PHILIPS

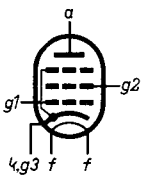
EL 84

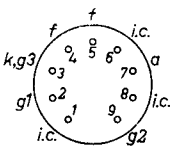
OUTPUT PENTODE
PENTHODE DE SORTIE
ENDPENTODE

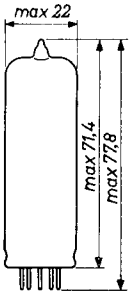
Heating: indirect by A.C. or D.C.; parallel supply
Chauffage: indirect par C.A. ou C.C.; alimentation en parallèle
Heizung: indirekt durch Wechsel- oder Gleichstrom; Parallelspeisung

V_f = 6,3 A
I_f = 0,76 A

Dimensions in mm
Dimensions en mm
Abmessungen in mm







Base, culot, Sockel: NOVAL

Capacitances
Capacités
Kapazitäten

C_{g1} = 10,8 pF
C_a = 6,5 pF
C_{ag1} < 0,5 pF
C_{g1f} < 0,25 pF

Operating characteristics class A
Caractéristiques d'utilisation classe A
Betriebsdaten Klasse A

V_a	=			250			V
V_{g2}	=			250			V
V_{g1}	=			-7,3			V
R_k	=			135			Ω
R_a	=			5,2			kΩ
V_i	=	0	0,3	3,4	4,3	4,7 [2]	V_{eff}
I_a	=	48	-	-	49,5	49,2	mA
I_{g2}	=	5,5	-	-	10,8	11,6	mA
S	=	11,3	-	-	-	-	mA/V
R_i	=	38	-	-	-	-	kΩ
μ_{g2g1}	=	19	-	-	-	-	
W_o [1]	=	0	0,05	4,5	5,7	6,0	W
d_{tot} [1]	=	-	-	6,8	10	-	%
d_2 [1]	=	-	-	3,0	2,0	-	%
d_3 [1]	=	-	-	5,8	9,5	-	%

V_a	=			250			V
V_{g2}	=			250			V
V_{g1}	=			-7,3			V
R_k	=			135			Ω
R_a	=			4,5			kΩ
V_i	=	0	0,3	3,5	4,4	4,8 [2]	V_{eff}
I_a	=	48	-	-	50,6	50,5	mA
I_{g2}	=	5,5	-	-	10	11	mA
S	=	11,3	-	-	-	-	mA/V
R_i	=	38	-	-	-	-	kΩ
μ_{g2g1}	=	19	-	-	-	-	
W_o [1]	=	0	0,05	4,5	5,7	6,0	W
d_{tot} [1]	=	-	-	7,5	10	-	%
d_2 [1]	=	-	-	5,7	5,0	-	%
d_3 [1]	=	-	-	4,5	8	-	%

[1] Measured with fixed bias
Mesuré avec polarisation fixe
Gemessen mit fester Gittervorspannung

[2] I_{g1} = +0,3 µA

Operating characteristics class A (continued)
Caractéristiques d'utilisation classe A (continuation)
Betriebsdaten Klasse A (Fortsetzung)

V_a	=			250		V
V_{g2}	=			250		V
V_{g1}	=			-8,4		V
R_k	=			210		Ω
R_a	=			7		kΩ
V_i	=	0	0,3	3,5	5,5 [2]	Veff
I_a	=	36	-	36,8	36	mA
I_{g2}	=	4,1	-	8,5	14,6	mA
S	=	10	-	-	-	mA/V
R_i	=	40	-	-	-	kΩ
μ_{g2g1}	=	19	-	-	-	
W_o [1]	=	0	0,05	4,2	5,6	W
d_{tot} [1]	=	-	-	10	-	%
d_2 [1]	=	-	-	1,7	-	%
d_3 [1]	=	-	-	8,7	-	%

V_a	=			250		V
V_{g2}	=			210		V
V_{g1}	=			-6,4		V
R_k	=			160		Ω
R_a	=			7		kΩ
V_i	=	0	0,3	3,4	3,8 [2]	Veff
I_a	=	36	-	36,6	36,5	mA
I_{g2}	=	3,9	-	7,3	8,0	mA
S	=	10,4	-	-	-	mA/V
R_i	=	40	-	-	-	kΩ
μ_{g2g1}	=	19	-	-	-	
W_o [1]	=	0	0,05	4,3	4,7	W
d_{tot} [1]	=	-	-	10	-	%
d_2 [1]	=	-	-	1,8	-	%
d_3 [1]	=	-	-	9,3	-	%

[1] Measured with fixed bias
Mesuré avec polarisation fixe
Gemessen mit fester Gittervorspannung

[2] I_{g1} = +0,3 µA

Operating characteristics class B, two tubes
Caractéristiques d'utilisation classe B, deux tubes
Betriebsdaten Klasse B, zwei Röhren

V_a	=	250		300		V
V_{g2}	=	250		300		V
V_{g1}	=	-11,6		-14,7		V
R_{aa}	=	8		8		kΩ
V_i	=	0	8	0	10	V_{eff}
I_a	=	2x10	2x37,5	2x7,5	2x46	mA
I_{g2}	=	2x1,1	2x7,5	2x0,8	2x11	mA
W_o	=	0	11	0	17	W
d_{tot}	=	-	3	-	4	%

Operating characteristics class AB, two tubes
Caractéristiques d'utilisation classe AB, deux tubes
Betriebsdaten Klasse AB, zwei Röhren

V_a	=	250		300		V
V_{g2}	=	250		300		V
R_k	=	130		130		Ω
R_{aa}	=	8		8		kΩ
V_i	=	0	8	0	10	V_{eff}
I_a	=	2x31	2x37,5	2x36	2x46	mA
I_{g2}	=	2x3,5	2x7,5	2x4	2x11	mA
W_o	=	0	11	0	17	W
d_{tot}	=	-	3	-	4	%

Operating characteristics in triode connection, class A
(screen grid connected to anode)
Caractéristiques d'utilisation en montage triode, classe A
(grille-écran reliée à l'anode)
Betriebsdaten in Triodenschaltung, Klasse A
(Schirmgitter verbunden mit Anode)

V_a	=		250		V
R_k	=		270		Ω
R_a	=		3,5		kΩ
V_i	=	0	1,0	6,7	V_{eff}
I_a	=	34	-	36	mA
W_o	=	-	0,05	1,95	W
d_{tot}	=	-	-	9	%

Operating characteristics two tubes class AB in triode connection (Screen grid connected to anode)
Caractéristiques d'utilisation deux tubes en classe AB en montage triode (Grille-écran reliée à l'anode)
Betriebsdaten zwei Röhren in Klasse AB in Triodenschaltung (Schirmgitter verbunden mit Anode)

V_a	=	250		300		V
R_k	=	270		270		Ω
R_{aa}	=	10		10		kΩ
V_i	=	0	8,3	0	10	V_{eff}
I_a	=	2x20	2x21,7	2x24	2x26	mA
W_o	=	0	3,4	0	5,2	W
d_{tot}	=	-	2,5	-	2,5	%
V_i (W_o=50mW)	=	0,95		0,9		V_{eff}

Limiting values
Caractéristiques limites
Grenzdaten

V_{ao}	= max.	550	V
V_a	= max.	300	V [1]
W_a	= max.	12	W [1]
V_{g2o}	= max.	550	V
V_{g2}	= max.	300	V [1]
W_{g2}	= max.	2	W
W_{g2p}	= max.	4	W
$-V_{g1}$	= max.	100	V
$-V_{g1}(I_{g1}=+0,3\mu A)$	= max.	1,3	V
I_k	= max.	65	mA
R_{g1}	= max.	1	MΩ [2]
R_{g1}	= max.	0,3	MΩ [3]
V_{kf}	= max.	100	V
R_{kf}	= max.	20	kΩ

[1]) When the heater and positive voltages are obtained from a storage battery by means of a vibrator, the max. values of V_a and V_{g2} are 250 V and that of W_a is 9 W.

Si la tension de chauffage et les tensions positives sont obtenues d'un accumulateur par moyen d'un vibreur, les valeurs max. de V_a et V_{g2} sont de 250 V et celle de W_a est de 9 W.

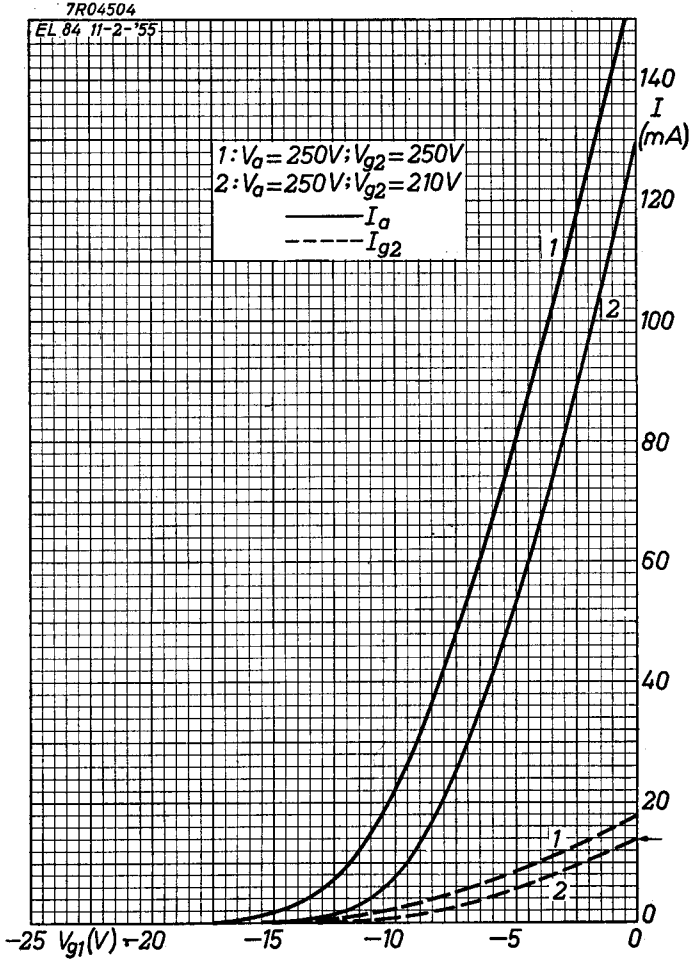
Wenn die Heizspannung und die positiven Spannungen mittels eines Wechselrichters von einem Akkumulator erhalten werden, sind die Grenzwerte von V_a und V_{g2} 250 V und von W_a 9 W.

[2]) With automatic grid bias
Avec polarisation automatique
Bei automatischer Gittervorspannung

[3]) With fixed bias
Avec polarisation fixe
Bei fester Gittervorspannung

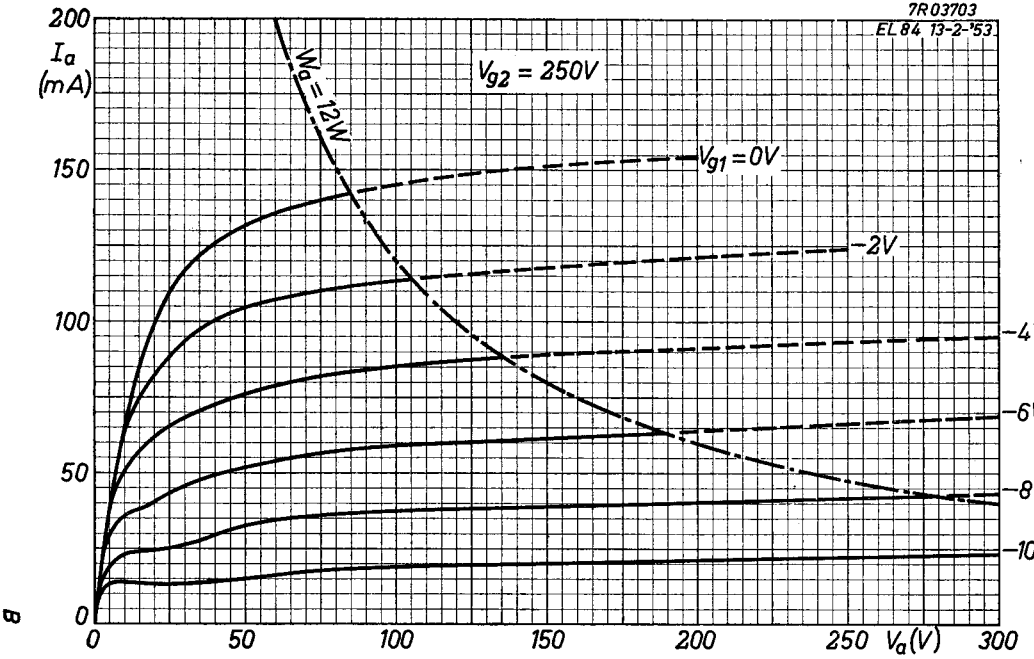
PHILIPS

EL 84



3.3.1955

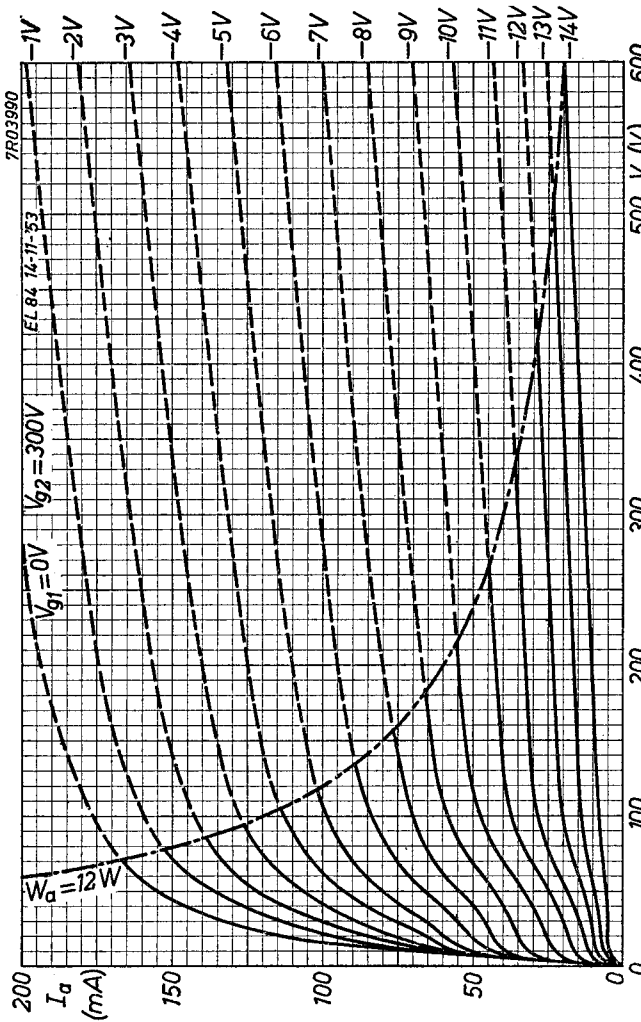
A


7R03703
EL 84 13-2-'53
I_a (mA)
200
150
100
50
0
V_{g2} = 250V
W_a = 12W
V_{g1} = 0V
-2V
-4V
-6V
-8V
-10V
0
50
100
150
200
250
V_a(V)
300

B

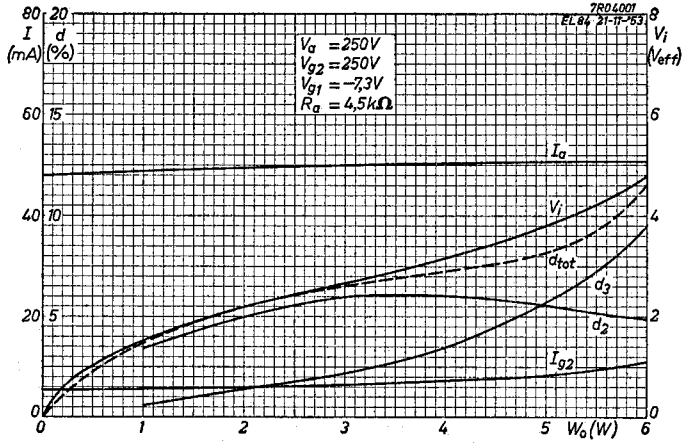
PHILIPS

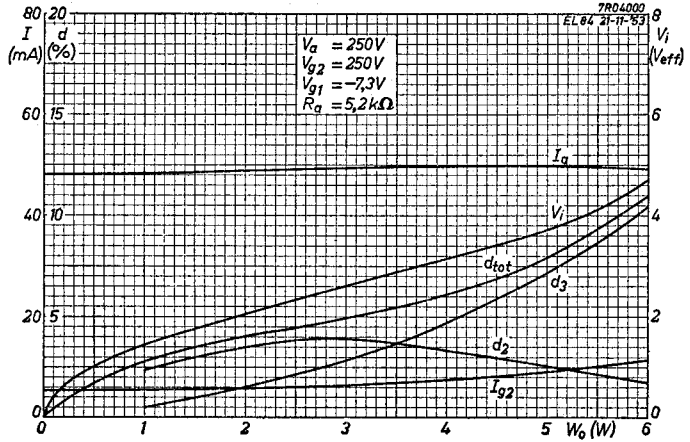
EL 84



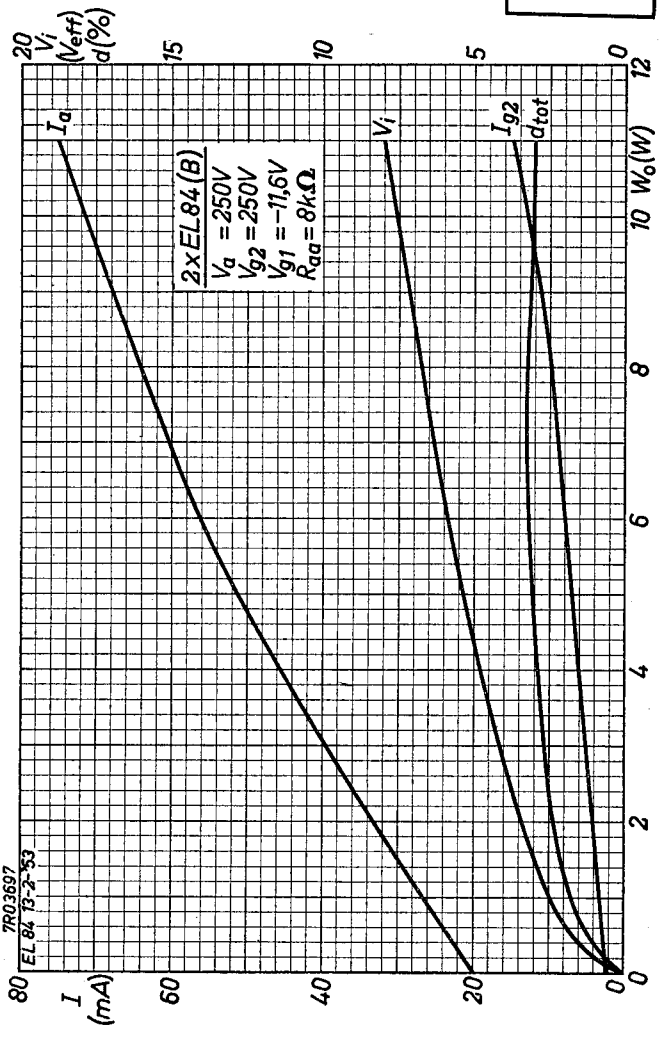
EL 84

PHILIPS

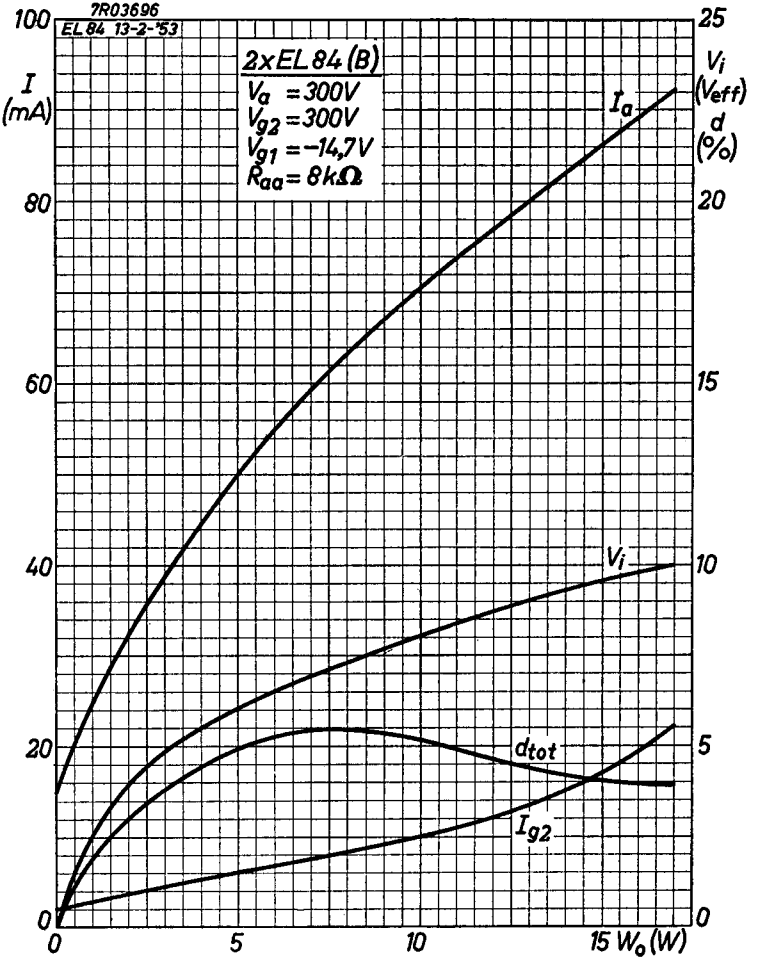

7R04001
EL 84 21-11-'63
V_a = 250V
V_{g2} = 250V
V_{g1} = −7,3V
R_a = 4,5kΩ
I (mA)
d (%)
V_i (Veff)
I_a
V_i
d_{tot}
d_3
d_2
I_{g2}
W_o (W)

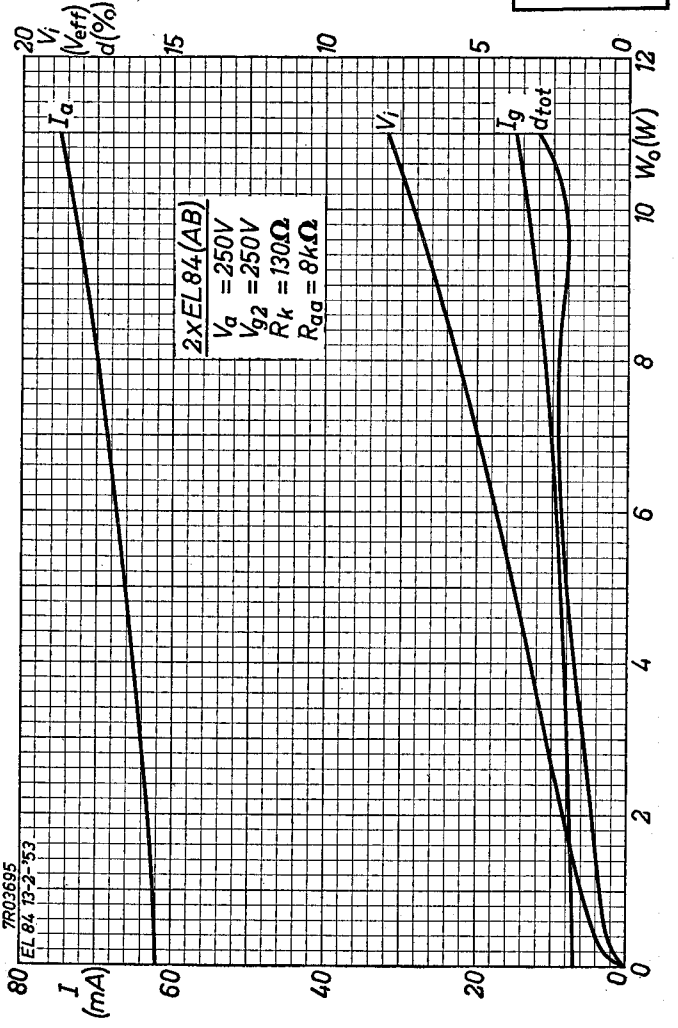

7R04000
EL 84 21-11-'63
V_a = 250V
V_{g2} = 250V
V_{g1} = −7,3V
R_a = 5,2kΩ
I (mA)
d (%)
V_i (Veff)
I_a
V_i
d_{tot}
d_3
d_2
I_{g2}
W_o (W)

EL 84 **PHILIPS**

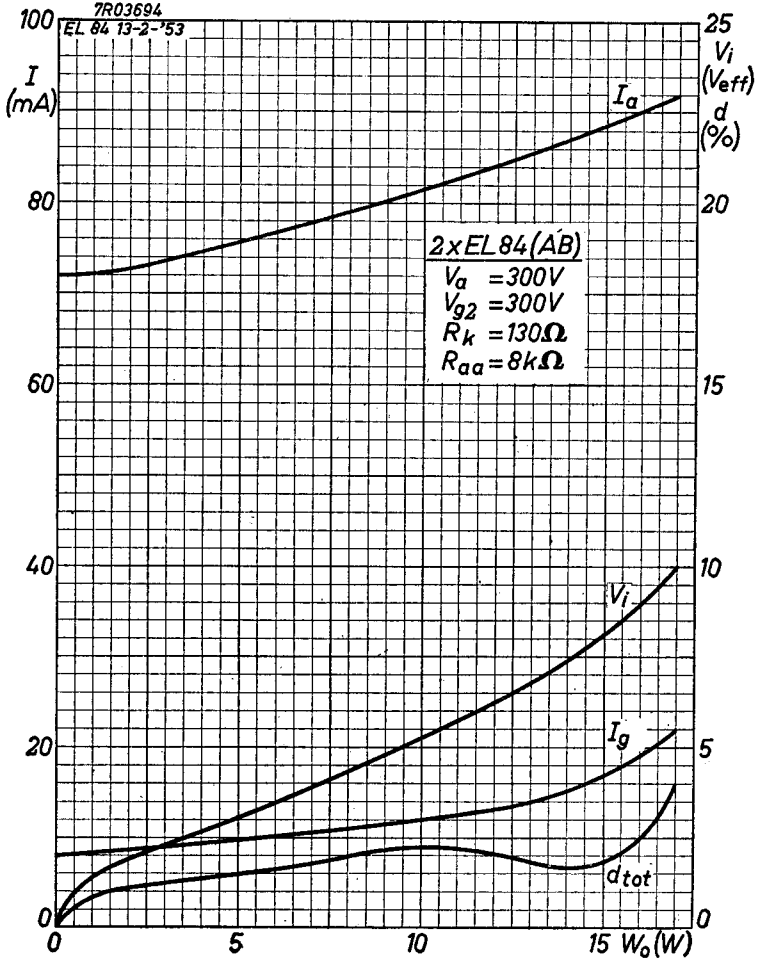

2×EL84(B)
Va = 250V
Vg2 = 250V
Vg1 = −11,6V
Raa = 8kΩ
Ia
Vi
Ig2
dtot
I (mA)
Vi (Veff)
d(%)
Wo(W)
80
60
40
20
0
20
15
10
5
0
12
10
8
6
4
2
0
7R03697
EL 84 13-2-'53

EL 84 PHILIPS




2×EL84(AB)
Va =250V
Vg2 =250V
Rk =130Ω
Raa =8kΩ
Ia
Vi
Ig
dtot
I (mA)
Vi (Veff)
d(%)
Wo(W)
7R03695
EL 84 13-2-'53

EL 84 PHILIPS

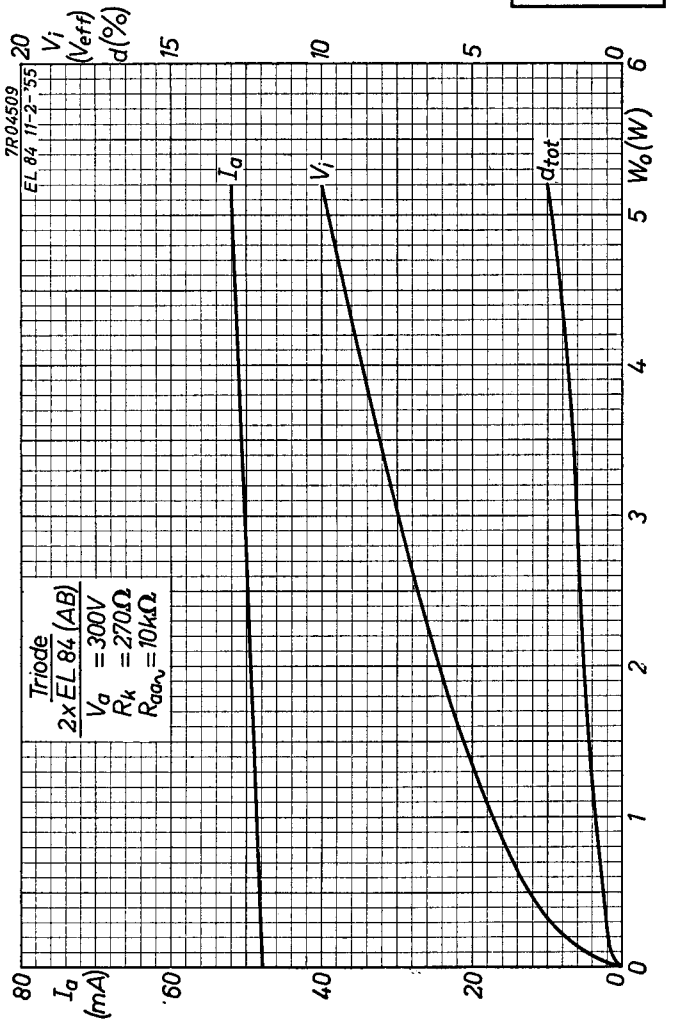


J

Triode
V_a = 250V
R_k = 270Ω
$R_{a\sim}$ = 3,5kΩ
I_a
V_i
d_{tot}
I_a (mA)
60
40
20
0
d (%)
30
20
10
0
V_i (Veff)
15
10
5
0
W_o (W)
0
0,5
1
1,5
2
2,5
7R04507
EL 84 11-2-55

EL 84

PHILIPS


7R04509
EL 84 11-2-'55
Triode
2x EL 84 (AB)
V_a = 300V
R_k = 270Ω
$R_{aa\sim}$ = 10kΩ
I_a
V_i
d_{tot}
I_a (mA)
V_i (Veff)
d(%)
W_o (W)
80
60
40
20
0
20
15
10
5
0
6
5
4
3
2
1
0

EL84

page	sheet	date
1	1	1955.03.03
2	2	1955.03.03
3	3	1953.11.11
4	4	1953.11.11
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6	6	1955.03.03
7	A	1955.03.03
8	B	1955.03.03
9	C	1957.10.10
10	E	1957.10.10
11	E	1957.10.10
12	F	1957.10.10
13	G	1957.10.10
14	H	1957.10.10
15	I	1957.10.10
16	J	1957.10.10
17	K	1957.10.10
18	L	1957.10.10
19	M	1957.10.10