

# MAZDA

6.F.12

## HIGH SLOPE SCREENED R.F. PENTODE

Indirectly heated - for parallel operation

### RATING

Heater Voltage (volts)	$V_h$	6.3
Heater Current (amps)	$I_h$	0.3
Maximum Anode Voltage (volts)	$V_a(\max)$	250
Maximum Screen Voltage (volts)	$V_{g2}(\max)$	250
Mutual Conductance (mA/V)	$g_m$	* 7.5
Anode Impedance (megohm)	$r_a$	* 0.9
Inner $\mu$	$\mu_{g1g2}$	† 74
Maximum Anode Dissipation (watts)	$W_a(\max)$	† 2.5
Maximum Screen Dissipation (watts)	$W_{g2}(\max)$	† 0.8
Maximum Potential Heater/Cathode (volts DC)	$V_{h-k}(\max)$	150

\* Taken at  $V_a = V_{g2} = 250$  v;  $V_{g1} = -2$  v;  $I_a = 10$  mA

† i.e.  $\frac{\delta V_{g2}}{\delta V_{g1}}$  with  $I_a$  constant

† If used in a can at maximum rating the can must be matt black both internally and externally.

### INTER-ELECTRODE CAPACITANCES

		§	‡	†
Anode/Earth ( $\mu\text{F}$ )	$C_{out}$	3.2	4.4	4.6
Anode/Control Grid ( $\mu\text{F}$ )	$C_{a-g1}$	.0045	.006	.005
Control Grid/Earth ( $\mu\text{F}$ )	$C_{in}$	7.6	8.8	9.0

§ Measured with Benjamin E7G valveholder and cylindrical screen type 75/832, but with holder capacitance balanced out.

‡ Including capacitance of Benjamin E7G valveholder type 75/833 and cylindrical screen type 75/832.

† As ‡ but with additional perpendicular shield fitted between pins 2-3 and 6-7.

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

### DIMENSIONS

Maximum Overall Length (mm)	54
Maximum Diameter (mm)	19
Maximum Seated Height (mm)	47.5
Approximate Nett Weight (ozs)	1
Approximate Packed Weight (ozs)	2

MOUNTING POSITION - Unrestricted

6.F.12

**MAZDA**

6.F.12

**HIGH SLOPE SCREENED R.F. PENTODE**

Indirectly heated - for parallel operation

TYPICAL OPERATION

Anode Voltage (volts)	$V_a$	250	200
Screen Voltage (volts)	$V_{g2}$	250	200
Grid Bias Voltage (volts -ve)	$V_{g1}$	2.0	1.5
Anode Current (mA)	$I_a$	10.0	8.3
Screen Current (mA)	$I_{g2}$	2.5	2.1
Mutual Conductance (mA/V)	$g_m$	7.5	7.2
Input Working Capacity ( $\mu\text{F}$ )	$C_{in(w)}$	9.9	10.1
Change in Input Capacity ( $\mu\text{F}$ ) produced by biasing valve to 1 $\mu\text{A/V}$	$\Delta C_{in(w)}$	2.2	2.3
Self Bias Resistance (ohms)	$R_z$	160	145
Input Loss Resistance at 45 Mc/s (ohms)		8,900	8,200
Equivalent noise resistance required (ohms)	$R_{eq}$	1,100	1,000

Bulb ClearBASE B.7.G.

Viewed from free ends of pins

CONNEXIONS

Pin 1	Control Grid	$g1$
Pin 2	Cathode	$k$
Pin 3	Heater	$h$
Pin 4	Heater	$h$
Pin 5	Anode	$a$
Pin 6	Suppressor Grid	$g3$
Pin 7	Screen Grid	$g2$

May 1948

RADIO DIVISION

Issue 1/2

THE EDISON SWAN ELECTRIC COMPANY LTD.

**MAZDA**

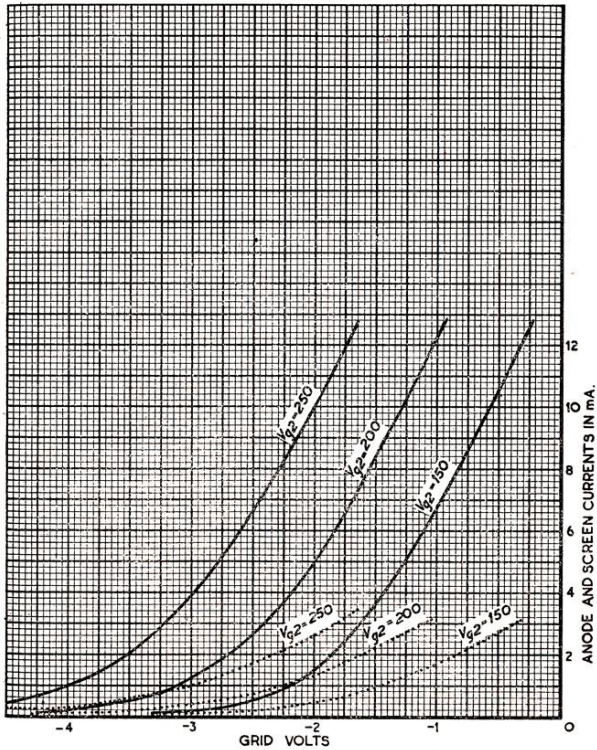
6.F.12

HIGH SLOPE SCREENED R.F. PENTODE  
Indirectly heated - for parallel operation

CHARACTERISTIC CURVES OF AVERAGE  
MAZDA VALVE 6F.12

Curves taken at  $V_g = 250V$ .

Key { — Anode Current  
      - - - Screen Current



May 1948

RADIO DIVISION

Issue 1/2

THE EDISON SWAN ELECTRIC COMPANY LTD.

6.F.12

6.F.12

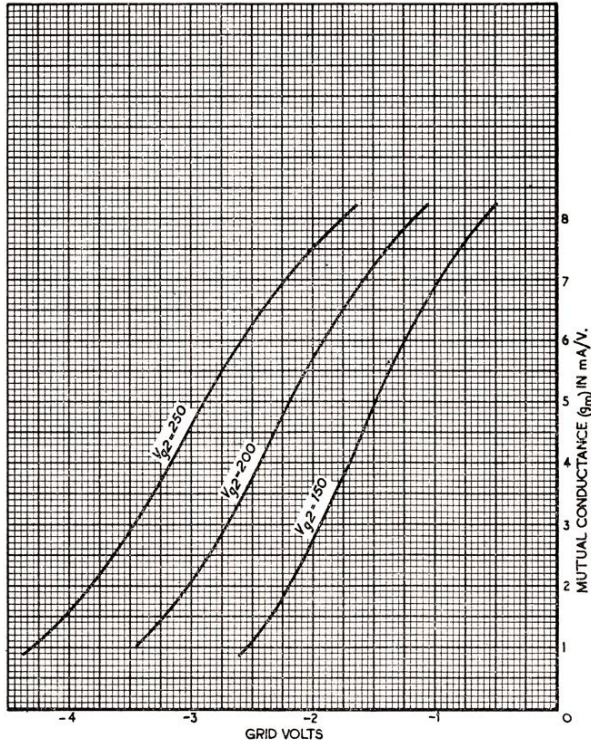
**MAZDA**

6.F.12

HIGH SLOPE SCREENED R.F. PENTODE  
Indirectly heated—for parallel operation

CHARACTERISTIC CURVES OF AVERAGE  
MAZDA VALVE 6F12

*Curves taken at  $V_b = 250V.$*



May 1948

RADIO DIVISION

Issue 1/2

THE EDISON SWAN ELECTRIC COMPANY LTD.

6.F.12

# MAZDA

6.F.12

## HIGH SLOPE SCREENED R.F. PENTODE

Indirectly heated—for parallel operation

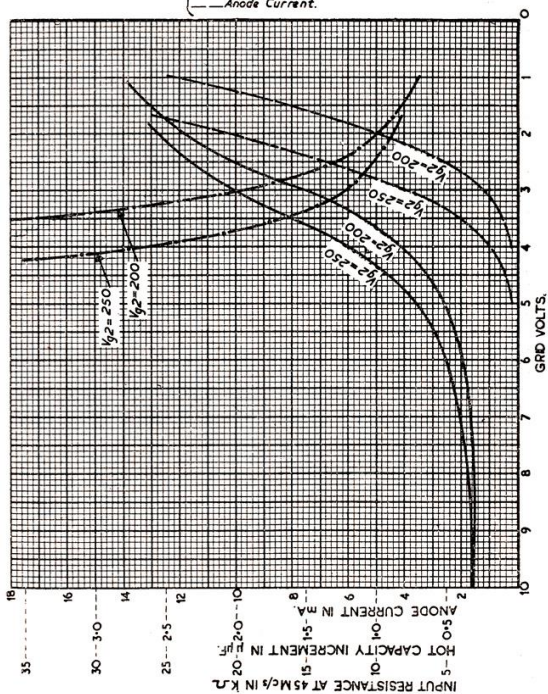
### CHARACTERISTIC CURVES OF AVERAGE

### MAZDA VALVE 6F12

Curves taken at  $V_g = 250V$ ,  $V_{g3} = 0V$ ,  $f = 45 Mc/s$ .

Key

- Input Resistance.
- Hot Capacity Increment.
- Anode Current.



May 1948

RADIO DIVISION

Issue 1/2

THE EDISON SWAN ELECTRIC COMPANY LTD.



6. F. 12

**MAZDA**

6. F. 12

**HIGH SLOPE SCREENED R.F. PENTODE**

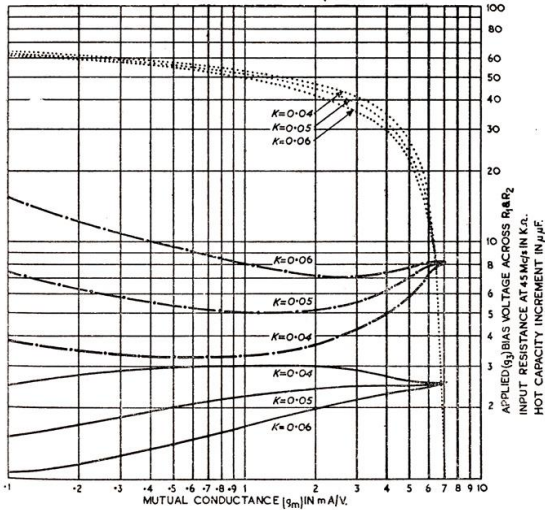
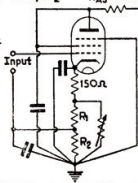
Indirectly heated - for parallel operation

**CHARACTERISTIC CURVES OF AVERAGE  
MAZDA VALVE 6F12**

Curves taken at  $V_2 = V_3 = 200V$  (initial),  $V_1 = 1.5V$ ,  $V_3$  at Earth,  $f = 45Mc/s$ .

Key:   
 ..... Applied (3) Bias Voltage across  $R_1$  &  $R_2$   $R_{A2} = 4800\Omega$   $+250V$   
 — Input Resistance.  
 - - - Hot Capacity Increment.

Note:-  $K = \frac{R_1}{R_1 + R_2}$



May 1948

RADIO DIVISION

Issue 1/2

THE EDISON SWAN ELECTRIC COMPANY LTD.

6.F.12

**MAZDA**

6.F.12

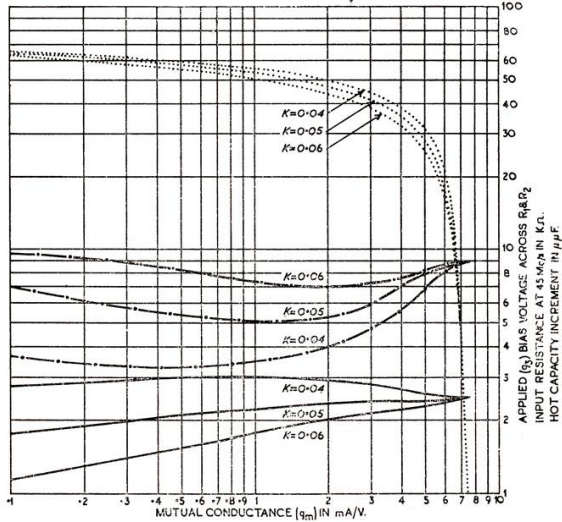
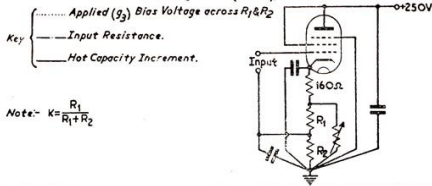
**HIGH SLOPE SCREENED R.F. PENTODE**

Indirectly heated - for parallel operation

CHARACTERISTIC CURVES OF AVERAGE

**MAZDA VALVE 6F12**

Curves taken at  $I_b = 10 \text{ mA}$  (initial),  $f = 45 \text{ Mc/s}$ .



May 1948

RADIO DIVISION

Issue 1/2

THE EDISON SWAN ELECTRIC COMPANY LTD.

