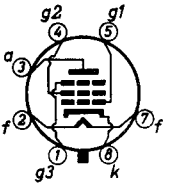
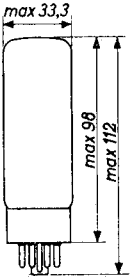
OUTPUT PENTODE
PENTHODE DE SORTIE
ENDPENTODE

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 V
I_f = 1,5 A

Dimensions in mm
Dimensions en mm
Abmessungen in mm





Base
Culot OCTAL
Sockel

Socket
Support 5903/13
Fassung

Capacitances
Capacités
Kapazitäten

C_{g1} = 15,2 pF
C_a = 8,4 pF
C_{ag1} < 1,1 pF
C_{g1f} < 1,0 pF
C_{kf} = 10 pF

Remark When using a sinusoidal input signal care should be taken not to exceed the maximum admissible W_{g2}.

Observation En cas d'un signal d'entrée sinusoïdal il faut faire attention à ne pas dépasser la valeur maximum admissible de W_{g2}.

Bemerkung Bei Verwendung eines sinusförmigen Eingangssignales muss darauf geachtet werden dass der maximal zulässige Wert von W_{g2} nicht überschritten wird.

OUTPUT PENTODE
PENTHODE DE SORTIE
ENDPENTODE

Heating: indirect by A.C. or D.C.; parallel supply
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V_f = 6,3 V
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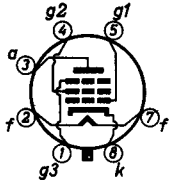
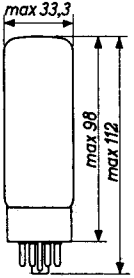
Dimensions in mm
Dimensions en mm
Abmessungen in mm





Base
Culot OCTAL
Sockel

Socket
Support 5903/13
Fassung

Capacitances
Capacités
Kapazitäten

C_{g1} = 15,2 pF
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C_{ag1} < 1,1 pF
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Bemerkung Bei Verwendung eines sinusförmigen Eingangssignales muss darauf geachtet werden dass der maximal zulässige Wert von W_{g2} nicht überschritten wird.

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

V_b	= 265	265	V
V_a	= 250	250	V
R_{g2}	= 2	0	kΩ
V_{g3}	= 0	0	V
V_{g1}	= -14,5	-13,5	V
I_a	= 70	100	mA
I_{g2}	= 10	14,9	mA
S	= 9,0	11	mA/V
μ_{g2g1}	= 11	11	
R_i	= 18	15	kΩ
R_a	= 3,0	2,0	kΩ
V_i	= 9,3	8,7	V_{eff}
W_o	= 8	11	W
d_{tot}	= 10	10	%
V_i (W_o = 50 mW)	= 0,65	0,5	V_{eff}

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

R_{g2}	=	1000			470			Ω [1]
V_{g1}	=	-38			-32			V
V_{g3}	=	0			0			V
V_i	=	0	27	27	0	22,7	22,7	V_{eff}
R_{aa}	=	-	3,4	4,0	-	2,8	3,8	kΩ
V_b	=	425	425	400	375	375	350	V
V_a	=	420	400	375	370	350	325	V
I_a	=	2x30	2x120	2x100	2x35	2x120	2x93	mA
I_{g2}	=	2x4,4	2x25	2x25	2x4,7	2x25	2x25	mA
W_o	=	0	55	45	0	44	36	W
d_{tot}	=	-	5	6	-	5	6	%

[1]) Common screen grid resistor; non decoupled
Résistance de grille-écran commune; ne pas découplée
Gemeinsamer Schirmgitterwiderstand; nicht entkoppelt

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

V_b	=	265	265	V
V_a	=	250	250	V
R_{g2}	=	2	0	kΩ
V_{g3}	=	0	0	V
V_{g1}	=	-14,5	-13,5	V
I_a	=	70	100	mA
I_{g2}	=	10	14,9	mA
→ S	=	11	12,5	mA/V
μ_{g2g1}	=	11	11	
→ R_i	=	20	17	kΩ
$R_{a\sim}$	=	3,0	2,0	kΩ
V_i	=	9,3	8,7	V_{eff}
W_o	=	8	11	W
d_{tot}	=	10	10	%
V_i (W_o = 50 mW)	=	0,65	0,5	V_{eff}

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

R_{g2}	=	1000			470			Ω [1]
V_{g1}	=	-38			-32			V
V_{g3}	=	0			0			V
V_i	=	0	27	27	0	22,7	22,7	V_{eff}
$R_{aa\sim}$	=	-	3,4	4,0	-	2,8	3,8	kΩ
V_b	=	425	425	400	375	375	350	V
V_a	=	420	400	375	370	350	325	V
I_a	=	2x30	2x120	2x100	2x35	2x120	2x93	mA
I_{g2}	=	2x4,4	2x25	2x25	2x4,7	2x25	2x25	mA
W_o	=	0	55	45	0	44	36	W
d_{tot}	=	-	5	6	-	5	6	%

[1] Common screen grid resistor; non decoupled
Résistance de grille-écran commune; ne pas découplée
Gemeinsamer Schirmgitterwiderstand; nicht entkoppelt

R_{g2} =		750			750		Ω [1]
V_{g1} =		-36			-39		V
V_{g3} =		0			0		V
V_i =	0	25,8	25,8	0	23,4	23,4	V_{eff}
R_{aa} =	-	4	5	-	11	11	kΩ
V_{ba} =	500	500	475	800	800	750	V
V_a =	495	475	450	795	775	725	V
V_{bg2} =	400	400	375	400	400	375	V
I_a =	2x30	2x125	2x102	2x25	2x91	2x84	mA
I_{g2} =	2x4	2x25	2x25	2x3	2x19	2x19	mA
W_o =	0	70	58	0	100	90	W
d_{tot} =	-	5	6	-	5	6	%

Operating conditions class AB
Caractéristiques d'utilisation classe AB
Betriebsdaten Klasse AB

R_{aa} =		3,4		kΩ
R_{g2} =		470		Ω [1]
R_k =		130		Ω
V_{g3} =		0		V
V_i =	0		21	V_{eff}
V_b =	375		375	V
$V_{a+V_{Rk}}$ =	355		350	V
I_a =	2x75		2x95	mA
I_{g2} =	2x11,5		2x22,5	mA
W_o =	0		35	W
d_{tot} =	-		5	%

[1]) Common screen grid resistor; non decoupled
Résistance de grille-écran commune; ne pas découplée
Gemeinsamer Schirmgitterwiderstand; nicht entkoppelt

R_{g2} =		750			750		Ω [1]
V_{g1} =		-36			-39		V
V_{g3} =		0			0		V
V_i =	0	25,8	25,8	0	23,4	23,4	V_{eff}
R_{aa} =	-	4	5	-	11	11	kΩ
V_{ba} =	500	500	475	800	800	750	V
V_a =	495	475	450	795	775	725	V
V_{bg2} =	400	400	375	400	400	375	V
I_a =	2x30	2x125	2x102	2x25	2x91	2x84	mA
I_{g2} =	2x4	2x25	2x25	2x3	2x19	2x19	mA
W_o =	0	70	58	0	100	90	W
d_{tot} =	-	5	6	-	5	6	%

Operating conditions class AB
Caractéristiques d'utilisation classe AB
Betriebsdaten Klasse AB

R_{aa} =		3,4	kΩ
R_{g2} =		470	Ω [1]
R_k =		130	Ω
V_{g3} =		0	V
V_i =	0	21	V_{eff}
V_b =	375	375	V
V_a+V_{Rk} =	355	350	V
I_a =	2x75	2x95	mA
I_{g2} =	2x11,5	2x22,5	mA
W_o =	0	35	W
d_{tot} =	-	5	%

[1] Common screen grid resistor; non decoupled
Résistance de grille-écran commune; ne pas découplée
Gemeinsamer Schirmgitterwiderstand; nicht entkoppelt

Operating conditions in triode connection
(g_2 connected to anode)
Caractéristiques d'utilisation en connexion triode
(g_2 relié à l'anode)
Betriebsdaten in Triodenschaltung
(g_2 verbunden mit Anode)

		Class A Classe A Klasse A	Class AB Classe AB Klasse AB		
V_b	=	375	400		V
V_{g3}	=	0	0		V
R_k	=	370	220		Ω
R_a	=	3	-		kΩ
R_{aa}	=	-	5		kΩ
V_i	=	18,9	0	22	V_{eff}
I_a	=	70	2x65	2x71	mA
W_o	=	6	0	16,5	W
d	=	8	-	3	%
$V_i(W_o$=50mW)	=	1,7			V_{eff}

Limiting values
Caractéristiques limites
Grenzdaten

V_{a_o}	= max.	2000	V
V_a	= max.	800	V
W_a (V_i = 0)	= max.	25	W
W_a (V_i > 0)	= max.	27,5	W
V_{g2_o}	= max.	800	V
V_{g2}	= max.	425	V
W_{g2}	= max.	8	W
I_k	= max.	150	mA
V_{g1} (I_{g1} = +0,3 µA)	= max.	-1,3	V
R_{g1} (A, AB)	= max.	0,7	MΩ
R_{g1} (B)	= max.	0,5	MΩ
V_{fk}	= max.	100	V
R_{fk}	= max.	20	kΩ

Operating conditions in triode connection
(g_2 connected to anode)
Caractéristiques d'utilisation en connexion triode
(g_2 relié à l'anode)
Betriebsdaten in Triodenschaltung
(g_2 verbunden mit Anode)

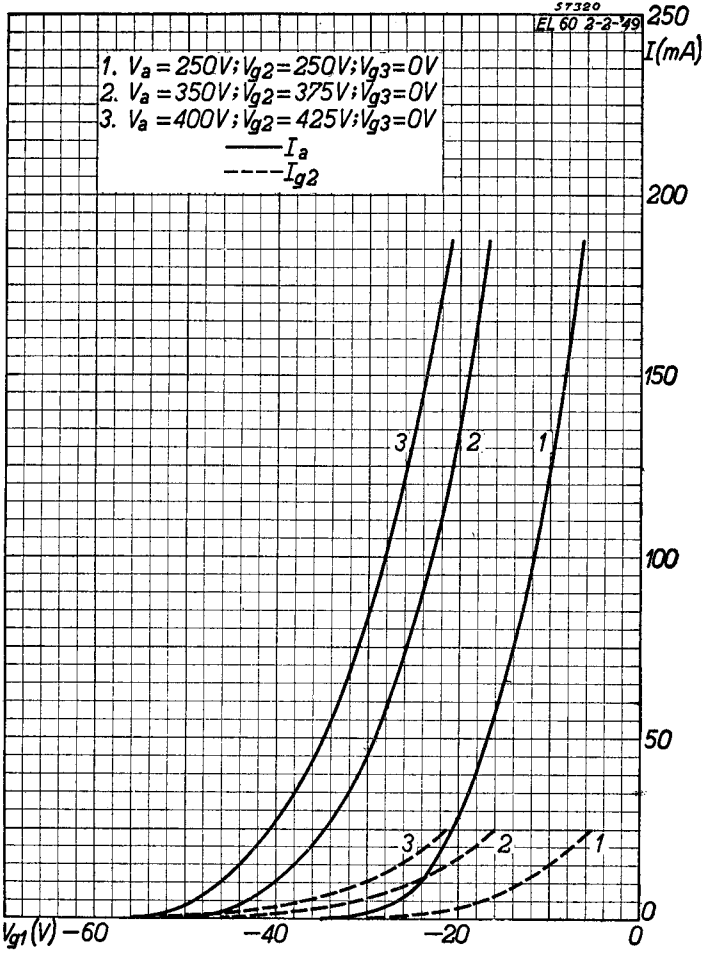
		Class A Classe A Klasse A	Class AB Classe AB Klasse AB		
V_b	=	375	400		V
V_{g3}	=	0	0		V
R_k	=	370	220		Ω
$R_{a\sim}$	=	3	–		kΩ
$R_{aa\sim}$	=	–	5		kΩ
V_i	=	18,9	0	22	V_{eff}
I_a	=	70	2x65	2x71	mA
W_o	=	6	0	16,5	W
d	=	8	–	3	%
$V_i(W_o=50mW)$	=	1,7			V_{eff}

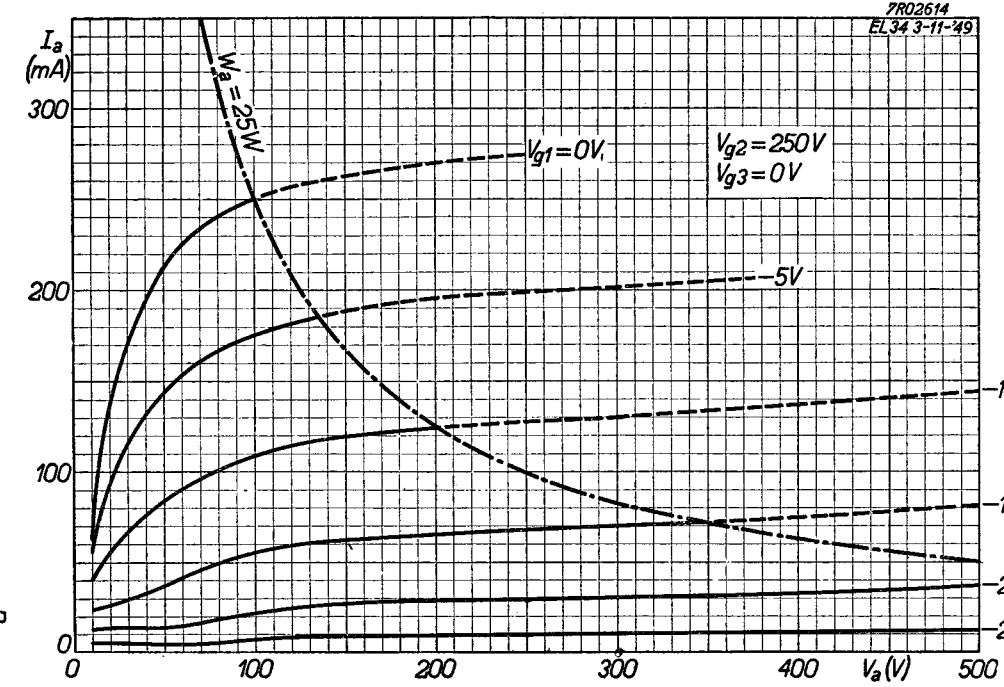
Limiting values
Caractéristiques limites
Grenzdaten

V_{a_o}	= max.	2000 V
V_a	= max.	800 V
W_a (V_i = 0)	= max.	25 W
W_a (V_i > 0)	= max.	27,5 W
V_{g2_o}	= max.	800 V
V_{g2}	= max.	500 V
W_{g2}	= max.	8 W
I_k	= max.	150 mA
V_{g1} (I_{g1} = +0,3 μA)	= max.	−1,3 V
R_{g1} (A, AB)	= max.	0,7 MΩ
R_{g1} (B)	= max.	0,5 MΩ
V_{fk}	= max.	100 V
R_{fk}	= max.	20 kΩ

PHILIPS

EL 34

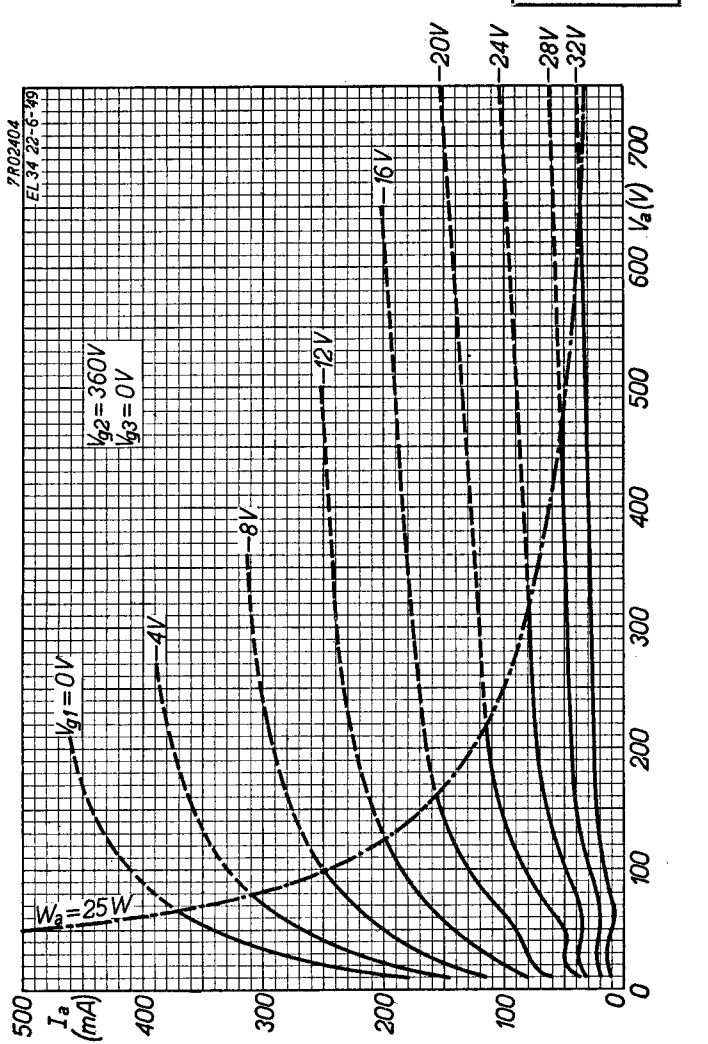



7R02614
EL34 3-11-49
I_a (mA)
W_a = 25W
V_{g1} = 0V
V_{g2} = 250V
V_{g3} = 0V
-5V
-10V
-15V
-20V
-25V
300
200
100
0
0
100
200
300
400
500
V_a (V)

B

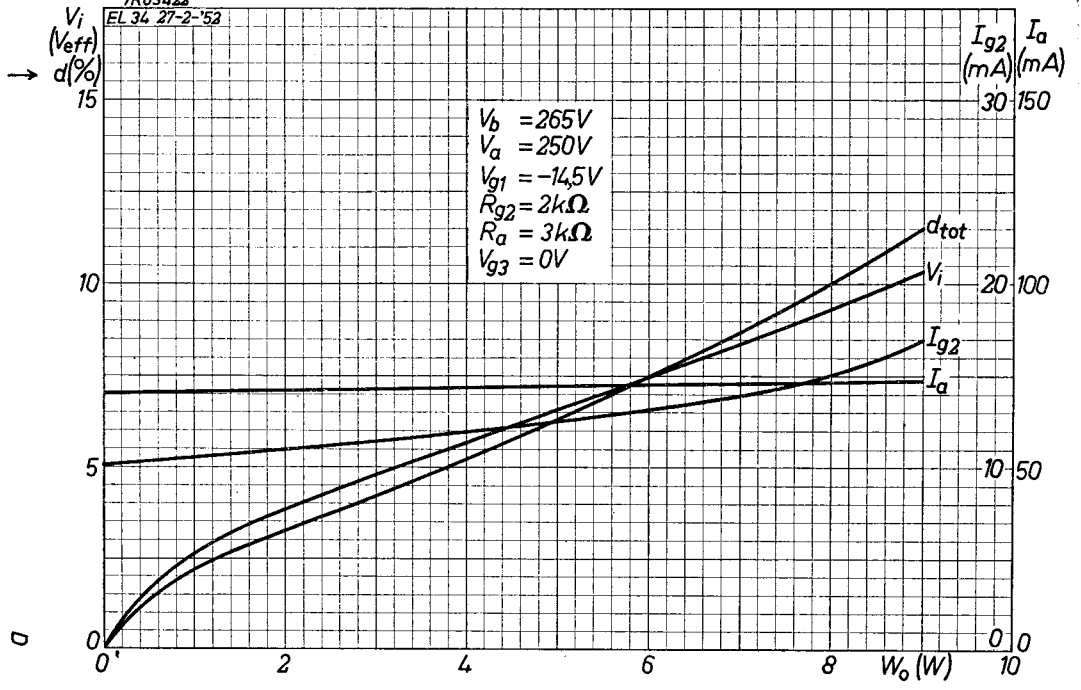
PHILIPS

EL 34



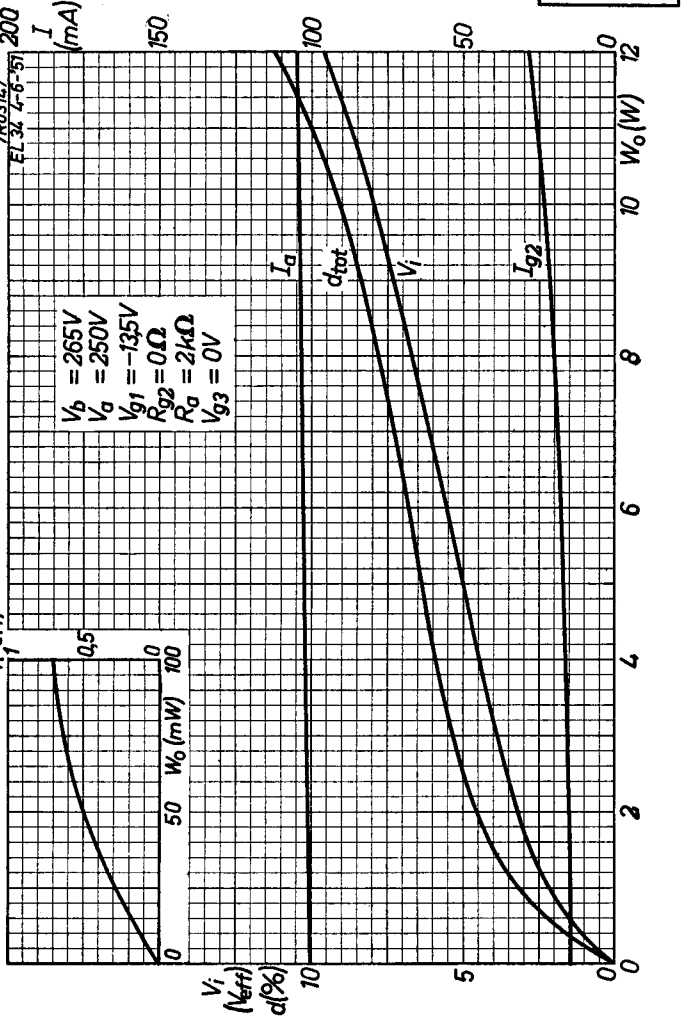
2.2.1952

C


7R03422
EL 34 27-2-'52
V_i (V_{eff}) d(%)
I_{g2} (mA)
I_a (mA)
V_b = 265V
V_a = 250V
V_{g1} = −14,5V
R_{g2} = 2kΩ
R_a = 3kΩ
V_{g3} = 0V
d_{tot}
V_i
I_{g2}
I_a
15
10
5
0
30
20
10
0
150
100
50
0
0'
2
4
6
8
10
W_o (W)
D

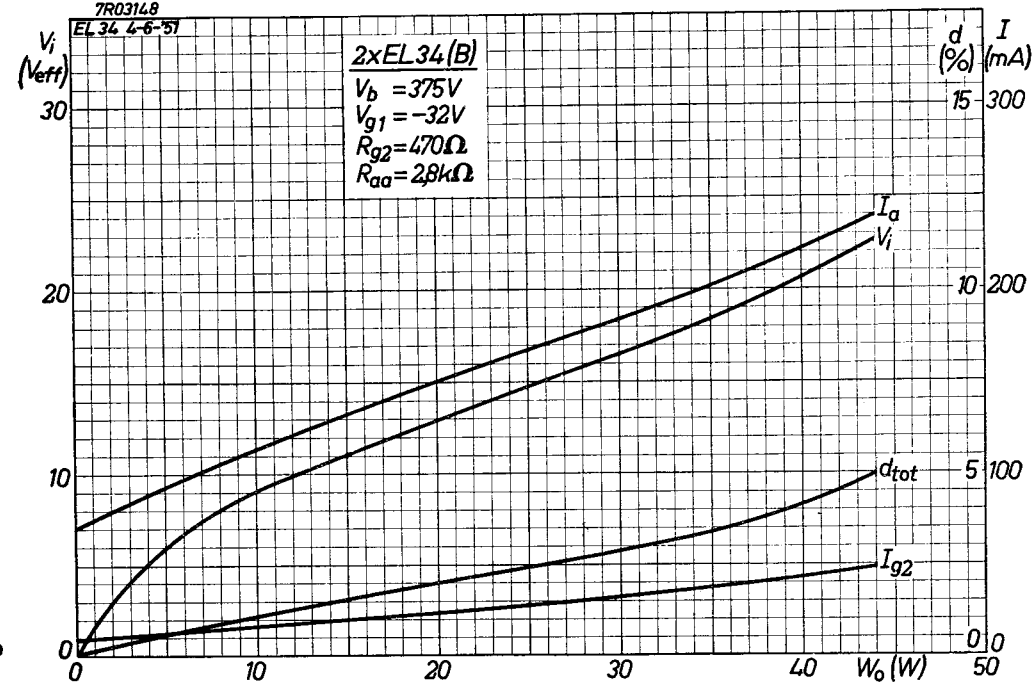
PHILIPS

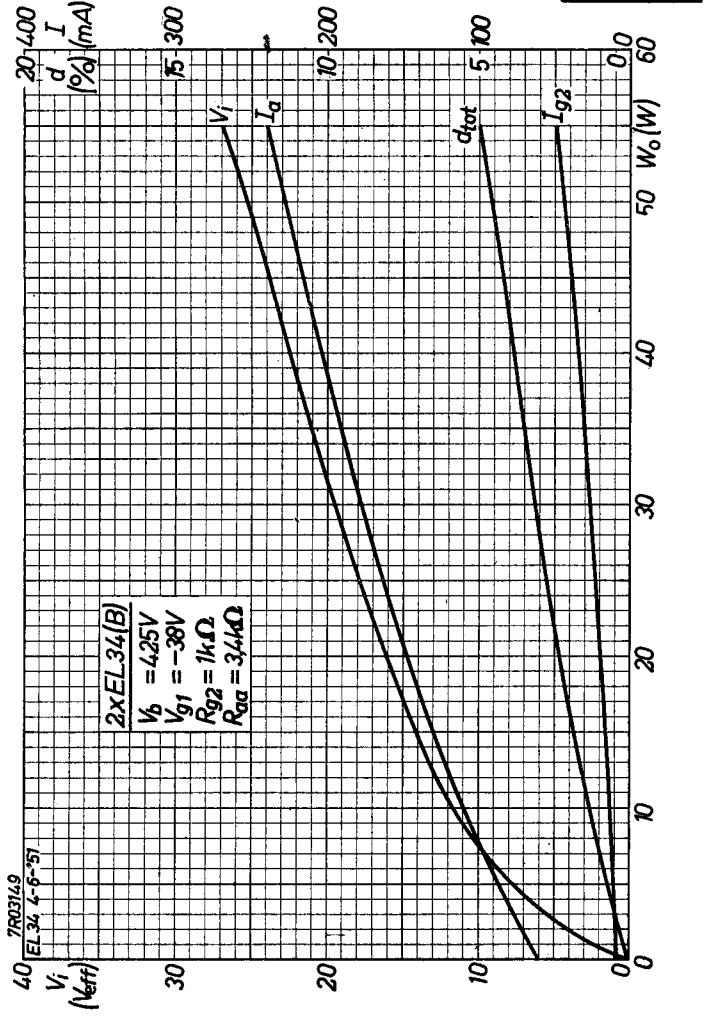
EL 34

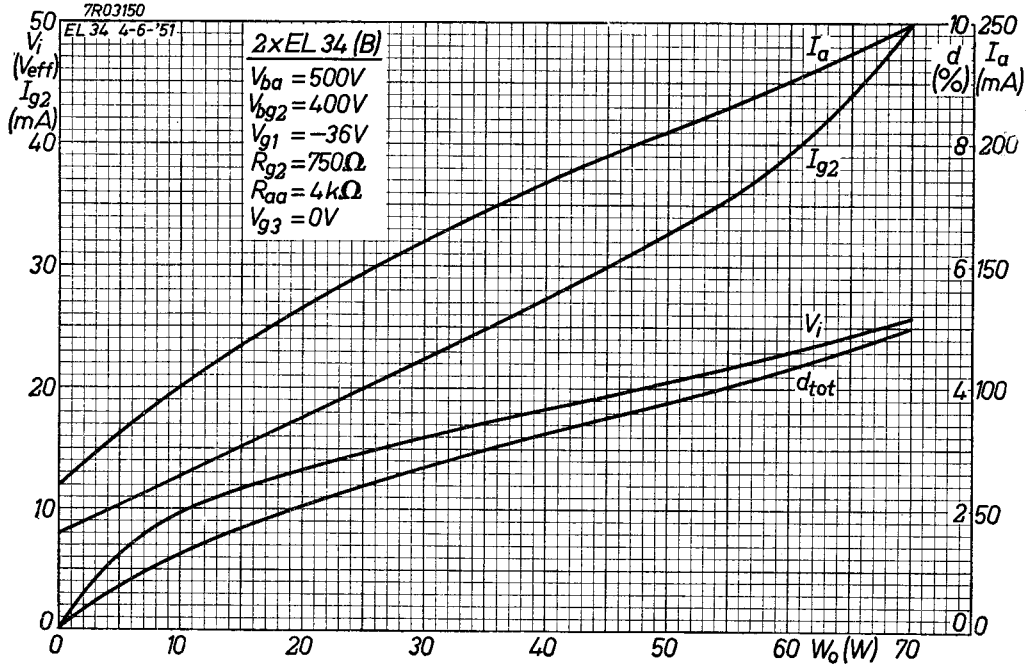


6.6.1951

E


7R03148
EL 34 4-6-51
2xEL34(B)
V_b = 375V
V_{g1} = −32V
R_{g2} = 470Ω
R_{aa} = 2,8kΩ
V_i (V_{eff})
d (%)
I (mA)
I_a
V_i
d_{tot}
I_{g2}
W_o (W)
0
10
20
30
40
50
100
200
300
5
10
15


2xEL34(B)
Vb = 425V
Vg1 = −38V
Rg2 = 1kΩ
Raa = 3,4kΩ
Vi
Ia
dtot
Ig2
Vi (Veff)
d (%)
I (mA)
Wo (W)
7R03149
EL 34 4-6-'51



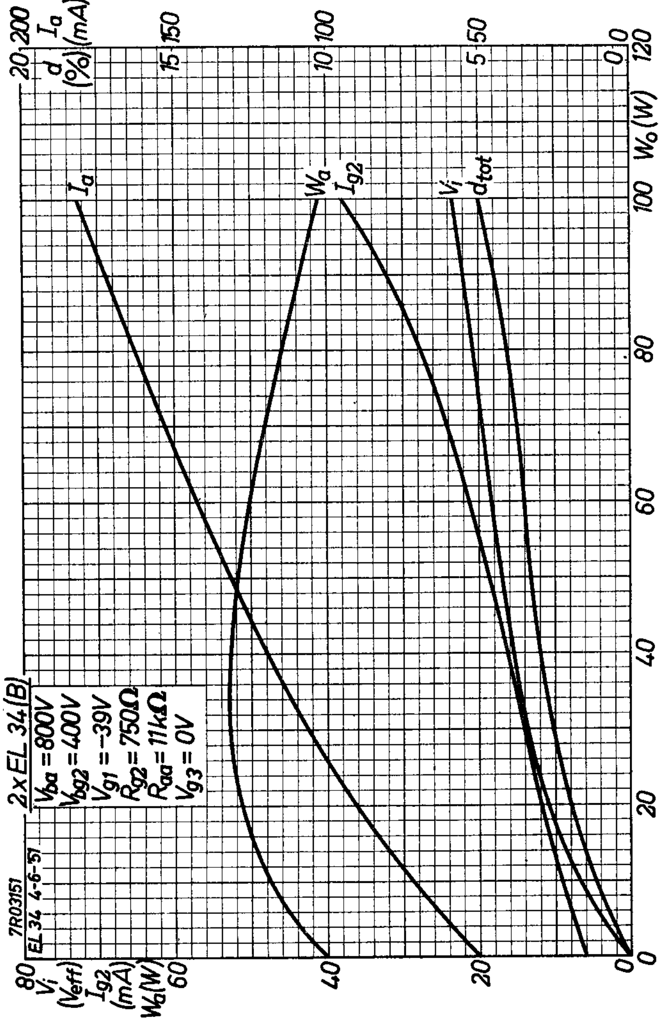
EL 34

PHILIPS

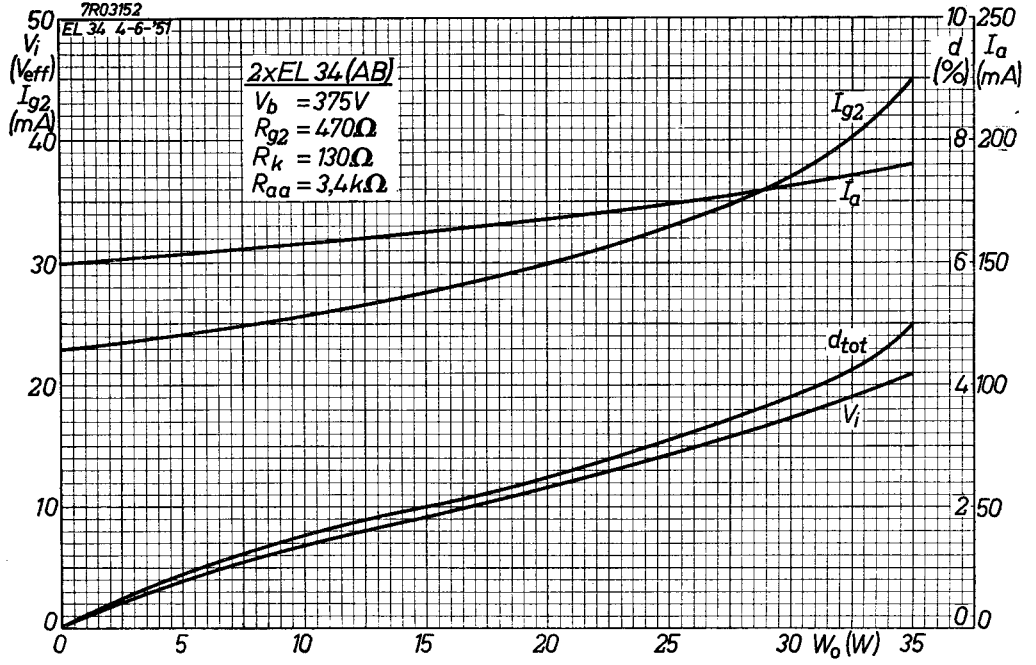
H

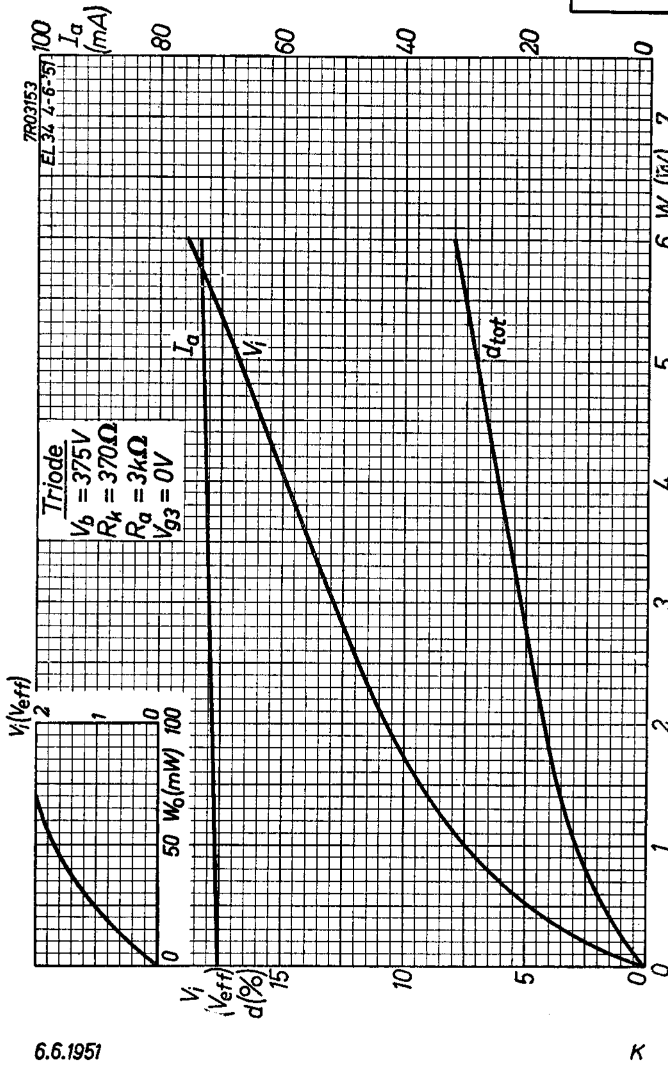
PHILIPS

EL 34



6.6.1951


7R03152
EL 34 4-6-'51
2xEL 34 (AB)
V_b = 375V
R_{g2} = 470Ω
R_k = 130Ω
R_{aa} = 3,4kΩ
V_i (V_{eff})
I_{g2} (mA)
d (%)
I_a (mA)
I_{g2}
I_a
d_{tot}
V_i
W_o (W)
0
5
10
15
20
25
30
35
50
40
30
20
10
0
10
8
6
4
2
0
250
200
150
100
50
0



Triode
Vb = 375V
Rk = 370Ω
Ra = 3kΩ
Vg3 = 0V
Ia
Vi
dtot
Ia (mA)
Wo (W)
Wo (mW)
Vi (Veff)
Vi (Veff) d(%)
7R03153
EL 34 4-6-'51

EL34

page	sheet	date
1	1	1958.02.02
2	1	1959.07.07
3	2	1958.02.02
4	2	1959.07.07
5	3	1956.02.02
6	3	1959.07.07
7	4	1956.02.02
8	4	1959.07.07
9	A	1949.10.10
10	B	1949.10.10
11	C	1952.02.02
12	D	1952.02.02
13	E	1951.06.06
14	F	1951.06.06
15	G	1951.06.06
16	H	1951.06.06
17	I	1951.06.06
18	J	1951.06.06
19	K	1951.06.06