

R.F. PENTODE

Pentode with variable transconductance intended for use as R.F. or I.F. amplifier.

QUICK REFERENCE DATA

Anode current	I_a	12 mA
Transconductance	S	4.4 mA/V
Amplification factor	$\mu_{g_2g_1}$	21
Internal resistance	R_i	400 k Ω

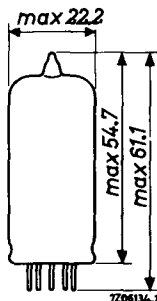
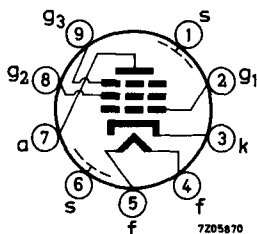
HEATING: Indirect by A.C. or D.C.; series supply

Heater current	I_f	100 mA
Heater voltage	V_f	12.6 V

DIMENSIONS AND CONNECTIONS

Base: Noval

Dimensions in mm



CAPACITANCES

Anode to all except grid No.1	$C_{a(g_1)}$	5.1 pF
Grid No.1 to all except anode	$C_{g_1(a)}$	5.5 pF
Anode to grid No.1	C_{ag_1}	max. 0.002 pF
Grid No.1 to heater	C_{g_1f}	0.05 pF

TYPICAL CHARACTERISTICS

Anode voltage	V_a	170	V
Grid No.2 voltage	V_{g2}	100	V
Grid No.3 voltage	V_{g3}	0	V
Anode current	I_a	12	mA
Grid No.1 voltage	V_{g1}	-1.2	V ¹⁾
Grid No.2 current	I_{g2}	4.4	mA
Transconductance	S	4.4	mA/V
Internal resistance	R_i	0.4	MΩ
Amplification factor	μ_{g2g1}	21	

OPERATING CHARACTERISTICS

Anode voltage, supply voltage	$V_a = V_b$	200	170	V
Grid No.3 voltage	V_{g3}	0	0	V
Grid No.2 resistor	R_{g2}	24	15	kΩ
Cathode resistor	R_k	130	130	Ω
Grid No.1 voltage	V_{g1}	-1.95 -20	-1.95 -20	V
Anode current	I_a	11.1 -	11.0 -	mA
Grid No.2 current	I_{g2}	3.8 -	3.9 -	mA
Transconductance	S	3.85 0.16	3.8 0.11	mA/V
Internal resistance	R_i	550 -	450 -	kΩ
Equivalent noise resistance	R_{eq}	4.2 -	4.5 -	kΩ
Input conductance $f = 50$ MHz	g	102 -	102 -	μA/V

¹⁾ In this case control grid current may occur. If this is not permissible, the negative grid bias should be increased to a value of 1.5 V at least.

TYPICAL CHARACTERISTICS AND OPERATING CHARACTERISTICS

(continued)

Anode voltage, supply voltage	$V_a = V_b$	100	100	V
Grid No.3 voltage	V_{g3}	0	0	V
Grid No.2 resistor	R_{g2}	15	0	k Ω
Cathode resistor	R_k	130	160	Ω
Grid No.1 voltage	V_{g1}	-1.05 -10	-1.9 -10	V
Anode current	I_a	6.0 -	8.6 -	mA
Grid No.2 current	I_{g2}	2.1 -	3.1 -	mA
Transconductance	S	3.2 0.15	3.3 0.16	mA/V
Internal resistance	R_i	475 -	300 -	k Ω
Equivalent noise resistance	R_{eq}	3.5 -	4.7 -	k Ω
Input conductance f = 50 MHz	g	120 -	102 -	$\mu A/V$

LIMITING VALUES (Design centre rating system)

Anode voltage	V_{a0}	max. 550	V
	V_a	max. 250	V
Anode dissipation	W_a	max. 2.25	W
Grid No.2 voltage	V_{g20}	max. 550	V
	V_{g2}	max. 250	V
Grid No.2 dissipation	W_{g2}	max. 0.45	W
Cathode current	I_k	max. 16.5	mA
Grid No.1 resistor	R_{g1}	max. 3	M Ω
Grid No.3 resistor	R_{g3}	max. 10	k Ω
Cathode to heater voltage	V_{kf}	max. 150	V

PHILIPS

Data handbook



**Electronic
components
and materials**

UF89

page	sheet	date
1	1	1969.01
2	2	1969.01
3	3	1969.01
4	FP	1999.07.29