

6F18

VARIABLE MU H.F. PENTODE

Indirectly heated—for parallel operation



GENERAL

The 6F18 is a variable-mu HF. Pentode intended for use in AM/FM Receivers.

RATING

Heater Voltage	V_h	6.3	V
Heater Current	I_h	0.2	A
Maximum Anode Voltage	$V_a(\max)$	250	V
Maximum Screen Voltage	$V_{g2}(\max)$	250	V
Maximum Anode Dissipation	$P_a(\max)$	2.25	W
Maximum Screen Dissipation	$P_{g2}(\max)$	0.5	W
Maximum Heater to Cathode Voltage (D.C.)	$V_{h-k}(\max)$	150	V

INTER-ELECTRODE CAPACITANCES (pF)

		*	**	***	
Grid 1/Earth	c_{in}	5.0	5.2	6.2	←
Anode/Earth	c_{out}	4.3	4.5	4.5	←
Anode/Grid 1	c_{a-g1}	0.0019	0.0019	0.0031	←
Anode/Grid 1	c_{a-g1}	0.0017†	0.0017†	0.0029†	←
Anode/Grid 2	c_{a-g2}	0.12	0.23	0.41	←
Anode/Grid 3	c_{a-g3}	0.54	0.56	0.58	←
Grid 1/Grid 2	c_{g1-g2}	1.6	1.6	1.6	←
Grid 1/Grid 3	c_{g1-g3}	0.055	0.064	0.072	←

* Inter-electrode capacitances in fully shielded socket, without can.

** Inter-electrode capacitances with holder capacitance balanced out (using holder quoted below).

*** Total inter-electrode capacitances including B9A ceramic holder without skirt or radial shield (Plessey holder type CP180014/1). The total anode to grid capacitance (in can) may be reduced from 0.0029pF to 0.0019pF by the use of a close fitting vertical shield placed beneath the holder, between pins 1 and 9, 4 and 5.

† In can.

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

Indicates a change ←

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DIMENSIONS

Maximum Overall length	56.0 mm
Maximum Diameter	22.2 mm
Maximum Seated Height	49.0 mm
Approximate Nett Weight	$\frac{1}{2}$ ozs
Approximate Packed Weight	$\frac{3}{4}$ ozs

MOUNTING POSITION—UnrestrictedTYPICAL OPERATION

Anode Voltage	V_a	175	175	V
Screen Voltage	V_{g2}	100	175	V
Grid Bias Voltage	V_{g1}	-1.3		V
Anode Current	I_a	12.0		mA
Screen Current	I_{g2}	3.5		mA
Mutual Conductance	g_m	4.4		mA/V
Valve Anode Resistance ($\delta V_a / \delta I_a$)	r_a	400		k Ω
Bias to give mutual conductance of 100 μ A/V			-19.5	V
Input Capacity working (Hot)	$C_{in(w)}$	7.0**		pF ←
Input Capacity change to cut-off	ΔC	1.5**		pF ←
Input Loss at 38 Mc/s, cathode pins strapped		21		k Ω ←

** Inter-electrode capacitances with holder capacitance balanced out (using Plessey holder type CP180014/1).

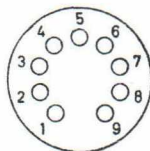
BULB—Clear

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BASE—Noval (B9A)



View 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	Internal Shield	s
Pin 7	Anode	a
Pin 8	Screen Grid	g2
Pin 9	Suppressor Grid	g3

NOTE

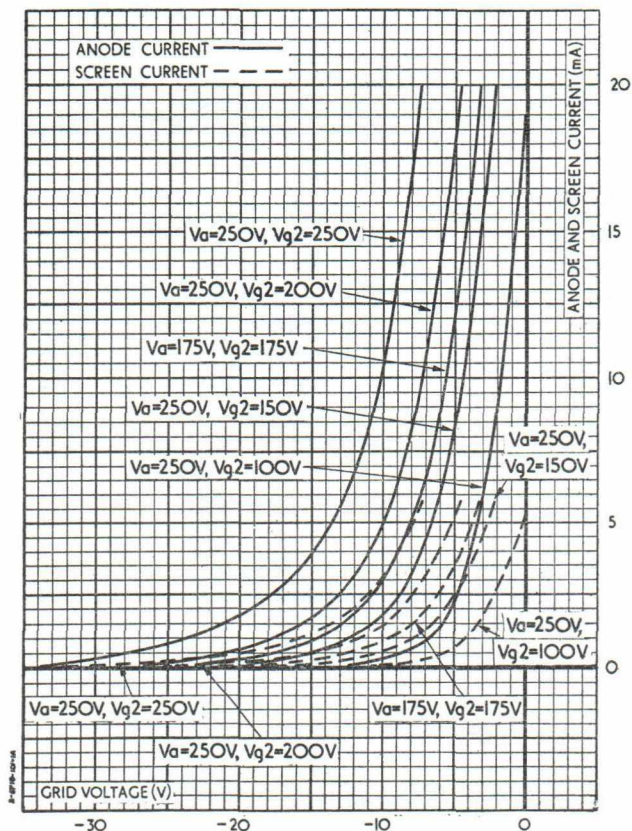
If only one cathode pin is required it is recommended that pin 3 be used.

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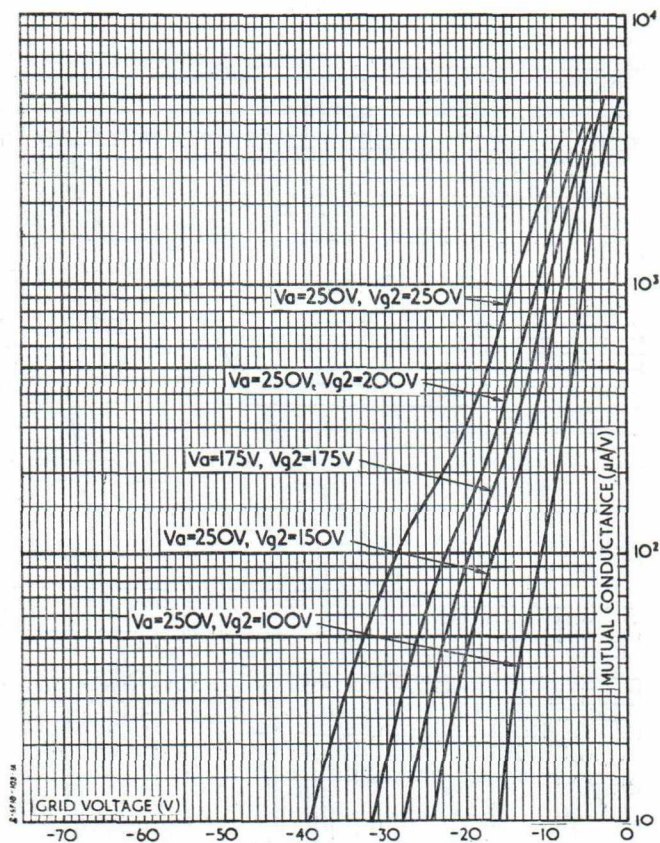
AVERAGE CHARACTERISTIC CURVES : $I_a, I_{g2}/V_{g1}$ 

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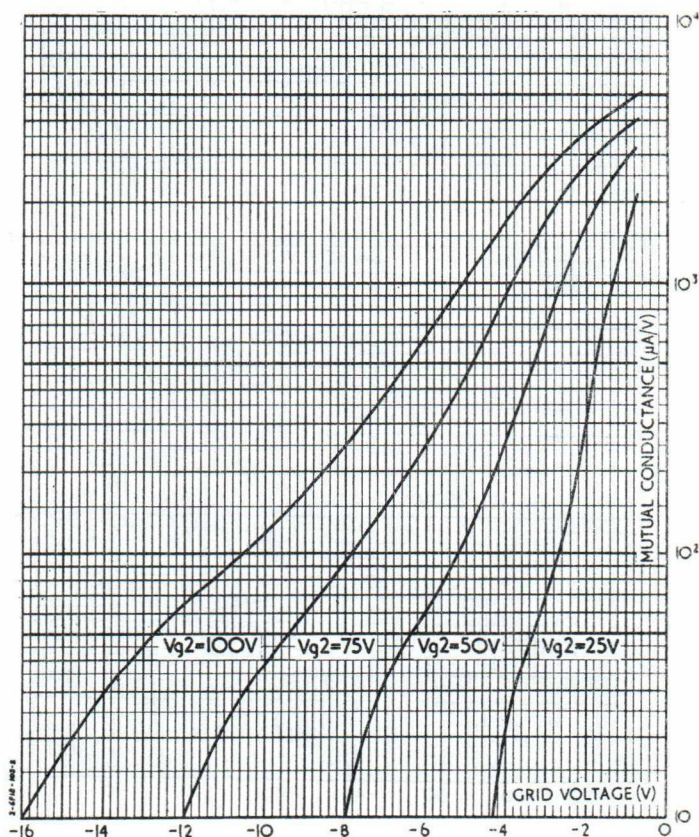
AVERAGE CHARACTERISTIC CURVES $\frac{I_g}{V_{g1}}$



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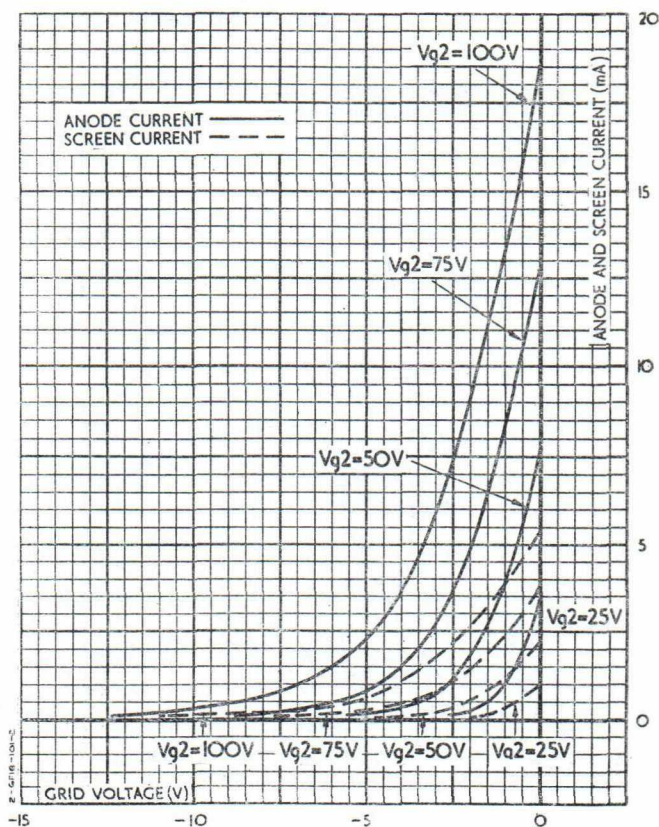
AVERAGE CHARACTERISTIC CURVES : g_m/V_{g1} $V_a = 175V.$ 

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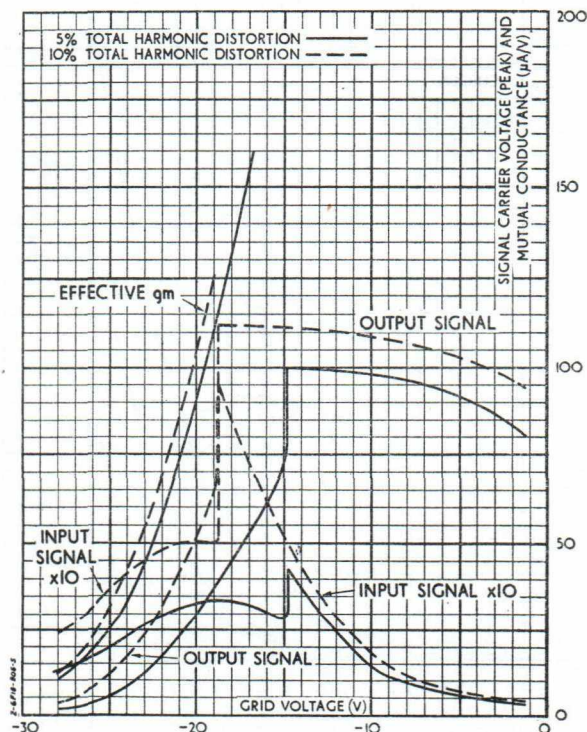
AVERAGE CHARACTERISTIC CURVES : $I_a, I_{g2}/V_{g1}$
 $V_a = 175V.$



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AVERAGE CHARACTERISTIC CURVES : $V_{sig(pk)} \cdot g_m / V_{g1}$ Initially : $V_a = 175V$, $V_{g2} = 100V$ (Rising), $I_a = 12.0mA$, $I_{g2} = 3.5mA$, $V_{g1} = -1.3V$, $R_{g2} = 22k\Omega$, $Z_L = 100k\Omega$, Mod. = 60%

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AVERAGE CHARACTERISTIC CURVES : $V_{sig(pk)} \cdot g_m / V_{g1}$

Initially : $V_{HT} = 250V.$, $R_a = 6.8k\Omega$, $R_{g2} = 39k\Omega$,

$I_a = 12.0mA.$, $I_{g2} = 3.5mA.$, $V_{g1} = -1.85V.$,

$Z_L = 100k\Omega$, Mod. = 60%

