

# MAZDA

## 30F5

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### HIGH SLOPE SCREENED H.F. PENTODE

Indirectly heated—for series operation

#### GENERAL

The 30F5 is intended for use as a straight television pentode and is suitable for AC/DC series operation.

#### RATING

|                                                          |                 |      |
|----------------------------------------------------------|-----------------|------|
| Heater Current (amps)                                    | $I_h$           | 0.3  |
| Heater Voltage (volts)                                   | $V_h$           | 7.3  |
| Maximum Anode Voltage (volts)                            | $V_a(\max)$     | 250  |
| Maximum Screen Voltage (volts)                           | $V_{g2}(\max)$  | 250  |
| Maximum Anode Dissipation (watts)                        | $P_a(\max)$     | 3§   |
| Maximum Screen Dissipation (watts)                       | $P_{g2}(\max)$  | 1§   |
| Maximum Heater to Cathode Voltage (volts) (r.m.s.)       | $V_{h-k}(\max)$ | 200† |
| Maximum Resistance Control Grid to Cathode (k $\Omega$ ) | $R_{g-k}(\max)$ | 600‡ |
| Mutual Conductance (mA/V)                                | $g_m$           | 8.8* |
| Inner Amplification Factor                               | $\mu_{g1,g2}$   | 55*  |

\* At  $V_a = V_{g2} = 170$  volts.  $V_{g1} = -1.85$

§ With a grid cathode resistance not exceeding 10,000 ohms

† From Cathode to higher potential heater pin

‡ With maximum anode dissipation 2 watts, maximum screen dissipation 0.5 watts and assuming a common anode and screen decoupling resistance of not less than 2,200 ohms  $\pm 10\%$

#### INTER-ELECTRODE CAPACITANCES (pF)

|             |            | ‡      | §      |
|-------------|------------|--------|--------|
| Grid/Earth  | $c_{in}$   | 9.0    | 10.3   |
| Anode/Earth | $c_{out}$  | 4.4    | 5.7    |
| Anode/Grid  | $c_{g1-a}$ | 0.0073 | 0.0077 |

Inter-electrode Capacitances (continued overleaf)

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

‡ Inter-electrode capacitances with holder capacitance balanced out.

§ Total inter-electrode capacity including B9A ceramic holder without skirt or radial shield (Carr Fastener holder type 77/076).

DIMENSIONS

|                                 |               |
|---------------------------------|---------------|
| Maximum Overall Length (mm)     | 67.5          |
| Maximum Diameter (mm)           | 22.2          |
| Maximum Seated Height (mm)      | 6.5           |
| Approximate Nett Weight (ozs)   | $\frac{1}{2}$ |
| Approximate Packed Weight (ozs) | 1             |

MOUNTING POSITION—Unrestricted.TYPICAL OPERATION

|                                         |               |         |
|-----------------------------------------|---------------|---------|
| Anode Voltage (volts)                   | $V_a$         | 170     |
| Screen Voltage (volts)                  | $V_{g2}$      | 170     |
| Grid Bias Voltage (volts)               | $V_{g1}$      | -1.85   |
| Anode Current (mA)                      | $I_a$         | 10      |
| Screen Current (mA)                     | $I_{g2}$      | 2.6     |
| Mutual Conductance (mA/V)               | $g_m$         | 8.8     |
| Input Loss at 45 Mc/s (ohms)            | $r_{g1-k(w)}$ | 16,000* |
| Equivalent grid noise resistance (ohms) | $R_{eq}$      | 750     |

\* With grid circuit ONLY returned to pin 3

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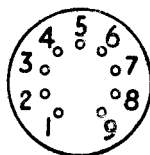
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BULB—Clear

BASE—Noval (B9A)



Viewed from Free End of Pins

## CONNECTIONS

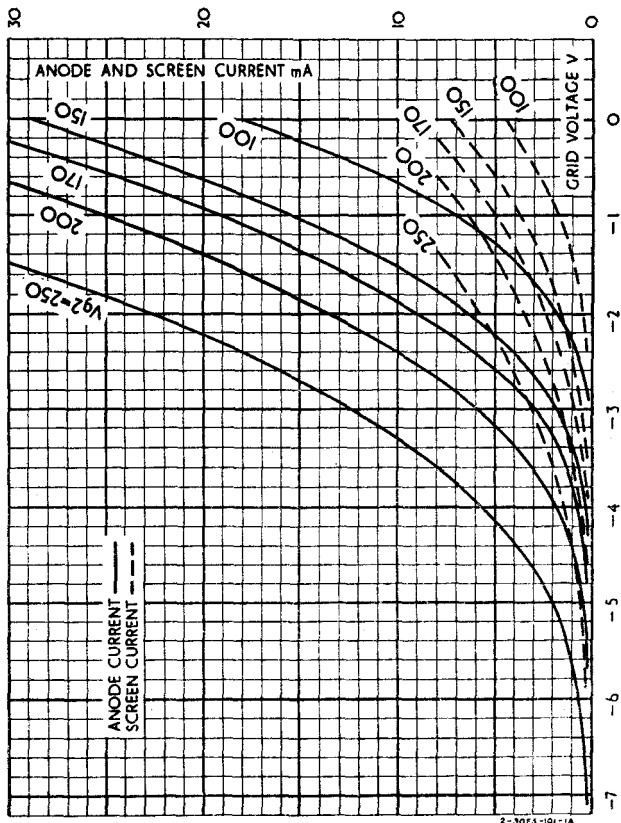
|       |                 |    |
|-------|-----------------|----|
| Pin 1 | Cathode         | k  |
| Pin 2 | Control Grid    | g1 |
| Pin 3 | Cathode         | k  |
| Pin 4 | Heater          | h  |
| Pin 5 | Heater          | h  |
| Pin 6 | Shield          | s  |
| Pin 7 | Anode           | a  |
| Pin 8 | Screen Grid     | g2 |
| Pin 9 | Suppressor Grid | g3 |

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AVERAGE CHARACTERISTIC CURVES:  $I_a, I_{g2}/V_g$   
 $V_a = 250V.$



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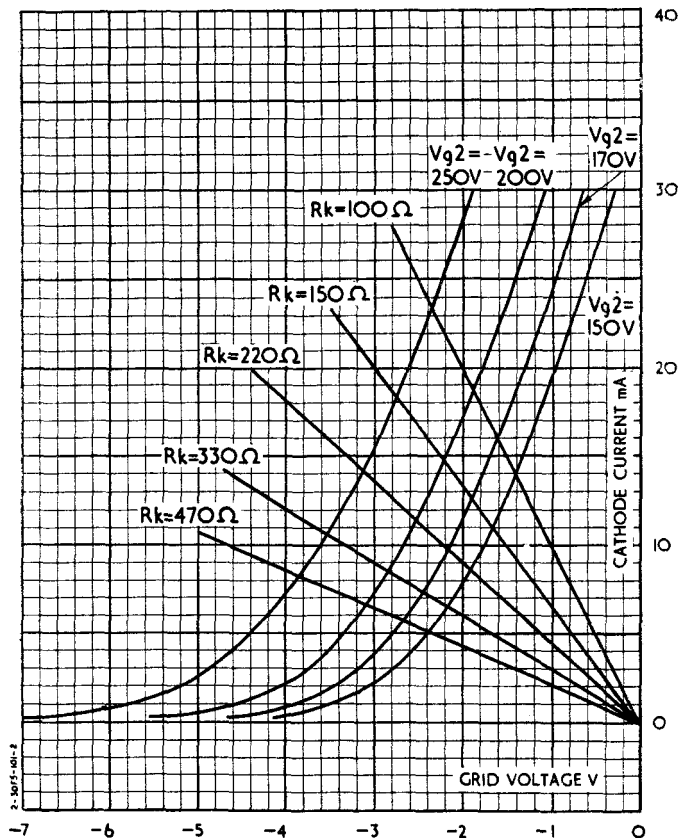
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## HIGH SLOPE SCREENED H.F. PENTODE Indirectly heated—for series operation

AVERAGE CHARACTERISTIC CURVES:  $I_k/V_g$

$V_a = 250V$ .

Screen to Anode Current Ratio = 26% (approx.)



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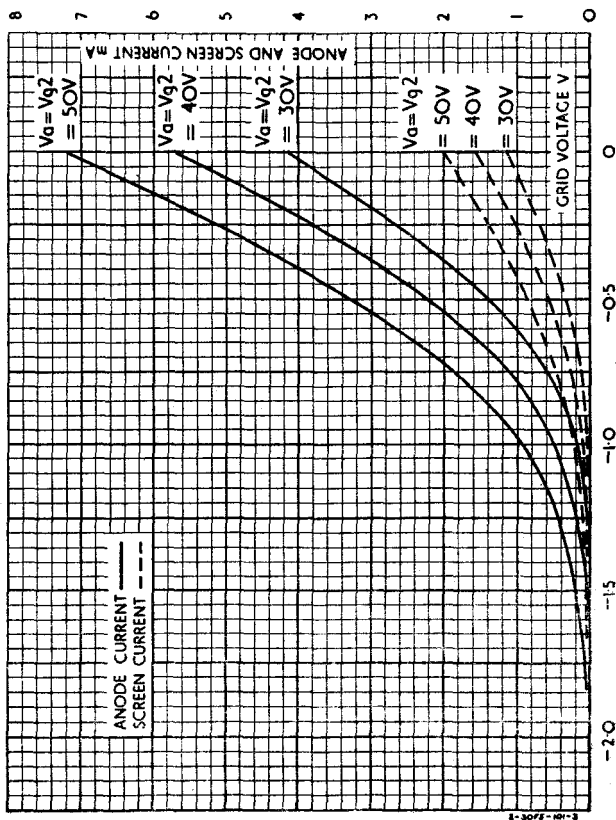
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AVERAGE CHARACTERISTIC CURVES:  $I_a, I_{g2}/V_g$ 

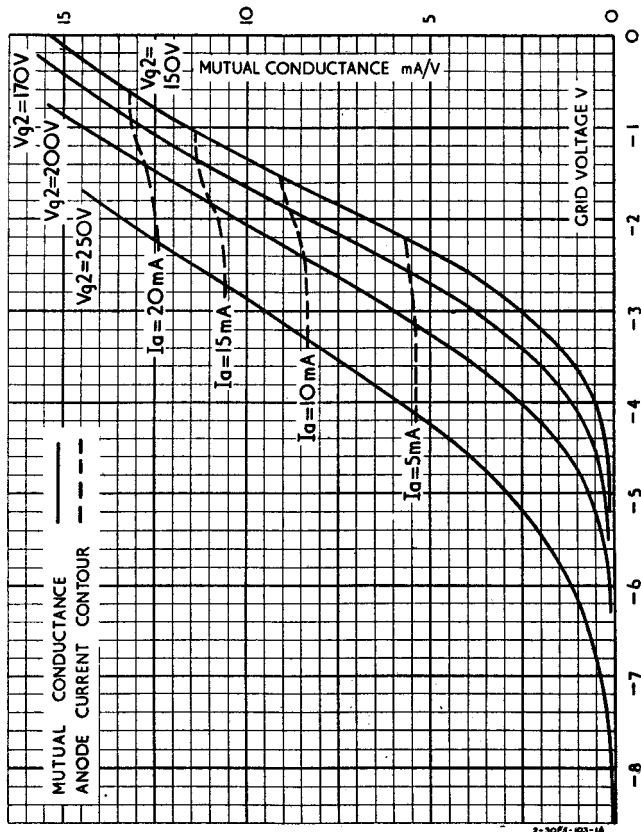
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AVERAGE CHARACTERISTIC CURVES:  $g_m/V_g$   
 $V_a = 250V.$



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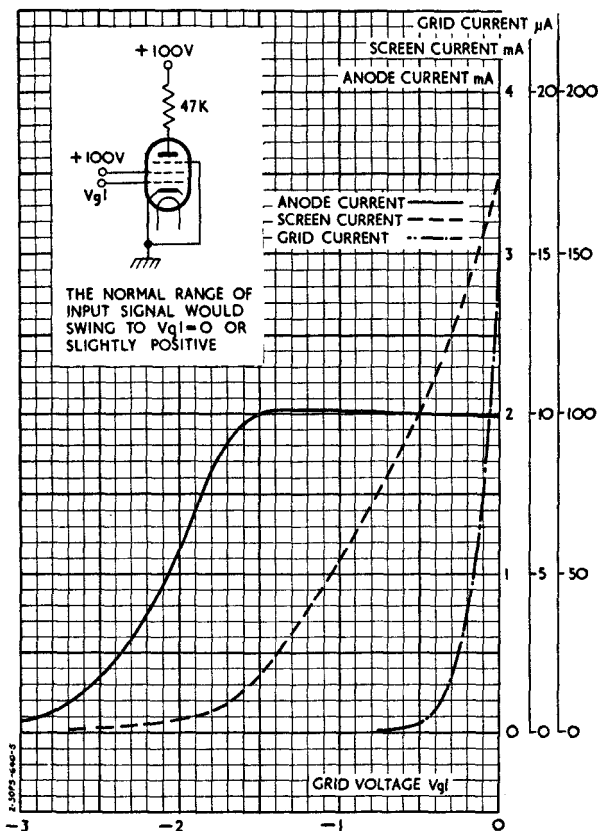
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# HIGH SLOPE SCREENED H.F. PENTODE Indirectly heated—for series operation

AVERAGE CHARACTERISTIC CURVES :  $I_a$ ,  $I_{g2}$ ,  $I_{g1}/V_g$   
Used as a limiter in a synchronising separator circuit.



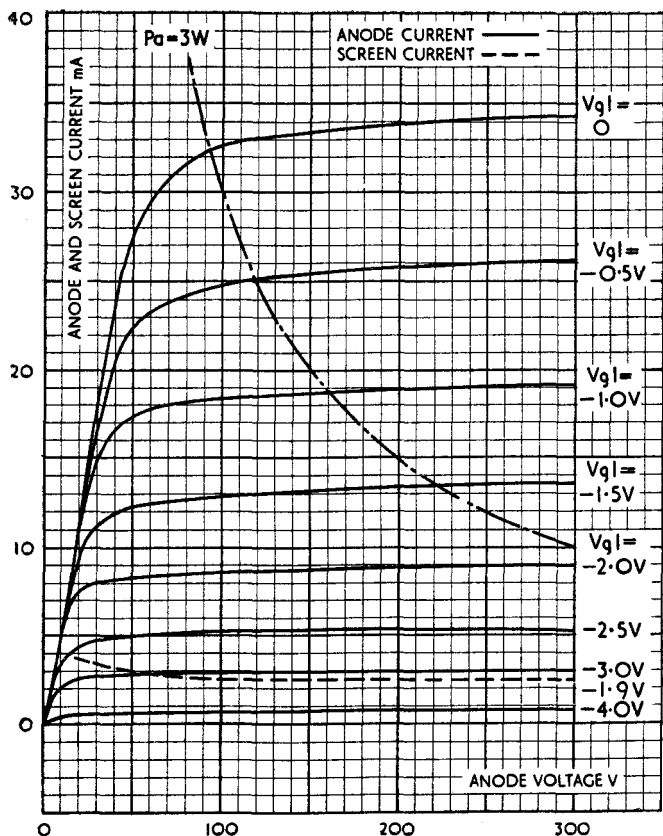
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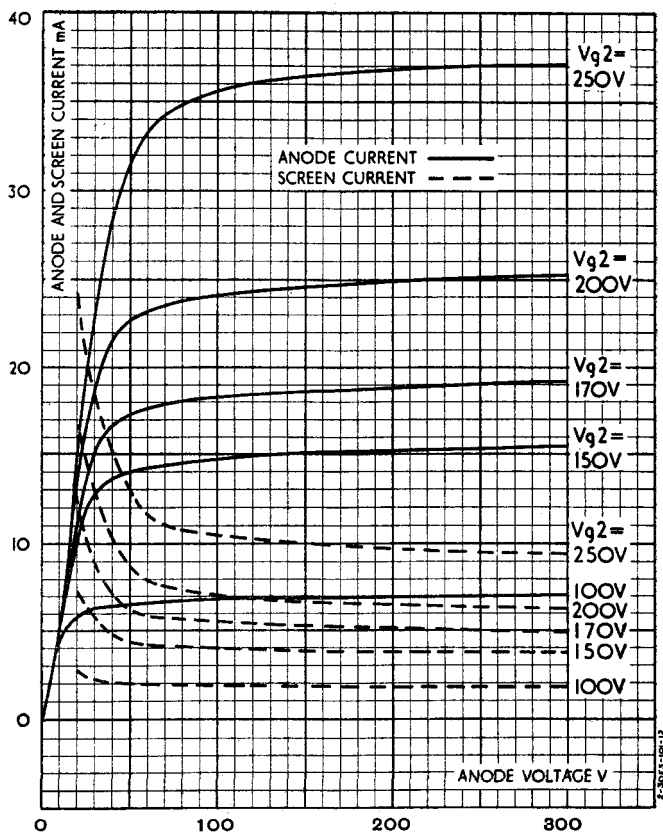
AVERAGE CHARACTERISTIC CURVES:  $I_a, I_{g2}/V_a$   
 $V_{g2} = 170V.$



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AVERAGE CHARACTERISTIC CURVES:  $I_a, I_{g2}/V_a$  $V_{g1} = -1.0V.$ 

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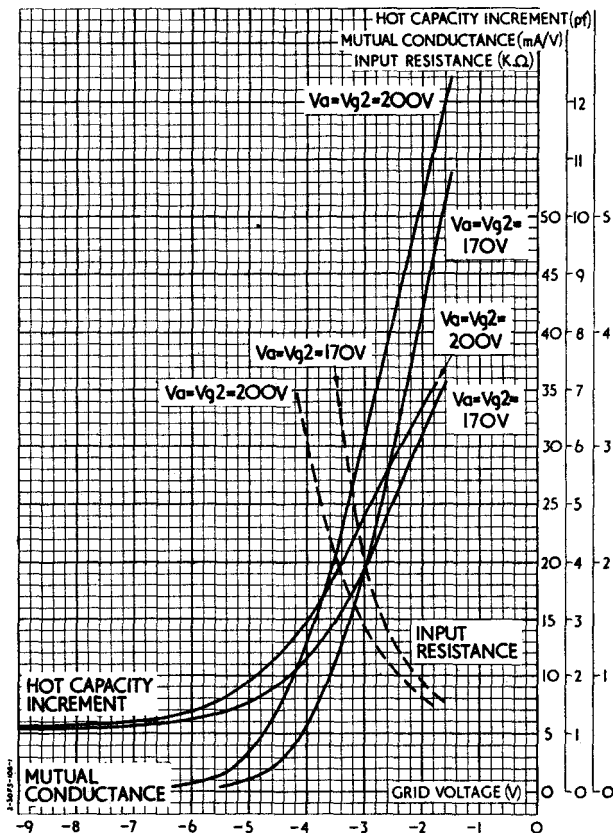
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## HIGH SLOPE SCREENED H.F. PENTODE Indirectly heated—for series operation

Average Characteristic Curves :  $r_{in}$ ,  $g_m$   $\delta c/V_g$

$f \approx 38$  Mc/s

See also "Test Circuit" overleaf.



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VALVE & CRT DIVISION

Issue 1/2

SIEMENS EDISON SWAN LIMITED

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TEST CIRCUIT

for

Average Characteristics  $r_{in}$ ,  $g_m$   $\delta c/V_g$

$f = 38 \text{ Mc/s.}$

