

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 μ	μ_{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

$$q \quad 1.e. \quad \frac{\partial V_{g2}}{\partial V_{g1}} \quad \text{with } I_a \text{ constant}$$

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

INTER-ELECTRODE CAPACITANCES

		$\S$	J	$\ddagger$
Anode/Earth (μF)	C_{out}	3.2	4.4	4.6
Anode/Control Grid (μF)	C_{a-g1}	.0045	.006	.006
Control Grid/Earth (μF)	C_{in}	7.6	8.8	9.0

$\S$ Measured with Benjamin B7G valveholder and cylindrical screen type 75/832, but with holder capacitance balanced out.

J Including capacitance of Benjamin B7G valveholder type 75/833 and cylindrical screen type 75/832.

$\ddagger$ As J 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

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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 (μF)	$C_{in(w)}$	9.9	10.1
Change in Input Capacity (μF) produced by biasing valve to 1 $\mu A/V$	$\Delta C_{in(w)}$	2.2	2.3
Self Bias Resistance (ohms)	R_k	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	g_1
Pin 2	Cathode	k
Pin 3	Heater	h
Pin 4	Heater	h
Pin 5	Anode	a
Pin 6	Suppressor Grid	g_3
Pin 7	Screen Grid	g_2

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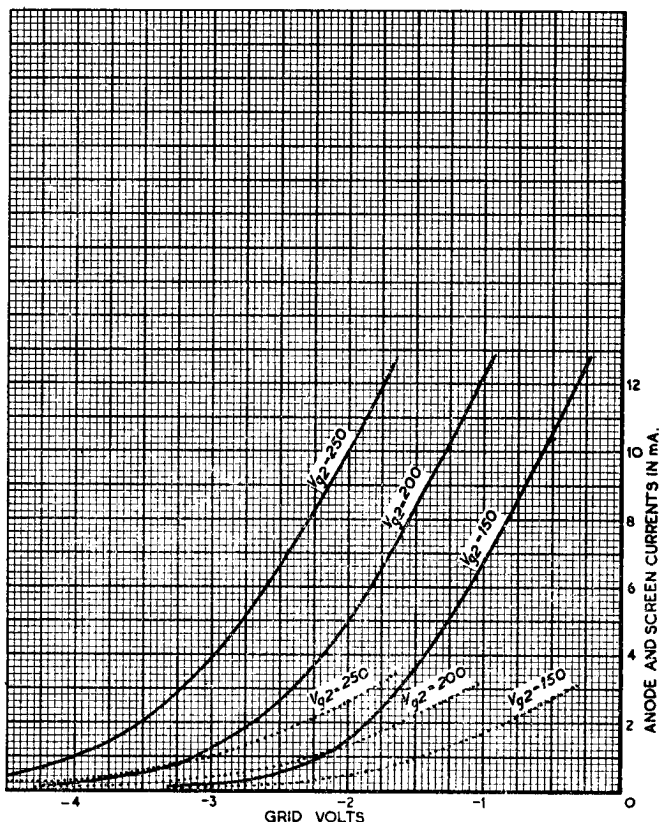
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CHARACTERISTIC CURVES OF AVERAGE
MAZDA VALVE 6F12

Curves taken at $V_g = 250V$.

Key { — Anode Current
 Screen Current



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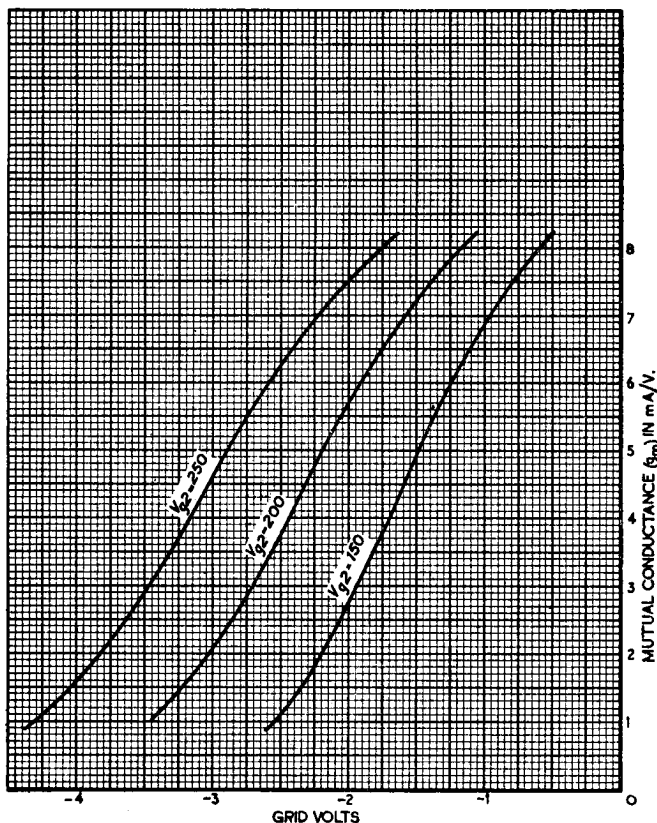
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CHARACTERISTIC CURVES OF AVERAGE

MAZDA VALVE 6F12

Curves taken at $V_p = 250V$.



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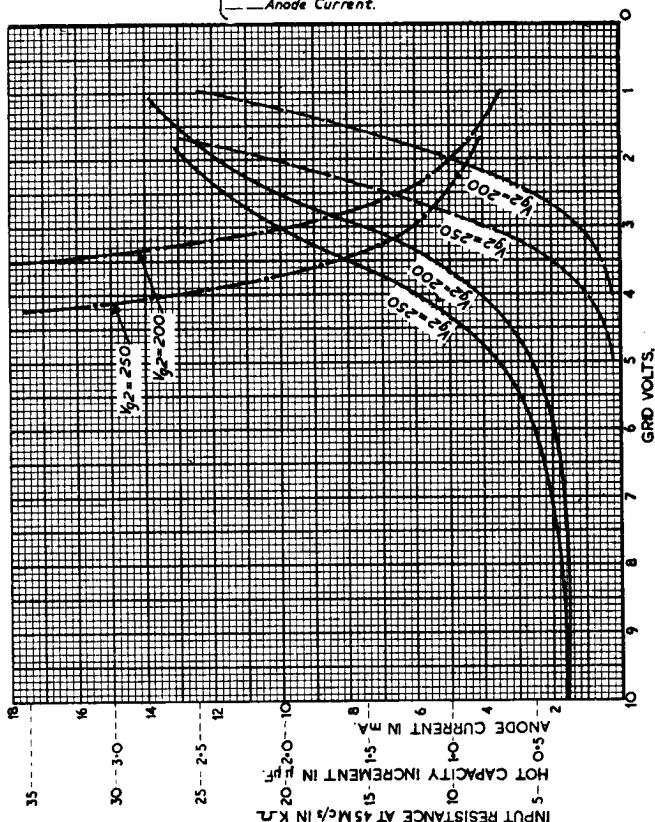
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CHARACTERISTIC CURVES OF AVERAGE MAZDA VALVE 6F12

Curves taken at $V_0 = 250V$, $V_{g3} = 0V$, $f = 45Mc/s$.

Key {
— Input Resistance.
— Hot Capacity Increment.
— Anode Current.



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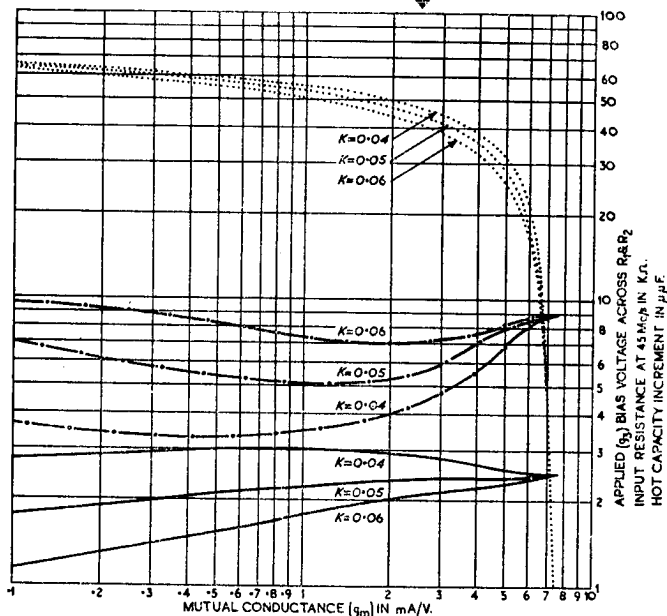
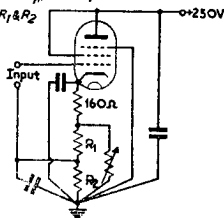
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CHARACTERISTIC CURVES OF AVERAGE MAZDA VALVE 6F12

Curves taken at $I_0 = 10 \text{ mA}$ (initial), $f = 45 \text{ Mc/s.}$

Key: — Applied (g_2) Bias Voltage across R_1 & R_2
— Input Resistance.
— Hot Capacity Increment.

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



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CHARACTERISTIC CURVES OF AVERAGE MAZDA VALVE 6F12

Curves taken at $V_b = V_{g2} = 200V$ (initial), $V_{g1} = 1.5V$, V_{g3} at Earth, $f = 45Mc/s$.

Key {
 Applied (V_{g3}) Bias Voltage across R_1 & R_2
 — Input Resistance.
 — Hot Capacity Increment.

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

