

A.F. OUTPUT PENTODE

Pentode intended for use as A.F. power amplifier.

QUICK REFERENCE DATA		
Anode current	I_a	100 mA
Transconductance	S	12.5 mA/V
Amplification factor	$\mu_{g_2g_1}$	11
Output power, class B		100 W

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

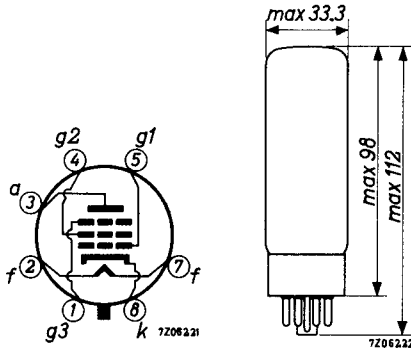
Heater voltage	V_f	6.3 V
Heater current	I_f	1.5 A

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Octal

Socket: 5903/13



CAPACITANCES

Anode to all except grid No.1	$C_{a(g_1)}$	8.4	pF
Grid No.1 to all except anode	$C_{g_1(a)}$	15.2	pF
Anode to grid No.1	C_{ag_1}	max. 1.1	pF
Grid No.1 to heater	C_{g_1f}	max. 1.0	pF
Cathode to heater	C_{kf}	10	pF

OPERATING CHARACTERISTICS

Class A

Supply voltage	V_b	265	265	V
Anode voltage	V_a	250	250	V
Grid No.2 series resistor	R_{g_2}	2	0	k Ω
Grid No.3 voltage	V_{g_3}	0	0	V
Grid No.1 voltage	V_{g_1}	-14.5	-13.5	V
Anode current	I_a	70	100	mA
Grid No.2 current	I_{g_2}	10	14.9	mA
Transconductance	S	11	12.5	mA/V
Amplification factor	$\mu_{g_2g_1}$	11	11	
Internal resistance	R_i	20	17	k Ω
Load resistance	$R_{a\sim}$	3.0	2.0	k Ω
Grid No.1 driving voltage	V_i	9.3	8.7	V _{RMS}
Output power	W_o	8	11	W
Distortion	d_{tot}	10	10	%
Grid No.1 driving voltage for $W_o = 50$ mW	V_i	0.65	0.5	V _{RMS}

OPERATING CHARACTERISTICS

Class B, two tubes in push-pull

Common grid No.2 series resistor (non decoupled)	R_{g2}	1000			470			Ω
Grid No.1 voltage	V_{g1}	-38			-32			V
Grid No.3 voltage	V_{g3}	0			0			V
Grid No.1 driving voltage	V_i	0 27 27			0 22.7 22.7			V_{RMS}
Load resistance	$R_{aa\sim}$	-	3.4	4.0	-	2.8	3.8	$k\Omega$
Supply voltage	V_b	425	425	400	375	375	350	V
Anode voltage	V_a	420	400	375	370	350	325	V
Anode current	I_a	2x30	2x120	2x100	2x35	2x120	2x93	mA
Grid No.2 current	I_{g2}	2x4.4	2x25	2x25	2x4.7	2x25	2x25	mA
Output power	W_o	0	55	45	0	44	36	W
Distortion	d_{tot}	-	5	6	-	5	6	%

Common grid No.2 series resistor (non decoupled)	R_{g2}	750			750			Ω
Grid No.1 voltage	V_{g1}	-36			-39			V
Grid No.3 voltage	V_{g3}	0			0			V
Grid No.1 driving voltage	V_i	0 25.8 25.8			0 23.4 23.4			V_{RMS}
Load resistance	$R_{aa\sim}$	-	4	5	-	11	11	$k\Omega$
Anode supply voltage	V_{ba}	500	500	475	800	800	750	V
Anode voltage	V_a	495	475	450	795	775	725	V
Grid No.2 supply voltage	V_{bg2}	400	400	375	400	400	375	V
Anode current	I_a	2x30	2x125	2x102	2x25	2x91	2x84	mA
Grid No.2 current	I_{g2}	2x4	2x25	2x25	2x3	2x19	2x19	mA
Output power	W_o	0	70	58	0	100	90	W
Distortion	d_{tot}	-	5	6	-	5	6	%

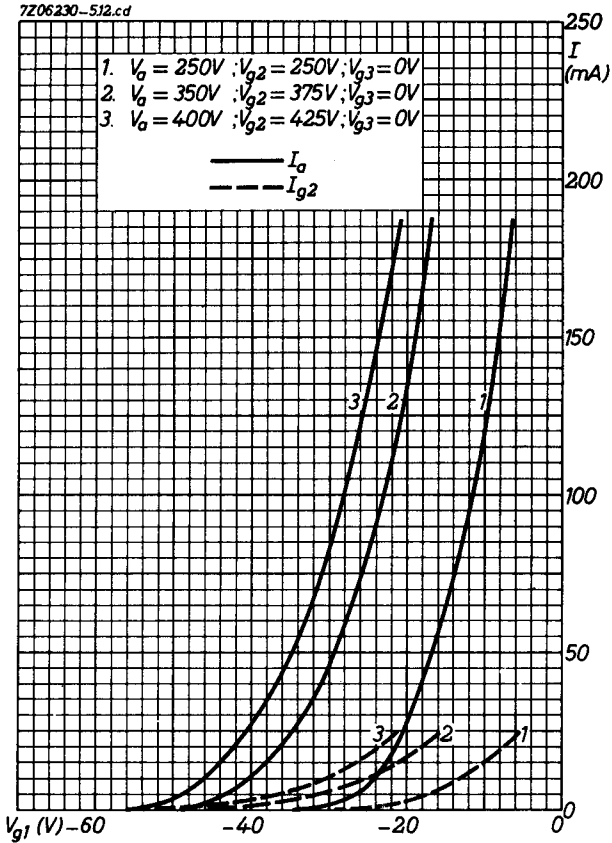
OPERATING CHARACTERISTICS

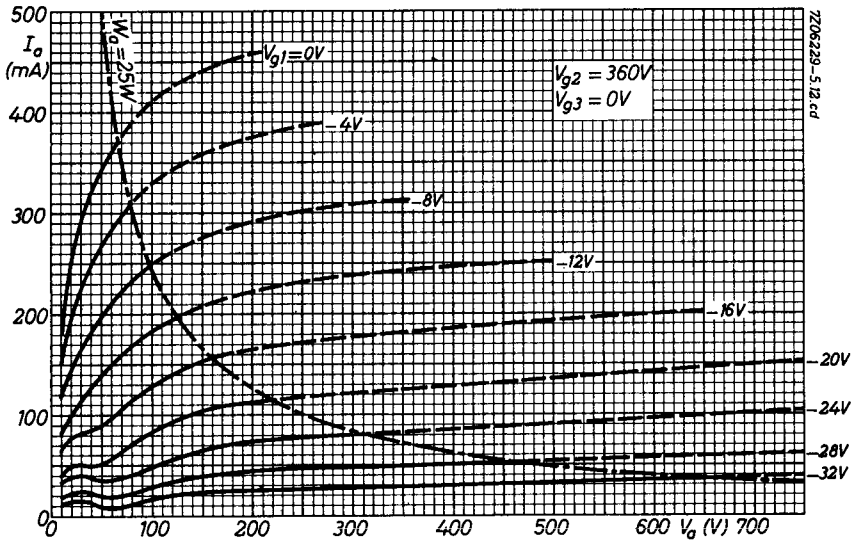
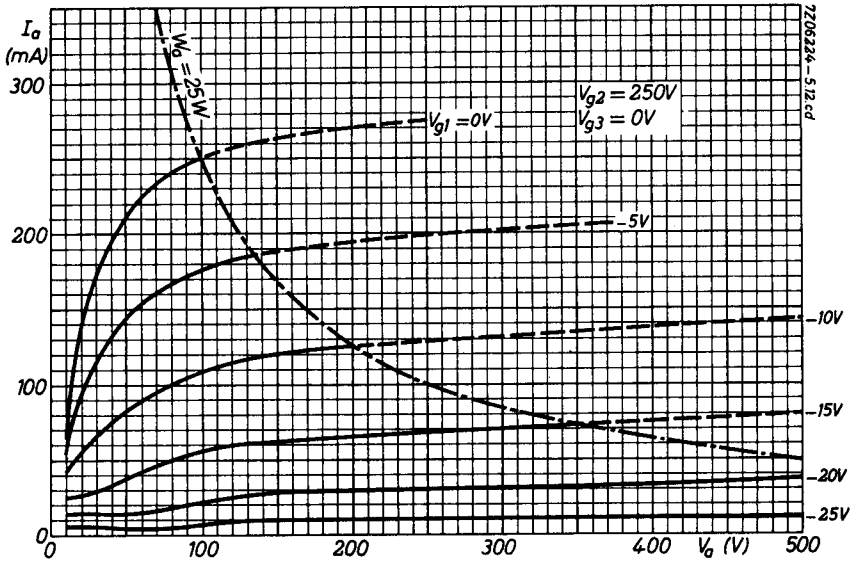
Class AB, two tubes in push-pull

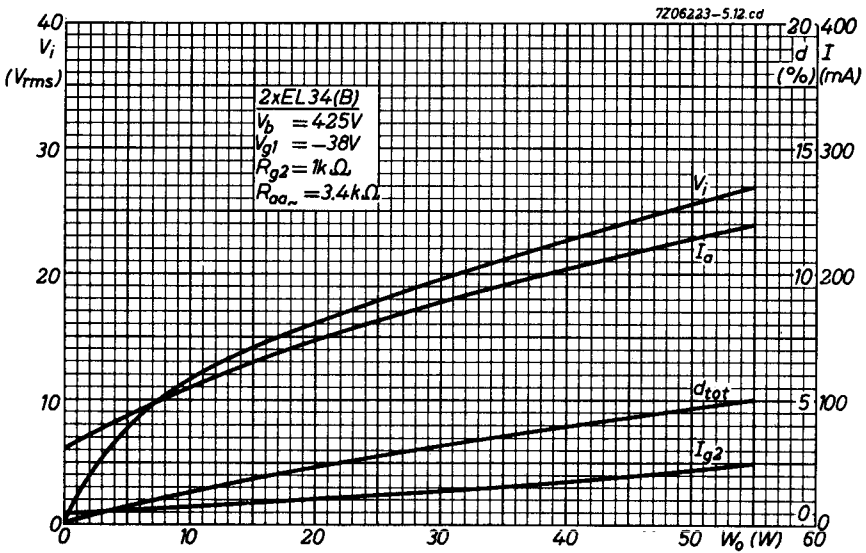
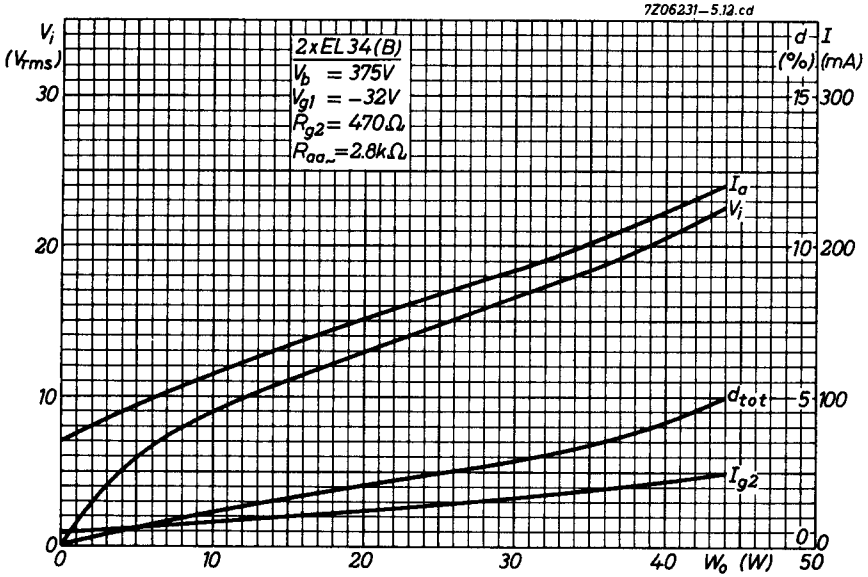
Load resistance	$R_{aa\sim}$	3.4	$k\Omega$
Common grid No.2 series resistor (non decoupled)	R_{g2}	470	Ω
Common cathode resistor	R_k	130	Ω
Grid No.3 voltage	V_{g3}	0 V	
Grid No.1 driving voltage	V_i	0	21 V_{RMS}
Supply voltage	V_b	375	375 V
Anode to earth voltage	$V_a + V_{Rk}$	355	350 V
Anode current	I_a	2x75	2x95 mA
Grid No.2 current	I_{g2}	2x11.5	2x22.5 mA
Output power	W_o	0	35 W
Distortion	d_{tot}	-	5 %

LIMITING VALUES (Design centre rating system)

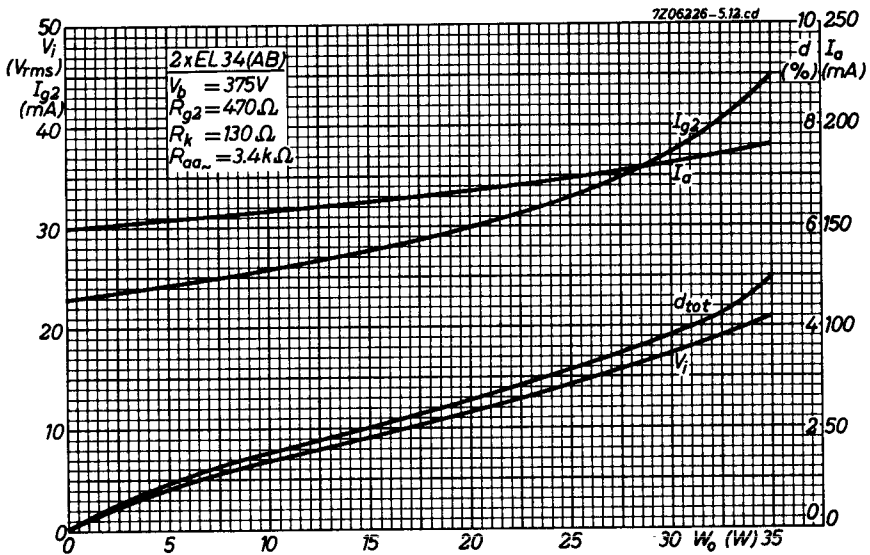
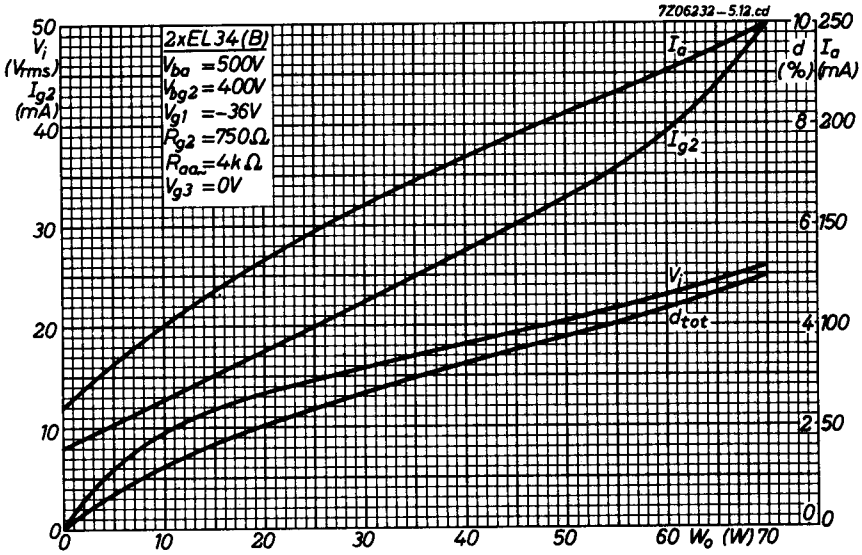
Anode voltage	V_{a0}	max.	2000 V
	V_a	max.	800 V
Grid No.2 voltage	V_{g20}	max.	800 V
	V_{g2}	max.	500 V
Anode dissipation	W_a	max.	25 W
	W_a	max.	27.5 W
Grid No.2 dissipation	W_{g2}	max.	8 W
Cathode current	I_k	max.	150 mA
Grid No.1 resistor	R_{g1}	max.	0.7 $M\Omega$
	R_{g1}	max.	0.5 $M\Omega$
Cathode to heater voltage	V_{kf}	max.	100 V







EL34



PHILIPS

Data handbook



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