ |
| R <sub>k</sub>                    | 68   | 68   | 150  | Ω  |
| P <sub>out</sub>                  | 1.65 | 2.72 | 3.45 | W  |
| D                                 | 7.8  | 10.0 | 10.0 | %  |

## CAPACITANCES

Taken on an unscreened valve.

c<sub>in</sub> 10.8 pF      c<sub>out</sub> 6 pF      c<sub>a-g</sub> <0.1 pF

## MOUNTING

Any position.

## SCREENING

No internal or external screening is fitted to the valve.

## RETAINING

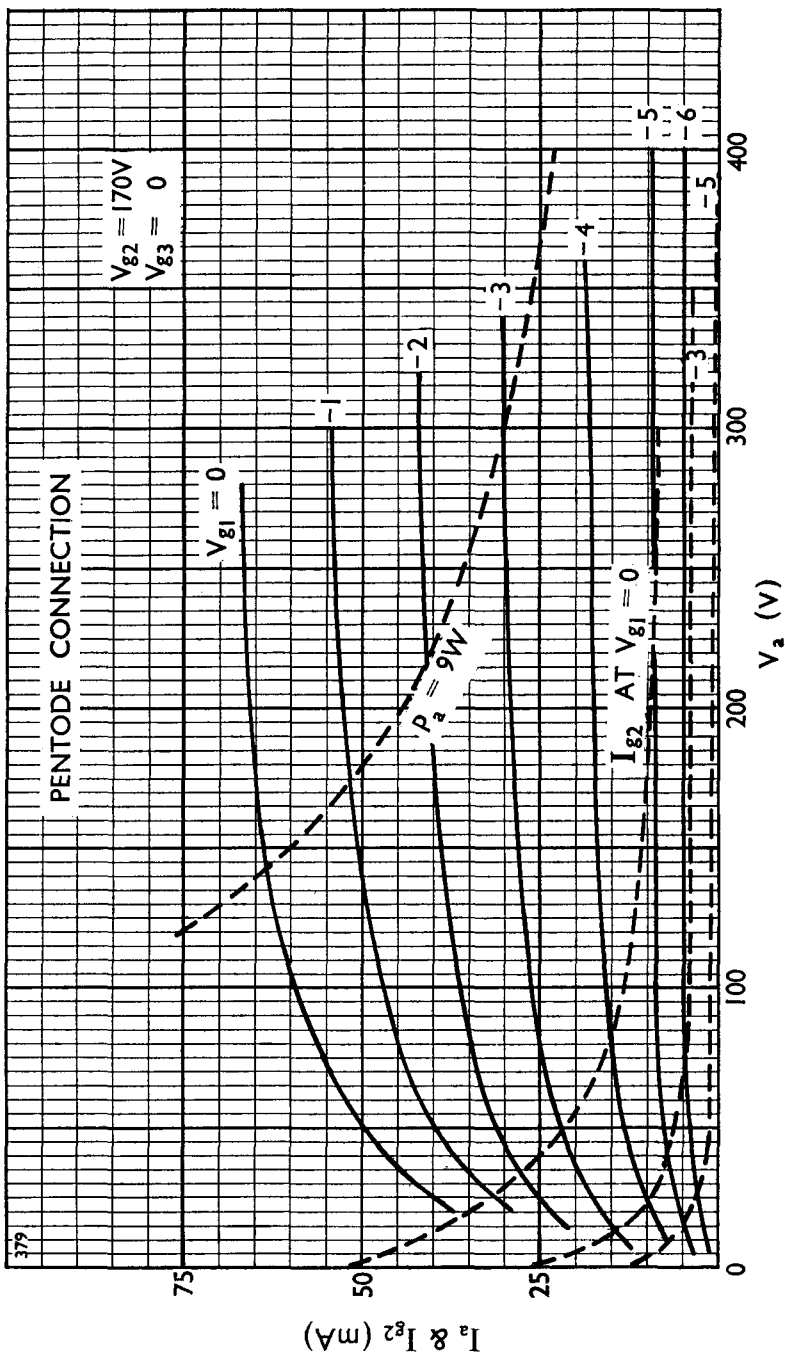
In equipment subject to vibration or shock a retainer is required.

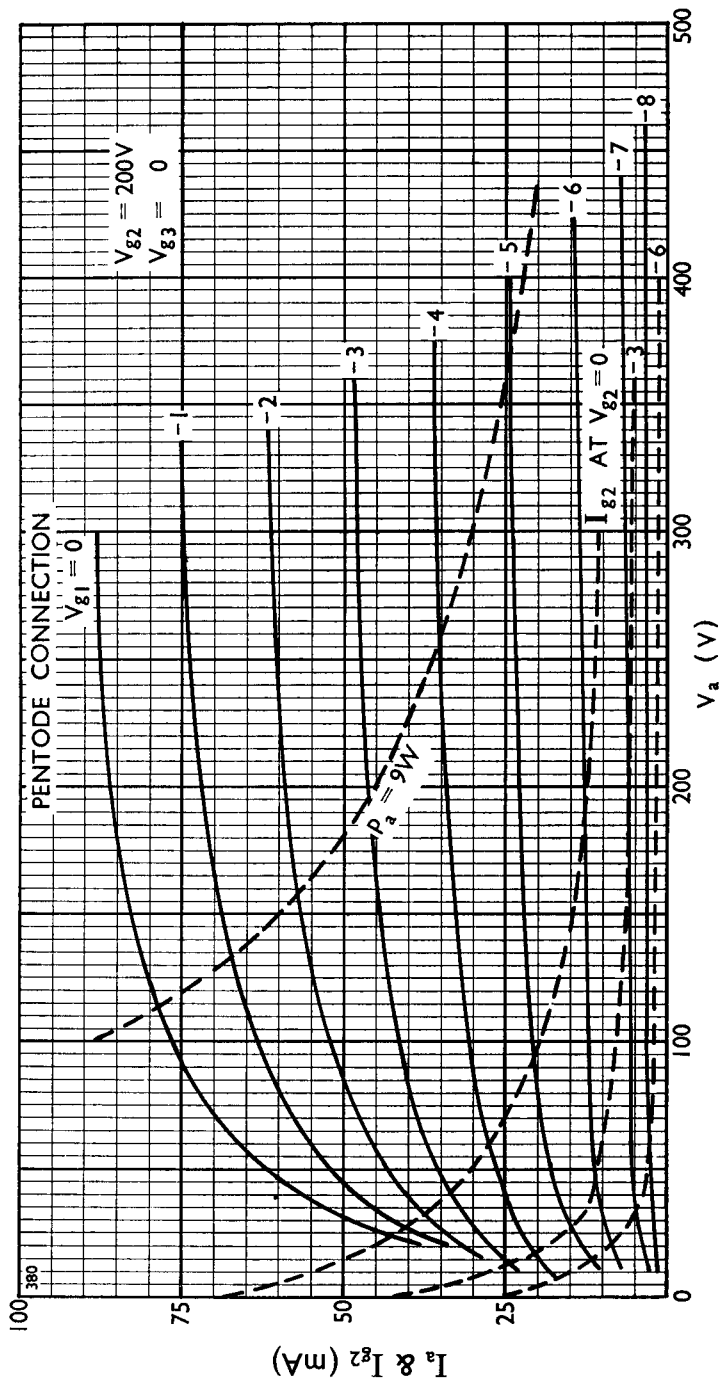
## VENTILATION

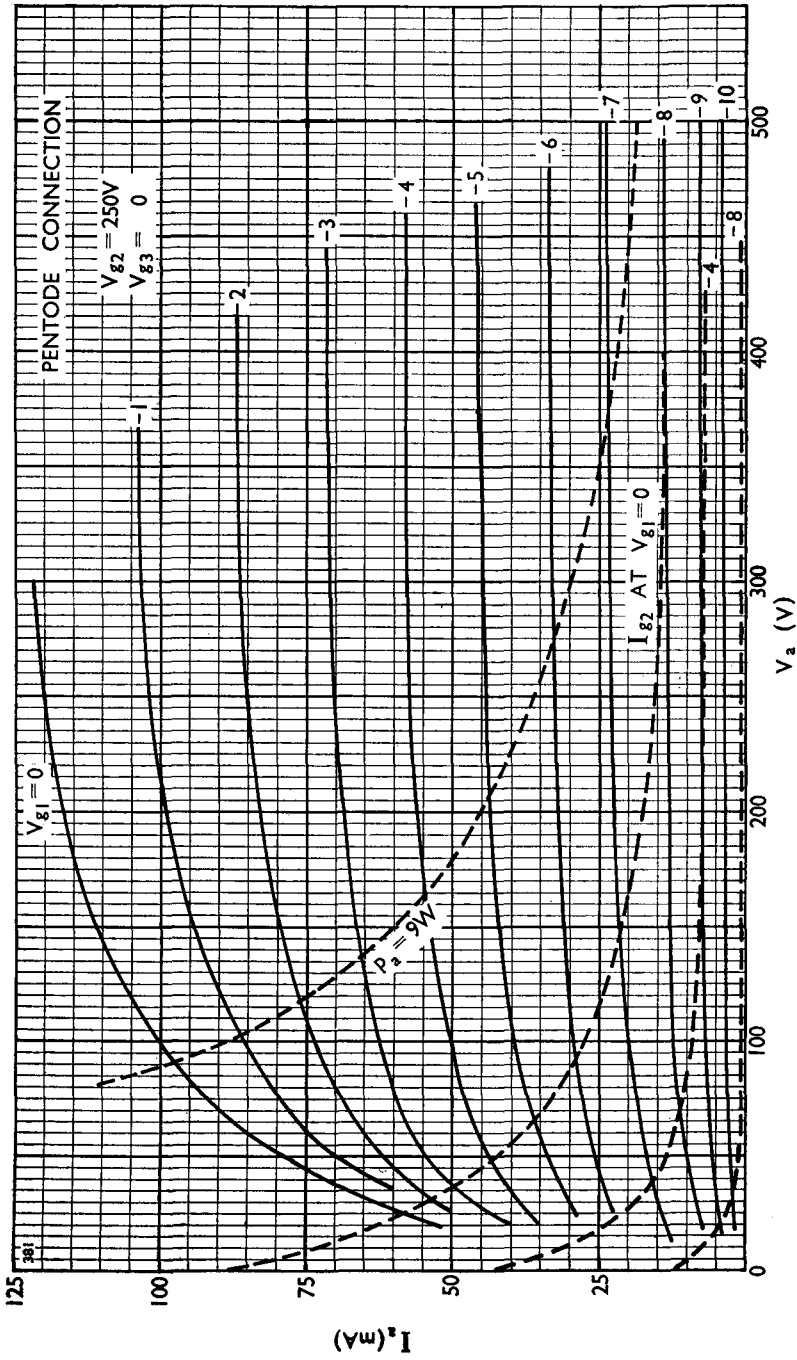
Free air circulation is preferable. The temperature of the hottest part of the bulb must not exceed 200°C.

## MICROPHONY

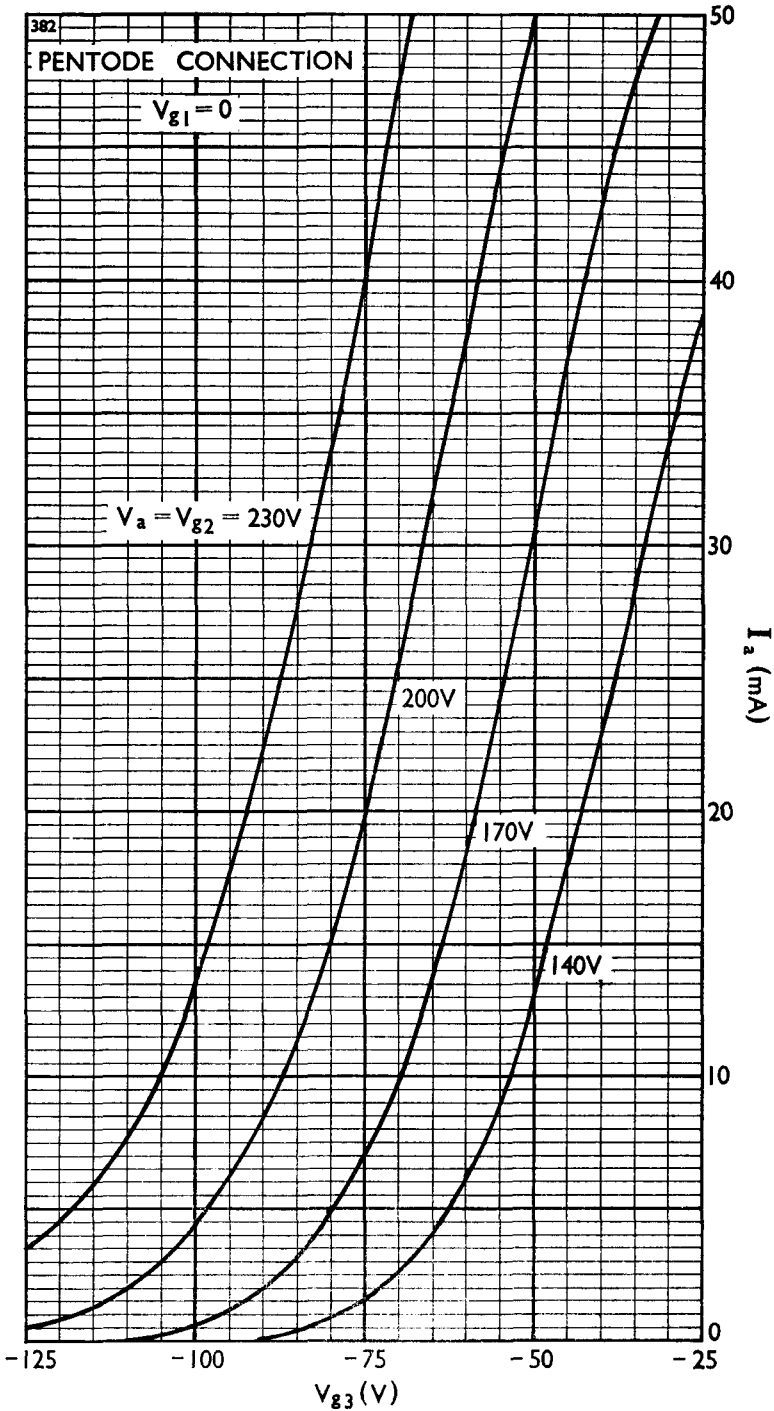
This type is free from microphony in normal receiver application.

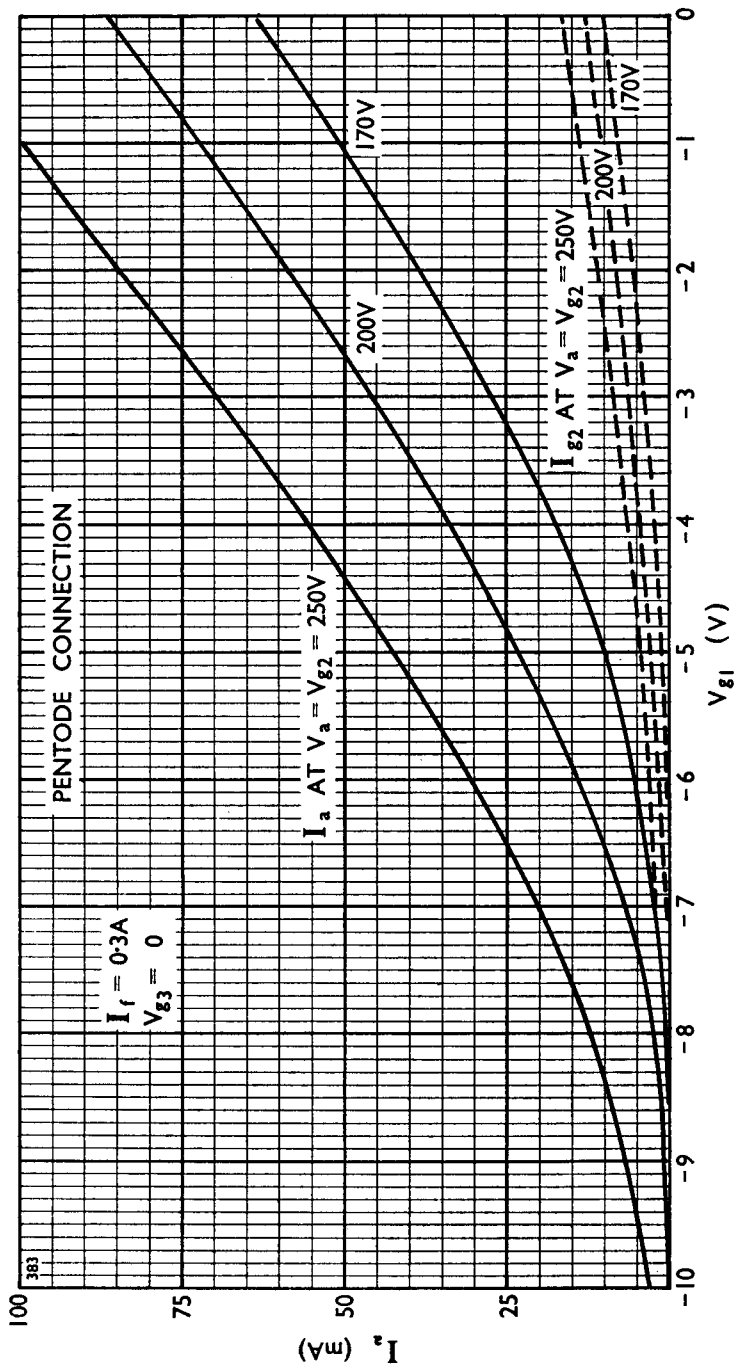


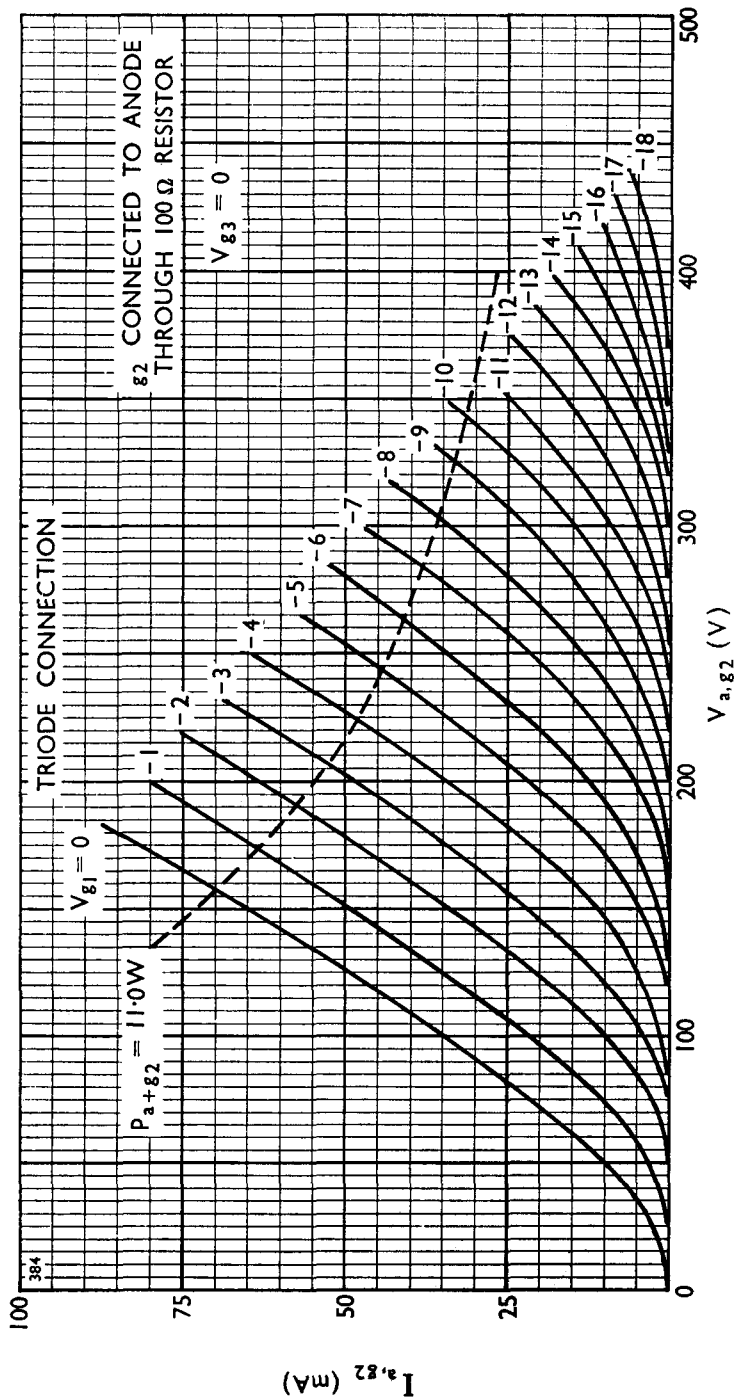


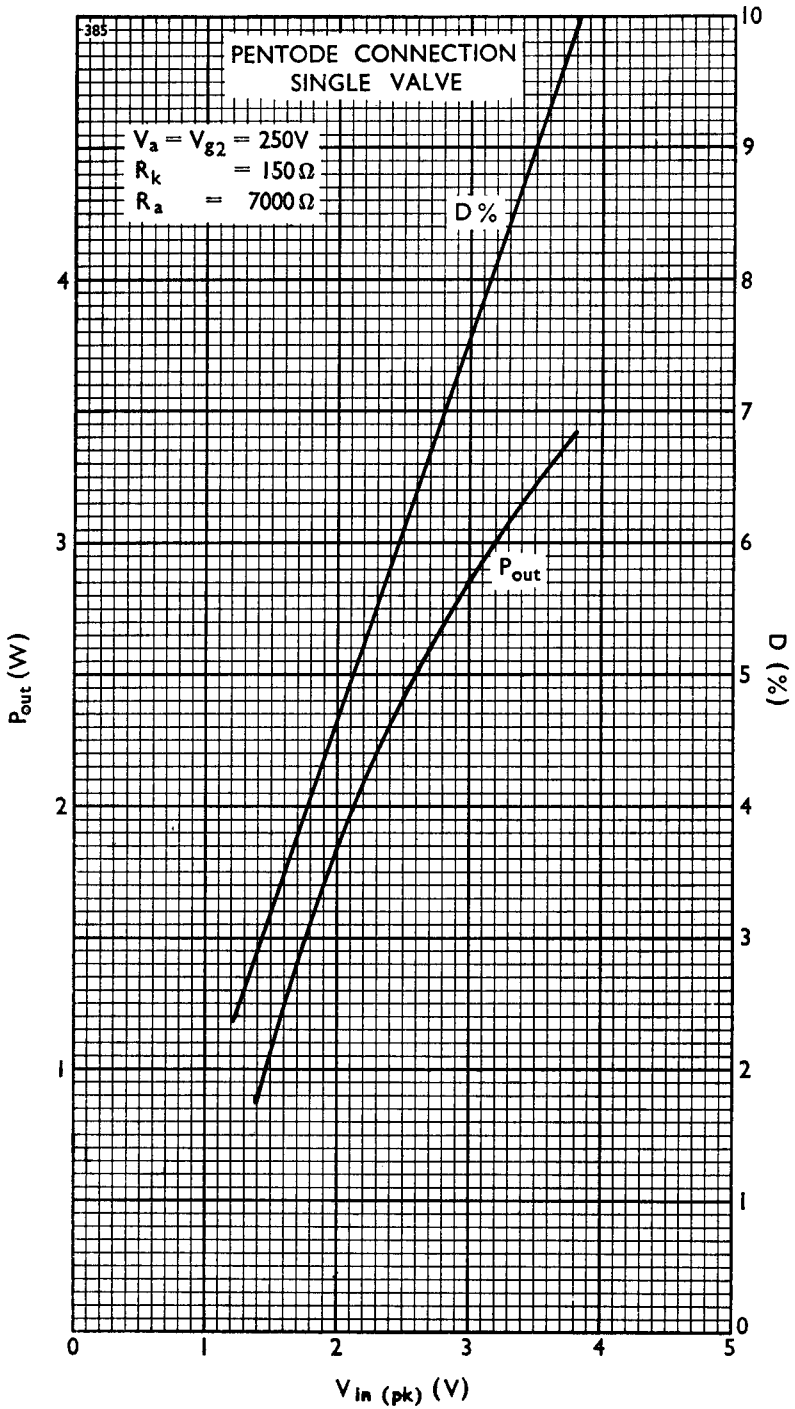


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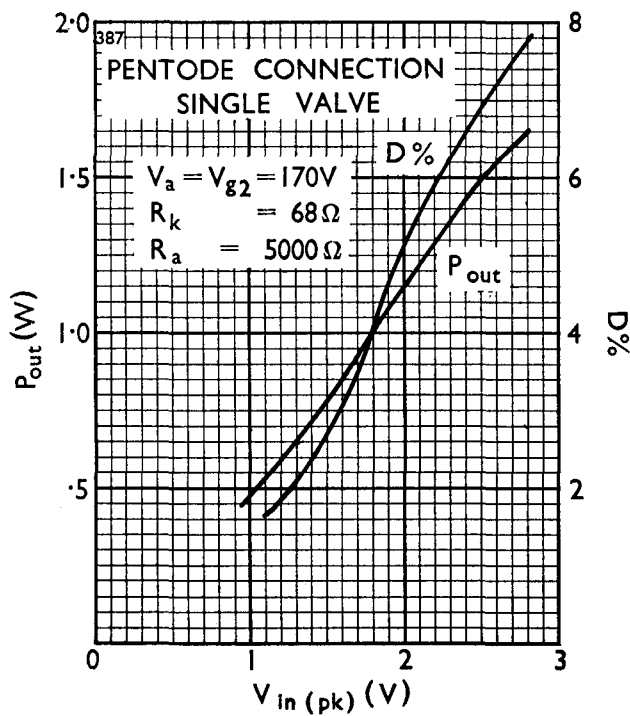
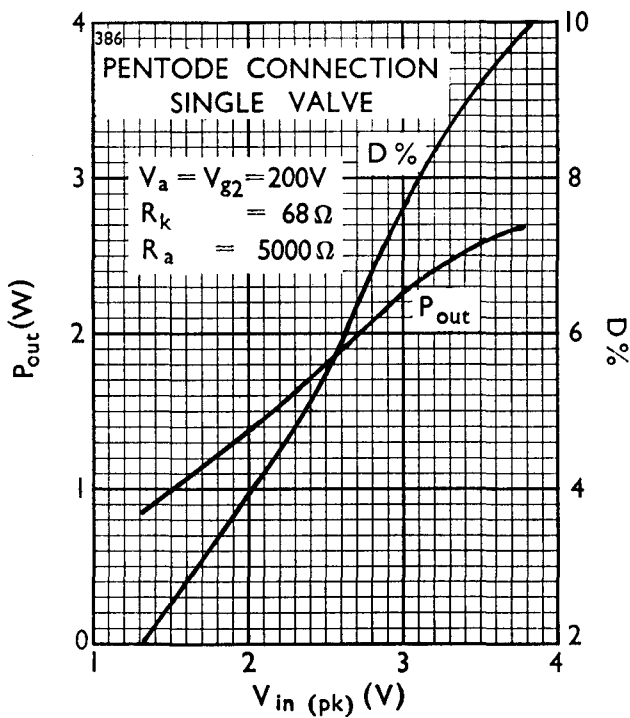








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