PHILIPS

PB 3/800

PENTODE for use as H.F. amplifier and oscillator
PENTHODE pour utilisation en amplificatrice H.F. et oscillatrice
PENTODE zur Verwendung als H.F. Verstärker und Oszillator

Filament : thoriated tungsten
Filament : tungstène thorié
Heizfaden : thoriertes Wolfram

Heating : direct
Chauffage : direct
Heizung : direkt

V_f = 12 V
I_f = 8,5 A

Capacitances
Capacités
Kapazitäten

C_a = 21 pF
C_{g1} = 29 pF
C_{ag1} = 0,05 pF

Typical characteristics
Caractéristiques types
Kenndaten

μ_{g2g1} = 3,5
S (I_a=225 mA)= 6,5 mA/V

	Freq.	C telegr.		B teleph.	
m	Mc/s	V_a (V)	W_o (W)	V_a (V)	W_o (W)
>30	<10	3000	1200	3000	190
>15	<20	2500	950	2500	130
5	60	1800	485	1800	68
		C_{ag2} mod.		C_{g3} mod.	
>30	<10	2500	580	3000	200
>15	<20	2000	425	2500	150

B mod.[1])	
V_a (V)	W_o (W)
3000	1600

Limiting values
Caractéristiques limites
Grenzdaten

V_a	= max. 3000 V	R_{g3}	= max. 30 kΩ
W_a	= max. 450 W	W_{g1}	= max. 20 W
V_{g2}	= max. 600 V	R_{g1}	= max. 30 kΩ
V_{g2}(B mod.)	= max. 750 V	I_k	= max. 700 mA
W_{g2}	= max. 100 W	I_{kp}	= max. 4500 mA

temperature of pin seals a and g3)
temp. des points de scellement des broches a et g3) = max. 200 °C
Temp. der Verschlüsse a und g3)

[1]) Two tubes, deux tubes, zwei Röhren.

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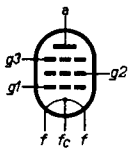
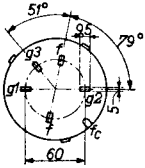
To insure safe seal temperatures a low velocity air flow is required above 60 Mc/s

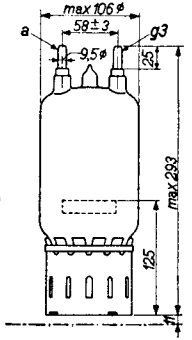
Un courant d'air à vélocité peu élevée est nécessaire aux fréquences dépassant 60 Mc/s pour assurer une température assez basse aux points de scellement

Bei Frequenzen höher als 60 MHz ist ein schwacher Luftstrom notwendig, damit die Temperatur der Stiftenverschlüsse die höchstzulässige Temperatur nicht überschreitet.

Dimensions in mm
Dimensions en mm
Abmessungen in mm







Socket
Support 40201
Fassung

Clips
Bornes de connexion 40626
Anschlussklemmen

Mounting position: vertical with base up[1]) or down
Montage : vertical avec culot en haut[1]) ou en bas
Einbau : senkrecht mit Sockel oben[1]) oder unten

Net weight		Shipping weight	
Poids net	0,78 kg	Poids brut	2,5 kg
Nettogewicht		Bruttogewicht	

[1]) In that case it is recommended to support the tube
Dans ce cas il est recommandé de supporter le tube
In diesem Fall empfiehlt es sich die Röhre zu stützen

Operating conditions H.F. class C telegraphy
Caractéristiques d'utilisation H.F. classe C télégraphie
Betriebsdaten H.F. Klasse C Telegraphie

			Vg2 = Vg3		
λ	=	>30	>15	5[1])	m
Va	=	3000	2500	1800	V
Vg1	=	-200	-200	-150	V
Vg2=Vg3	=	300	300	300	V
Ia	=	550	550	985	mA
Ig1	=	25	20	30	mA
Ig2+g3	=	100	100	200	mA
Vg1p	=	370	360	300	V
Wig1	=	9	7	9	W
Wg2+g3	=	30	30	60	W
Wia	=	1650	1375	1775	W
Wa	=	450	425	800	W
Wo	=	1200	950	975	W
η	=	72,5	69	55	%
			Vg3 = 0		
λ	=	>30	>15	5[1])	m
Va	=	3000	2500	1800	V
Vg1	=	-300	-300	-200	V
Vg2	=	500	500	500	V
Vg3	=	0	0	0	V
Ia	=	465	470	945	mA
Ig1	=	20	20	30	mA
Ig2	=	200	200	320	mA
Vg1p	=	450	450	350	V
Wig1	=	9	9	11	W
Wg2	=	100	100	160	W
Wia	=	1400	1175	1700	W
Wa	=	450	450	800	W
Wo	=	950	725	900	W
η	=	68	61,5	53	%

[1]) Two valves; deux tubes; zwei Röhren

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Operating conditions H.F. class B telephony
Caractéristiques d'utilisation H.F. classe B téléphonie
Betriebsdaten H.F. Klasse B Telephonie

λ	=	>30	>15	5[1])	m
Va	=	3000	2500	1800	V
Vg1	=	-120	-115	-90	V
Vg2	=	500	500	420	V
Vg3	=	0	0	0	V
Ia	=	215	230	350	mA
Ig2	=	30	30	50	mA
Vg1p	=	80	75	60	V
Wg2	=	15	15	21	W
Wia	=	640	580	630	W
Wa	=	450	450	495	W
Wo	=	190	130	135	W
η	=	30	22	21	%
m	=	100	100	100	%
Ig1	=	4	3	6	mA
Wig1	=	0,7	0,5	0,8	W

[1]) Two valves; deux tubes; zwei Röhren

Operating conditions H.F. class C
Caractéristiques d'utilisation H.F. classe C
Betriebsdaten H.F. Klasse C

	anode- and screen grid modulation modulation d'anode et de grille-écran Anoden- und Schirmgittermodulation		suppressor grid modulation modulation de grille d'arrêt Fanggittermodulation				
λ =	>30	>15	>30	>15	>30	>15	m
Va =	2500	2000	3000	2500	3000	2500	V
Vg1 =	-300	-300	-300	-300	-300	-300	V
Vg2 =	500	500	600	600	600	600	V
Vg3 =	0	0	-190	-170	-210	-200	V
Ia =	325	315	190	165	175	175	mA
Ig1 =	7	7	5	5	5	5	mA
Ig2 =	135	135	165	165	165	165	mA
Vg1p =	385	385	335	335	335	335	V
Wig1 =	2,7	2,7	1,7	1,7	1,7	1,7	W
Wg2 =	67	67	100	100	100	100	W
Wia =	815	630	570	415	525	425	W
Wa =	235	205	370	265	360	325	W
Wo =	580	425	200	150	165	100	W
η =	71	67,5	35	36	31	23,5	%
m =	100	100	80	80	100	100	%
Vg2p =	500	500					V
Vg3p =			190	170	210	200	V
Wmod =	440	350	0	0	0	0	W

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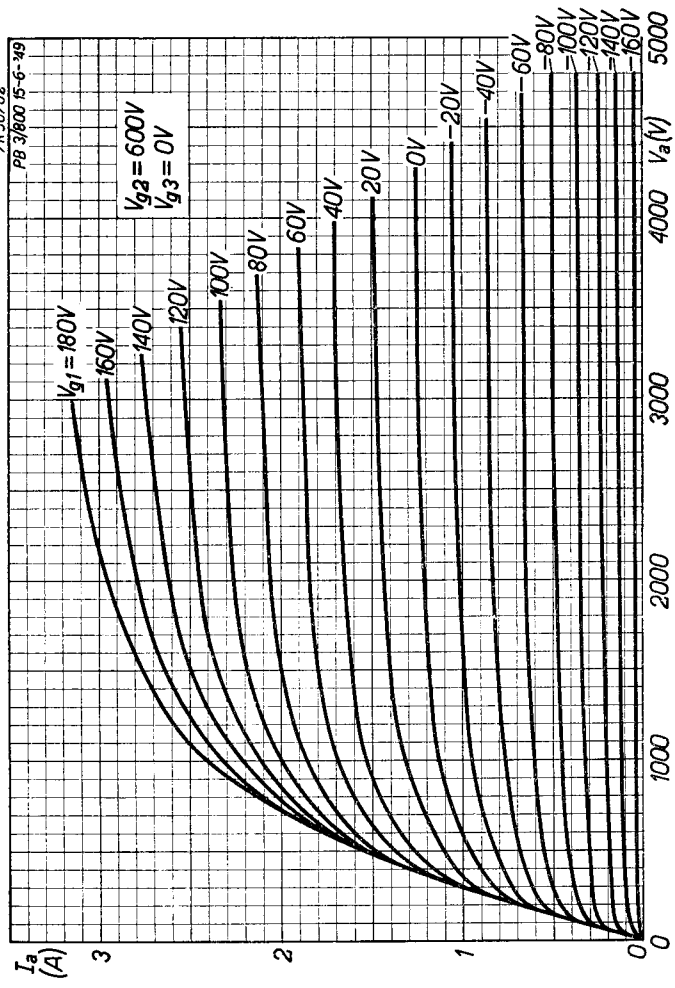
Operating conditions as L.F. class B amplifier and modulator, two valves
Caractéristiques d'utilisation comme amplificatrice et modulatrice B.F. classe B, deux tubes
Betriebsdaten als N.F. Verstärker und Modulator Klasse B, zwei Röhren

Va	=		3000	V
Vg1	=		-160	V
Vg2	=		600	V
Vg3	=		0	V
Raa	=		8,8	kΩ
Vg1g1p	=	0	360	V
Ia	=	2x50	2x385	mA
Ig1	=	0	2x6	mA
Ig2	=	2x8	2x105	mA
Wig1	=	0	2x1,1	W
Wg2	=	2x4,8	2x63	W
Wia	=	2x150	2x1155	W
Wa	=	2x150	2x355	W
Wo	=	0	1600	W
η	=	-	69	%


7R50702
PB 3/800 15-6-'49
$V_{g2} = 600V$
$V_{g3} = 0V$
$V_{g1} = 180V$
160V
140V
120V
100V
80V
60V
40V
20V
0V
-20V
-40V
-60V
-80V
-100V
-120V
-140V
-160V
I_a (A)
V_a (V)
0
1
2
3
1000
2000
3000
4000
5000

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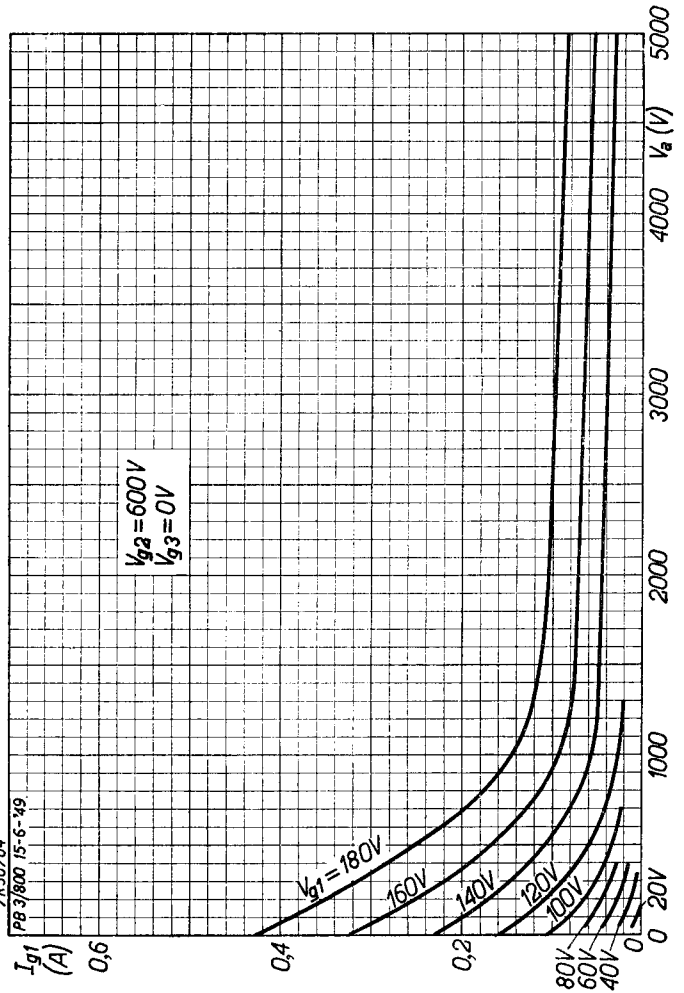
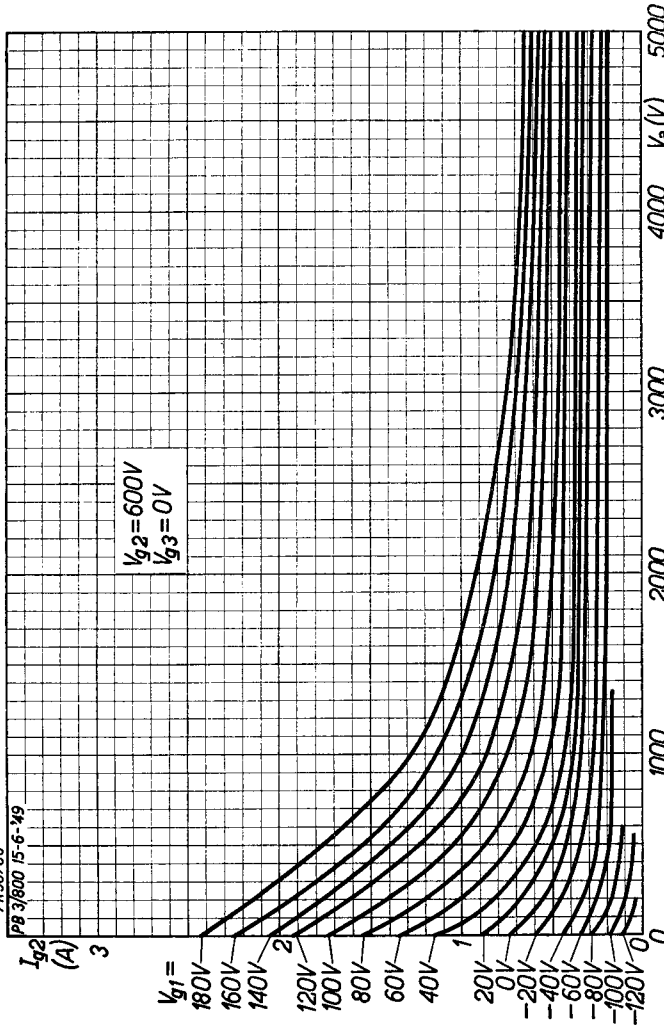

I_{g1} (A)
0,6
0,4
0,2
0
V_{g2}=600 V
V_{g3}=0 V
V_{g1}=180V
160V
140V
120V
100V
80V
60V
40V
20V
0
1000
2000
3000
4000
5000
V_a (V)
PB 3/800 15-6-'49.
7R50704

B


7R30706
PB 3/800 15-6-'49
I_{g2} (A)
3
2
1
0
V_{g1} =
180V
160V
140V
120V
100V
80V
60V
40V
20V
0V
−20V
−40V
−60V
−80V
−100V
−120V
V_{g2}=600V
V_{g3}=0V
1000
2000
3000
4000
5000
V_a (V)

PB 3/800

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D

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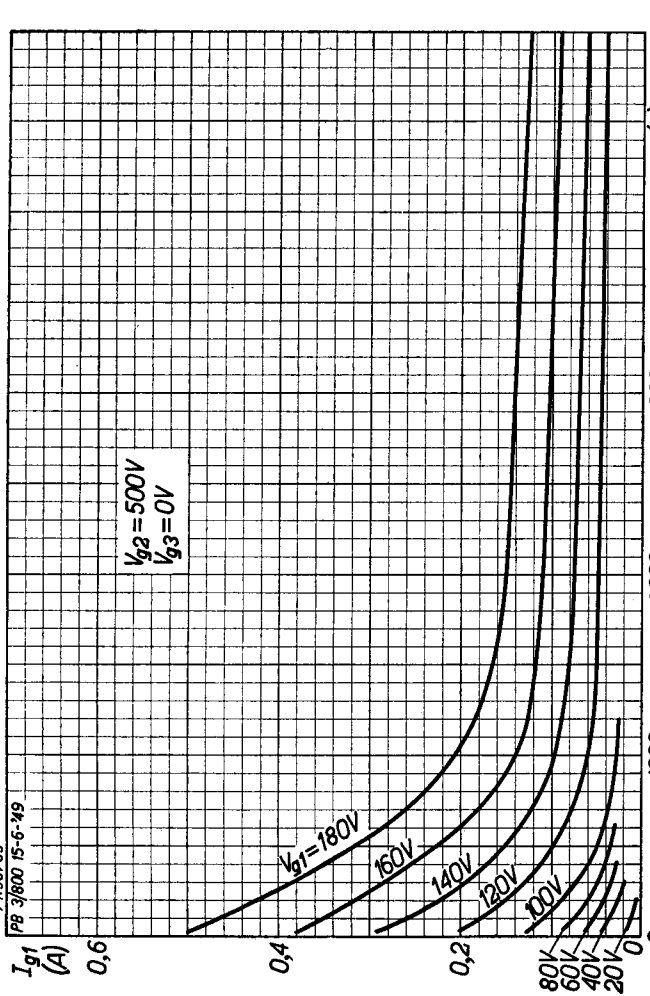
PB 3/800



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E

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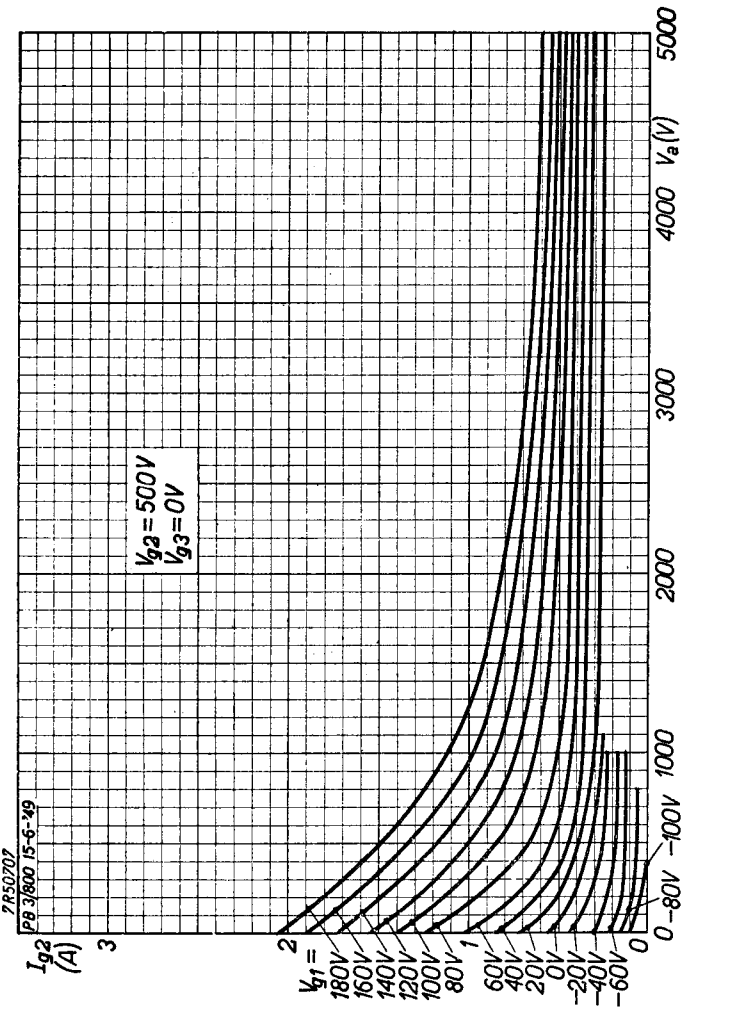
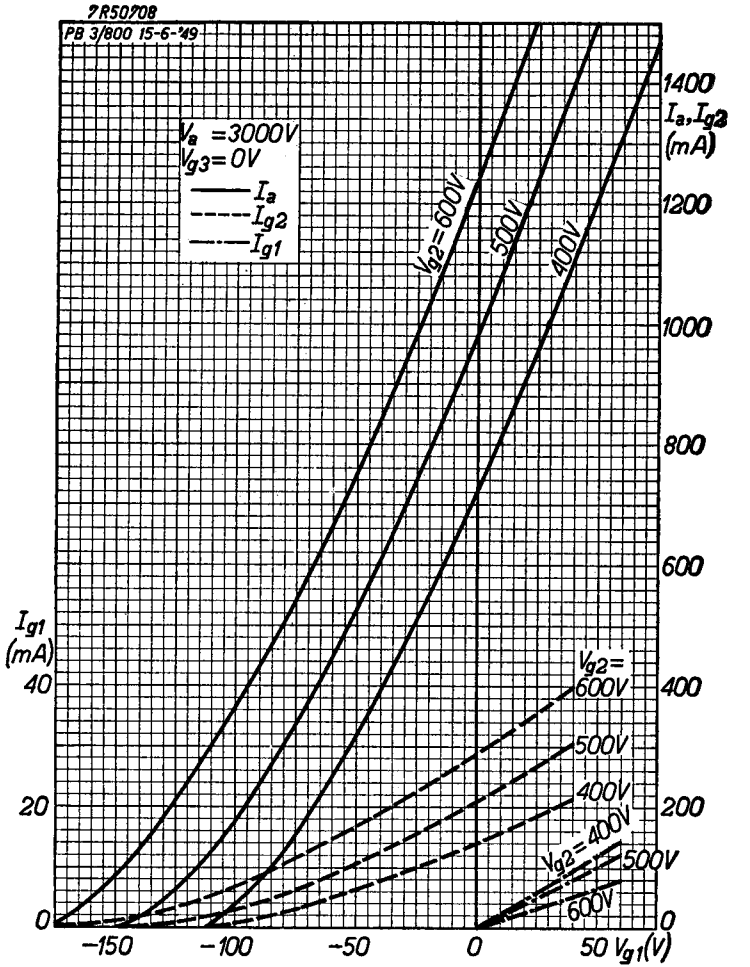

7R50707
PB 3/800 15-6-49
I_{g2} (A)
3
2
1
0
V_{g2} = 500 V
V_{g3} = 0 V
V_{g1} =
180V
160V
140V
120V
100V
80V
60V
40V
20V
0V
−20V
−40V
−60V
0
−80V
−100V
1000
2000
3000
4000
5000
V_a (V)


7R50708
PB 3/800 15-6-'49
V_a =3000V
V_{g3}=0V
I_a
I_{g2}
I_{g1}
V_{g2}=600V
500V
400V
I_a,I_{g2} (mA)
1400
1200
1000
800
600
400
200
0
I_{g1} (mA)
40
20
0
V_{g2}= 600V
500V
400V
V_{g2}=400V
500V
600V
−150
−100
−50
0
50 V_{g1}(V)

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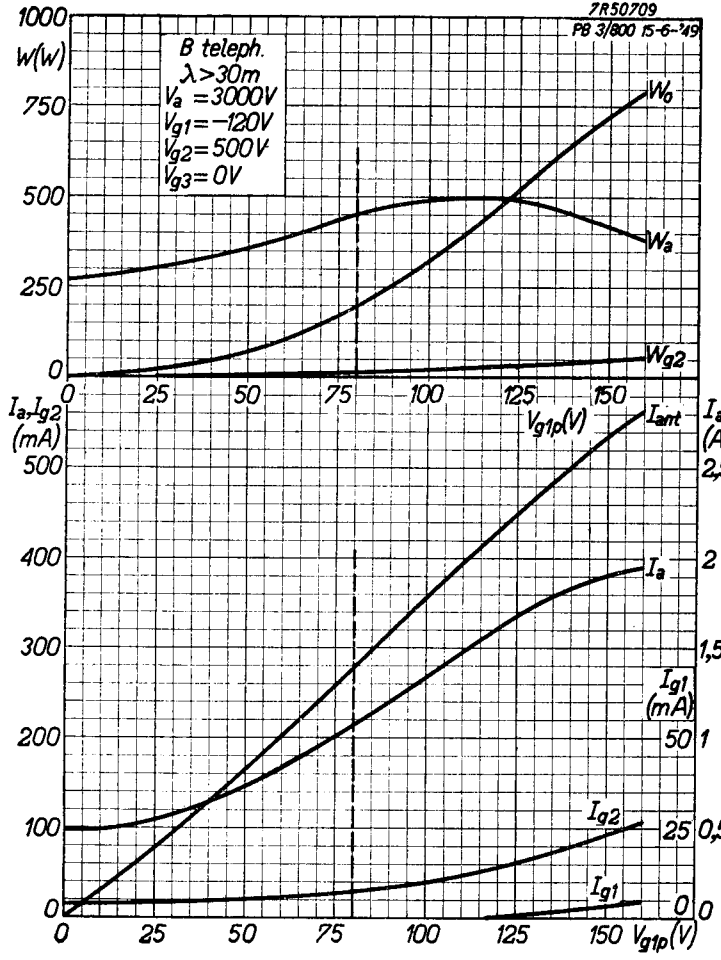

H

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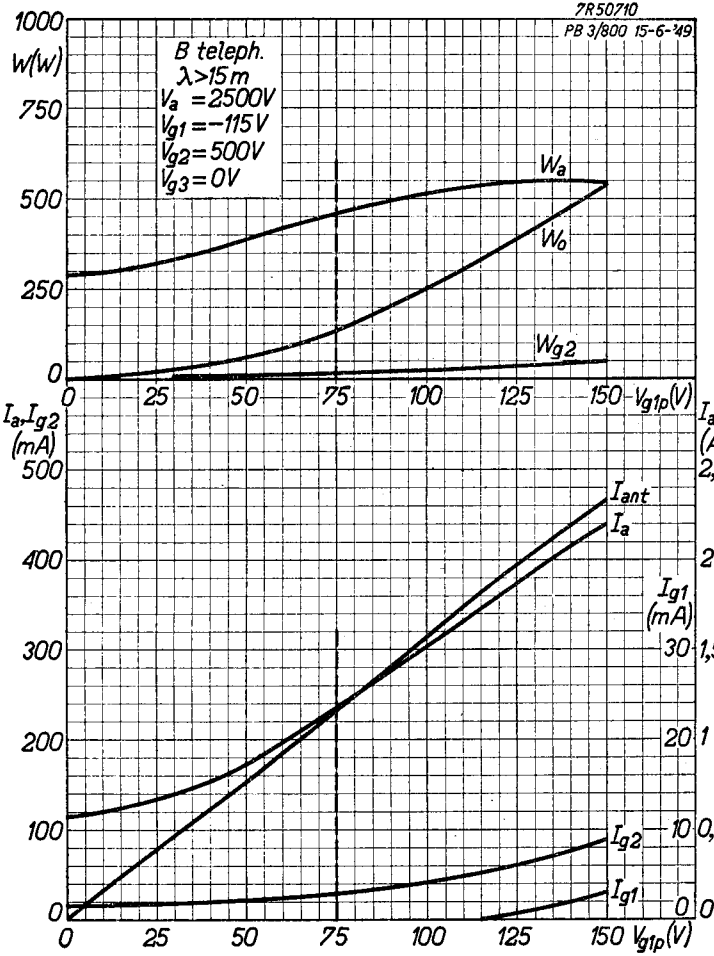

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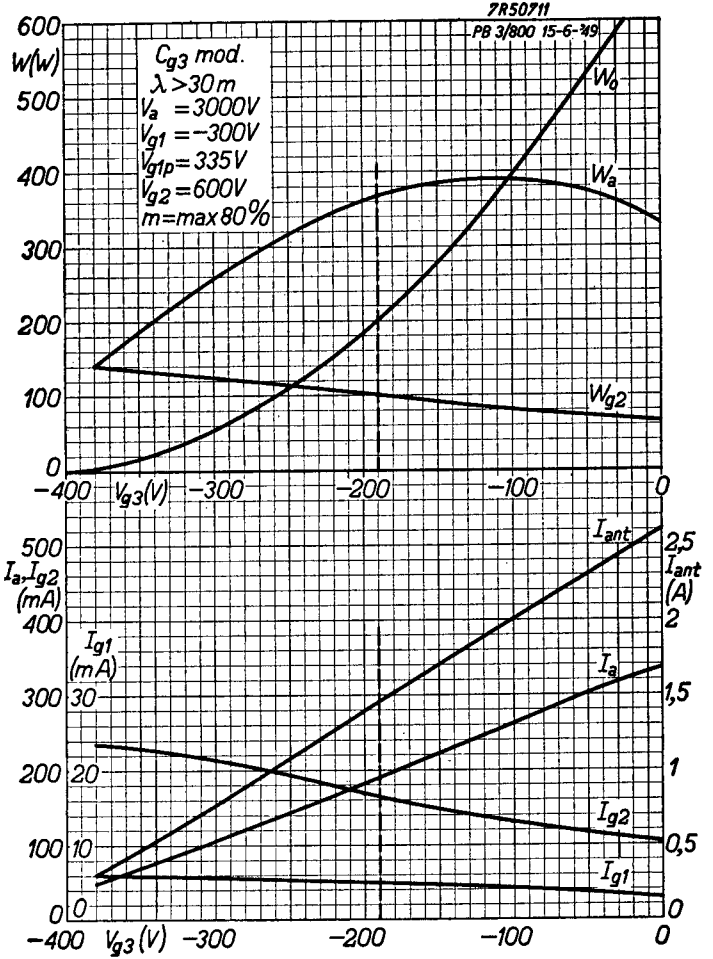
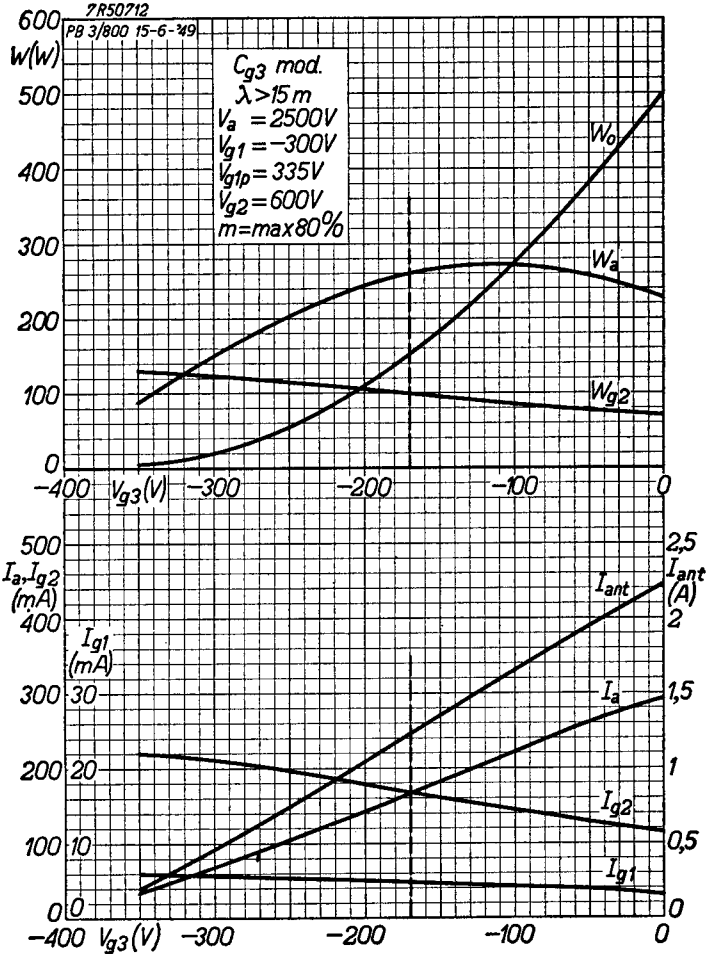

7R50711
PB 3/800 15-6-'49
C_{g3} mod.
$\lambda > 30$ m
$V_a = 3000$V
$V_{g1} = -300$V
$V_{g1p} = 335$V
$V_{g2} = 600$V
$m = \max 80\%$
W(w)
600
500
400
300
200
100
0
W_0
W_a
W_{g2}
−400
V_{g3}(V)
−300
−200
−100
0
I_a, I_{g2} (mA)
500
400
300
200
100
0
I_{g1} (mA)
30
20
10
0
I_{ant}
I_a
I_{g2}
I_{g1}
I_{ant} (A)
2,5
2
1,5
1
0,5
0


7R50712
PB 3/800 15-6-'49
C_{g3} mod.
λ>15 m
V_a = 2500V
V_{g1} = −300V
V_{g1p} = 335V
V_{g2} = 600V
m=max 80%
W(W)
600
500
400
300
200
100
0
W_o
W_a
W_{g2}
−400
V_{g3}(V)
−300
−200
−100
0
I_a,I_{g2} (mA)
500
400
300
200
100
0
I_{g1} (mA)
30
20
10
0
I_{ant}
I_a
I_{g2}
I_{g1}
2,5
2
1,5
1
0,5
0
I_{ant} (A)

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K

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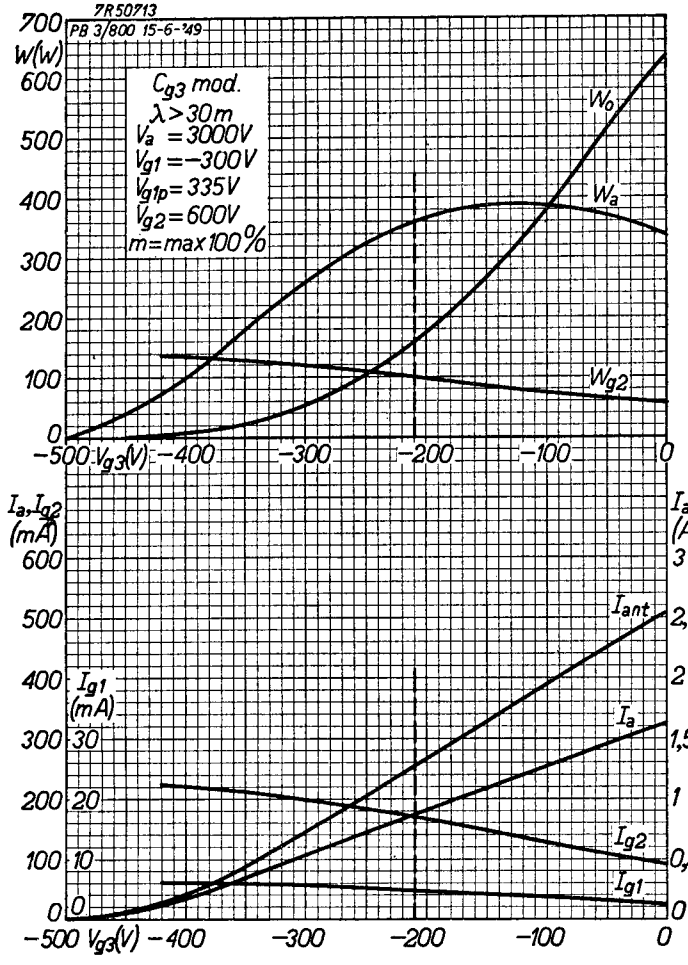
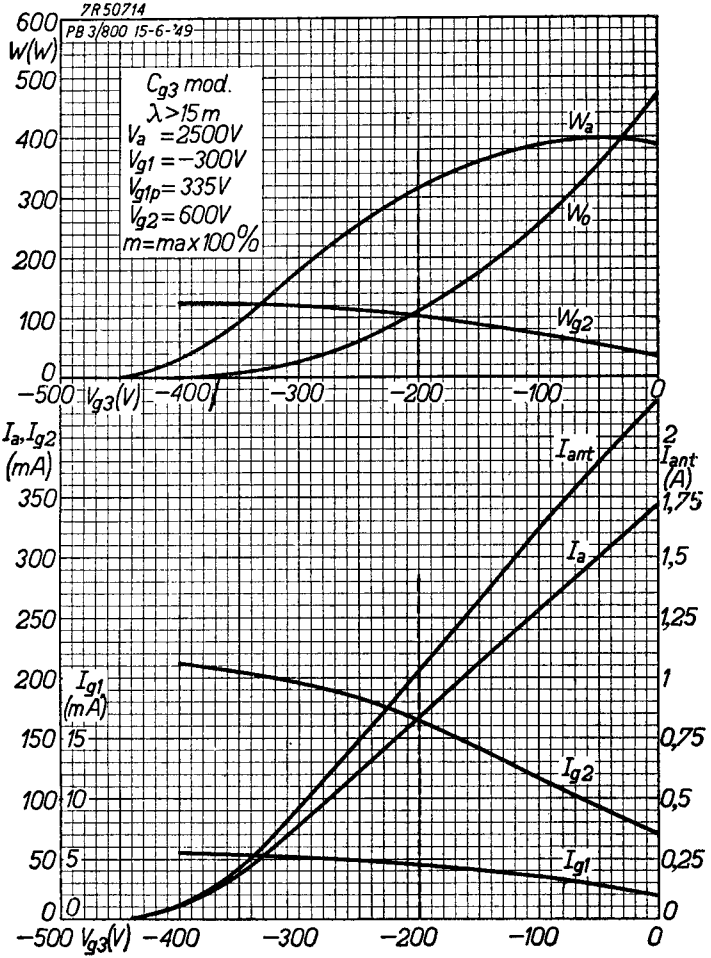

7R50713
PB 3/800 15-6-'49
C_{g3} mod.
$\lambda > 30$ m
$V_a = 3000$V
$V_{g1} = -300$V
$V_{g1p} = 335$V
$V_{g2} = 600$V
m = max 100%
W(w)
W_o
W_a
W_{g2}
V_{g3}(V)
I_a, I_{g2} (mA)
I_{ant} (A)
I_{g1} (mA)
I_{ant}
I_a
I_{g2}
I_{g1}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PB 3/800 15-6-'49
C_{g3} mod.
λ>15m
V_a =2500V
V_{g1} =−300V
V_{g1p}= 335V
V_{g2} =600V
m=max 100%
W_a
W_o
W_{g2}
W(W)
V_{g3}(V)
I_a,I_{g2} (mA)
I_{ant}
I_{ant} (A)
I_a
I_{g2}
I_{g1}
I_{g1} (mA)

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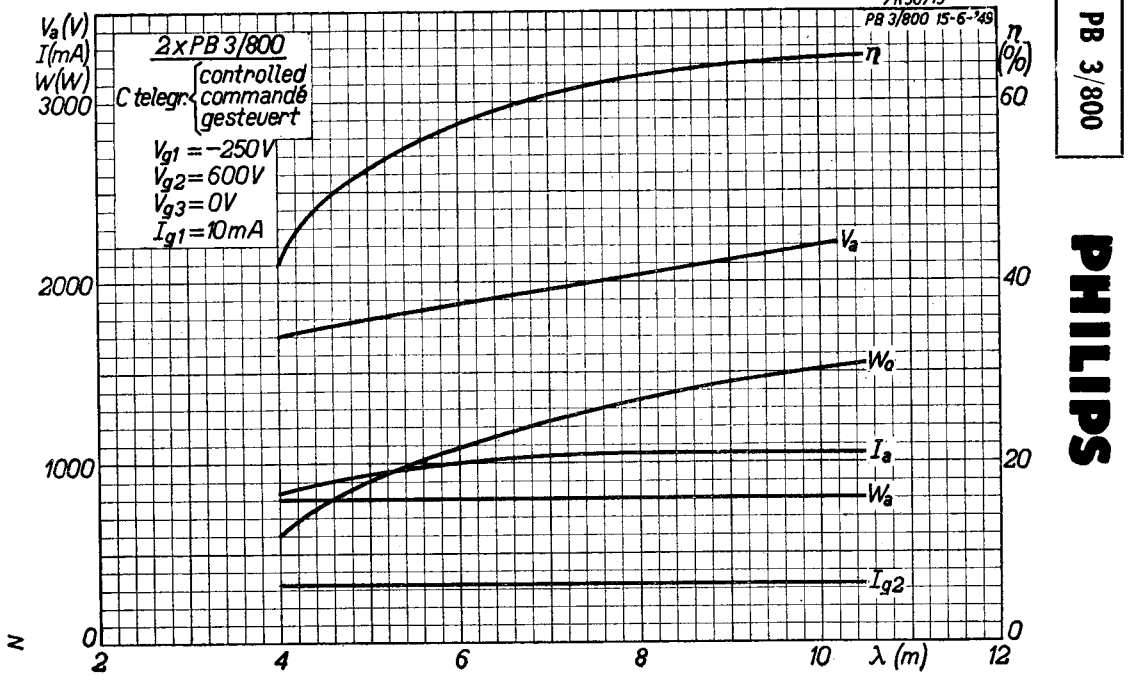
M


7R50715
PB 3/800 15-6-'49
2 x PB 3/800
C telegr: controlled commandé gesteuert
$V_{g1} = -250V$
$V_{g2} = 600V$
$V_{g3} = 0V$
$I_{g1} = 10mA$
V_a (V)
I (mA)
W (W)
3000
2000
1000
0
η (%)
60
40
20
0
η
V_a
W_o
I_a
W_a
I_{g2}
N
2
4
6
8
10
12
λ (m)

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page	sheet	date
1	1	1954.07.07
2	2	1954.07.07
3	3	1949.04.05
4	4	1949.04.05
5	5	1950.02.02
6	6	1950.02.02
7	A	1954.07.07
8	B	1954.07.07
9	C	1954.07.07
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13	G	1954.07.07
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16	J	1954.07.07
17	K	1954.07.07
18	L	1954.07.07
19	M	1954.07.07

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21, 22	FP	2000.04.04