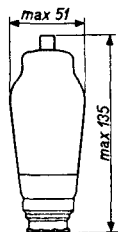
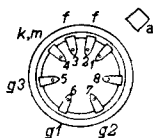
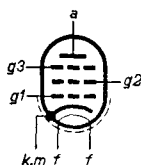


OUTPUT PENTODE
PENTHODE DE SORTIE
ENDPENTHODE

Heating : indirect by A.C.;
parallel supply
Chauffage : indirect par C.A.; $V_f = 6,3 \text{ V}$
alimentation en parallèle $I_f = 1,35 \text{ A}$
Heizung : indirekt durch Wechselstrom;
Parallelspeisung



Capacities
Capacités
Kapazitäten

$C_a = 10 \text{ pF}$
 $C_{g1} = 14,5 \text{ pF}$
 $C_{g1k} = 0,8 \text{ pF}$
 $C_{g1f} = 1,3 \text{ pF}$
 $C_{kf} = 8,5 \text{ pF}$

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OUTPUT PENTODE
PENTHODE DE SORTIE
ENDPENTODE

Heating :indirect; parallel supply
Chauffage:indirect; alimentation- parallèle
Heizung :indirekt; Parallelspeisung

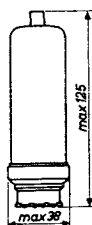
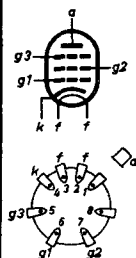
$V_f = 6,3 \text{ V}$

$I_f = 1,35 \text{ A}$

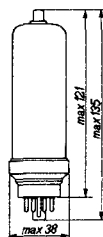
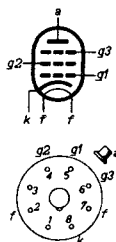
Dimensions in mm
Dimensions en mm
Abmessungen in mm

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4654K



Base
Culot P
Sockel



Base
Culot Octal
Sockel

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

V_a	=	250	V
V_{g2}	=	275	V
V_{g3}	=	0	V
R_k	=	175	Ω
I_a	=	72	mA
I_{g2}	=	8	mA
S	=	8,5	mA/V
μ_{g2g1}	=	11	-
R_i	=	22	k Ω
R_a	=	3,5	k Ω
$V_i(I_{g1}=+0,3\mu A)$	=	11,5	V_{eff}
$W_o(I_{g1}=+0,3\mu A)$	=	9,2	W
$dt_{ot}(I_{g1}=+0,3\mu A)$	=	11,4	%
$V_i(W_o = 50 \text{ mW})$	=	0,5	V_{eff}

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

V_a	=	250	V
V_{g2}	=	275	V
V_{g3}	=	0	V
R_k	=	175	Ω
I_a	=	72	mA
I_{g2}	=	8	mA
S	=	8,5	mA/V
μ_{g2g1}	=	11	-
R_i	=	22	k Ω
R_a	=	3,5	k Ω
V_i ($I_{g1}=+0,3 \mu A$)	=	11,5	V_{eff}
W_o ($I_{g1}=+0,3 \mu A$)	=	9,2	W
d ($I_{g1}=+0,3 \mu A$)	=	11,4	%
V_i ($W_o= 50$ mW)	=	0,5	V_{eff}

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

$R_{aa'}$	=	5	5	k Ω
R_{g2}	=	500	500	Ω
V_{g1}	=	-38	-32	V
V_{g3}	=	0	0	V
V_i	=	0 26,5 26,5	0 22,4 22,4	V_{eff}
V_{b_a}	=	425 425 400	375 375 350	V
V_a	=	420 400 375	370 350 325	V
$V_{b_{g2}}$	=	425 425 400	375 375 350	V
I_a	=	2x20 2x93 2x81,5	2x20 2x79 2x70	mA
I_{g2}	=	2x2,2 2x21 2x18	2x2,2 2x17 2x15	mA
W_o	=	0 48 39	0 35 29	W
d	=	- 2,5 4,2	- 2,5 4,0	%

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Operating characteristics class B and AB
Caractéristiques d'utilisation classe B et AB
Betriebsdaten Klasse B und AB

	B		B		AB		
$R_{aa} \sim$	5		5		6,5		k Ω
R_{g2}	500		500		2000		Ω
V_{g1}	-38		-32		-		V
R_k	-		-		265		Ω
V_{g3}	0		0		0		V
V_i	0	26,5	0	22,4	0	27	V_{eff}
V_{ba}	425	425	375	375	425	425	V
V_a	420	400	370	350	-	-	V
$V_a + V_{Rk}$	-	-	-	-	405	400	V
V_{bg2}	425	425	375	375	425	425	V
I_a	2x20	2x93	2x20	2x79	2x46,5	2x60	mA
I_{g2}	2x2,2	2x21	2x2,2	2x17	2x5,4	2x13	mA
W_o	0	48	0	35	0	27,5	W
dt_{tot}	-	2,5	-	2,5	-	5	%

Limiting values
Caractéristiques limites
Grenzdaten

V_{a0}	= max.	1200 V
V_a	= max.	600 V
W_a	= max.	18 W
V_{g20}	= max.	1000 V
V_{g2}	= max.	425 V
$W_{g2}(V_i=0)$	= max.	3 W
$W_{g2}(W_o = \text{max.})$	= max.	10 W
I_k	= max.	120 mA
$V_{g1}(I_{g1}=+0,3 \mu A)$	= max.	-1,3 V
$R_{g1}(A, AB)$	= max.	0,7 M Ω
$R_{g1}(B)$	= max.	0,5 M Ω
V_{kf}	= max.	50 V
R_{kf}	= max.	20 k Ω

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

Raa'	=	6,5	5	kΩ		
Rg2	=	2	0,5	kΩ		
Rk	=	265	195	Ω		
Vg3	=	0	0	V		
V1	=	0	27	0	22,5	V _{eff}
Vb _a	=	425	425	375	375	V
Va+V _{Rk}	=	405	400	355	350	V
Vb _{g2}	=	425	425	375	375	V
Ia	=	2x46,5	2x60	2x53	2x66,5	mA
Ig2	=	2x5,4	2x13	2x6,5	2x15,5	mA
Wo	=	0	27,5	0	26	W
d	=	-	5	-	3,5	%

Operating conditions class A in triode connection
 (g2 connected to anode)

Caractéristiques d'utilisation classe A en
 connexion triode (g2 reliée à l'anode)

Betriebsdaten Klasse A in Triodenschaltung
 (g2 verbunden mit Anode)

V _b	=	375	V
Vg3	=	0	V
Rk	=	470	Ω
Ra	=	3	kΩ
I _a	=	50	mA
V _i	=	17,5	V _{eff}
W _o	=	4,5	W
d	=	9	%

Operating conditions class AB in triode connection
(g2 connected to anode)

Caractéristiques d'utilisation classe AB en connexion triode (g2 reliée à l'anode)

Betriebsdaten Klasse AB in Triodenschaltung
(g2 verbunden mit Anode)

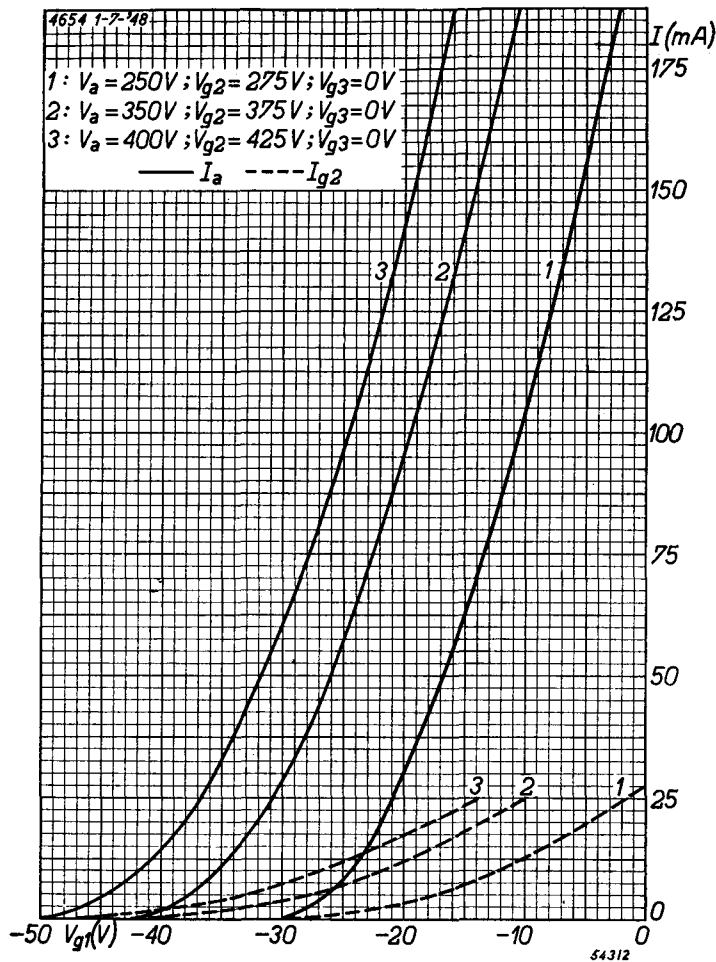
Vb	=	400	V
Vg3	=	0	V
Rk	=	280	Ω
Raa'	=	5,5	k Ω
Vi	=	0 21	V _{eff}
Ia	=	2x50 2x56	mA
Wo	=	0 13	W
d	=	- 1	%

Limiting values

Caractéristiques limites

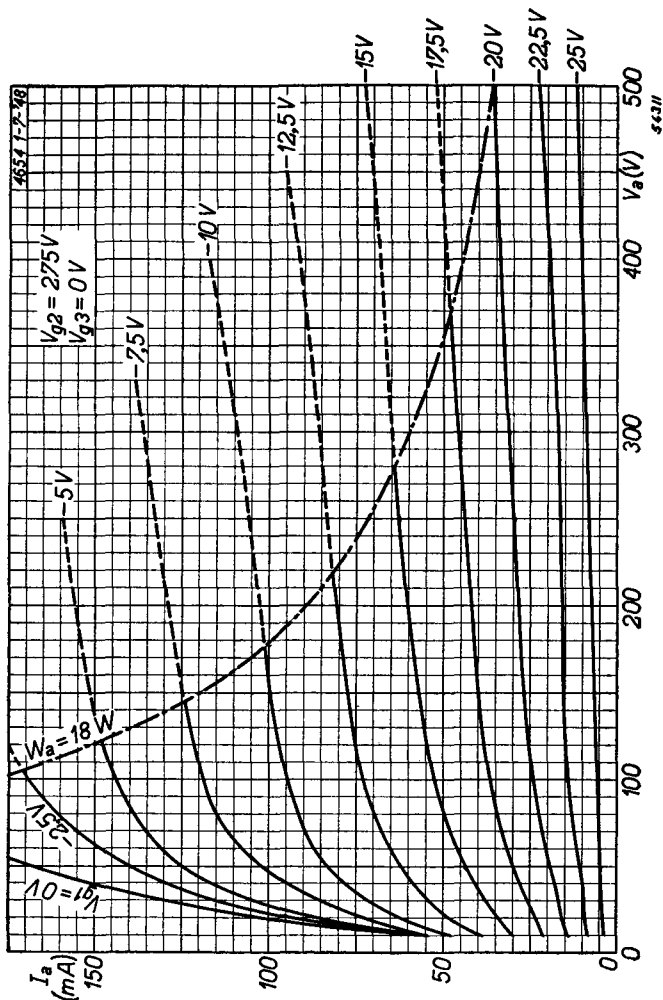
Grenzdaten

Va _o	= max.	1200 V
Va	= max.	600 V
Wa	= max.	18 W
Vg2 _o	= max.	1000 V
Vg2	= max.	425 V
Wg2 (Vi = 0)	= max.	3 W
Wg2 (Wo = max.)	= max.	10 W
Ik	= max.	120 mA
Vg1 (Igl = +0,3 μ A)	= max.	-1,3 V
Rgl (A, AB)	= max.	0,7 M Ω
Rgl (B)	= max.	0,5 M Ω
Vfk	= max.	50 V
Rfk	= max.	20 k Ω



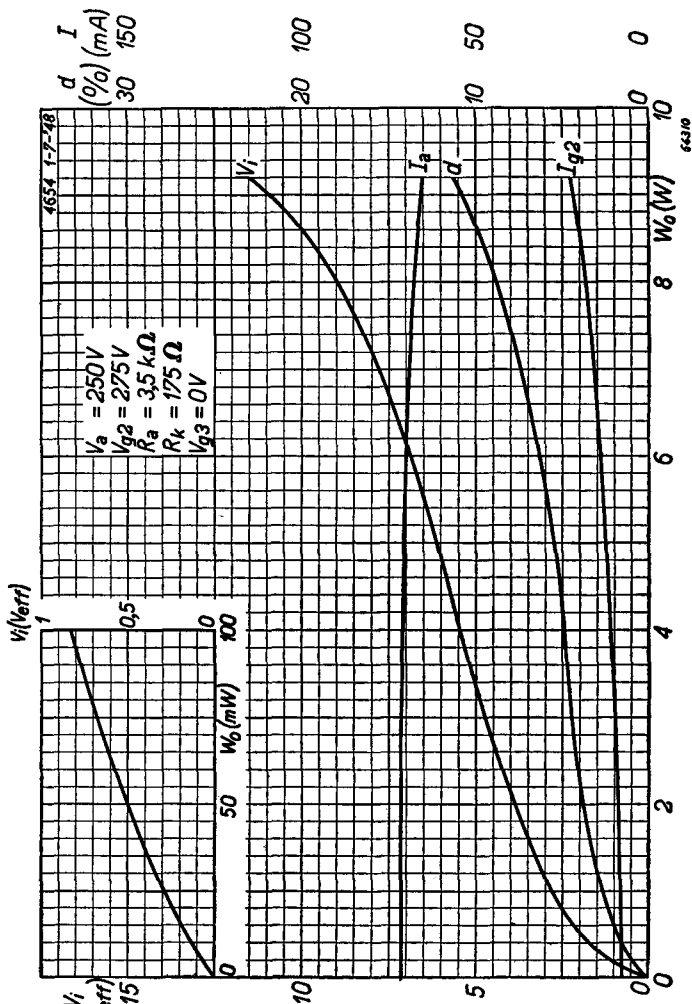
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"Miniwatt"



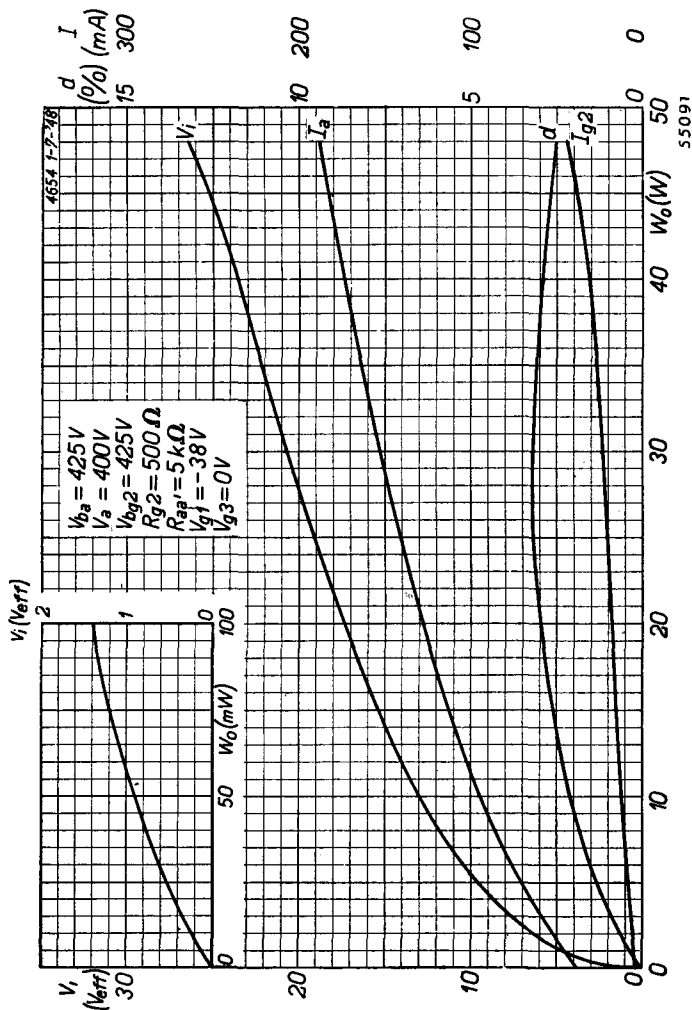
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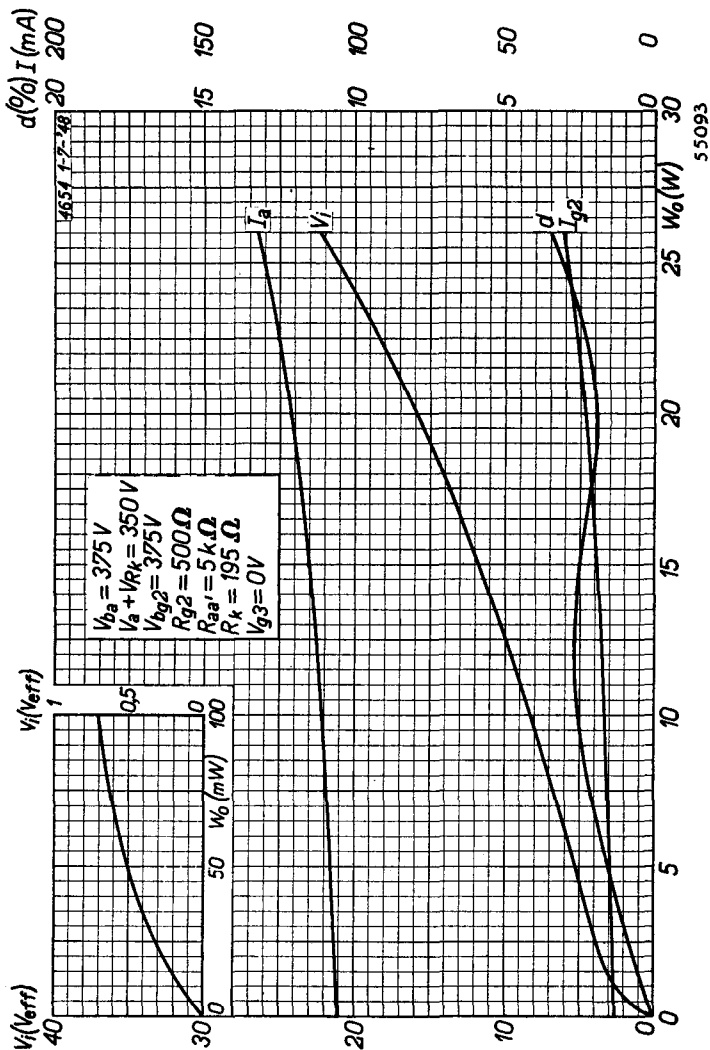
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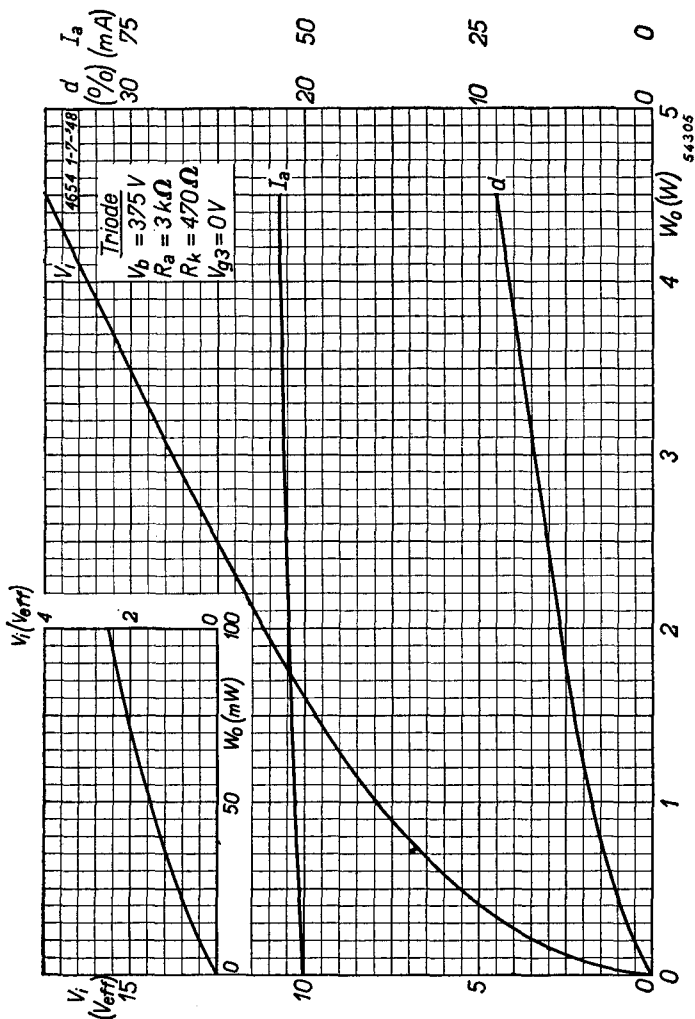
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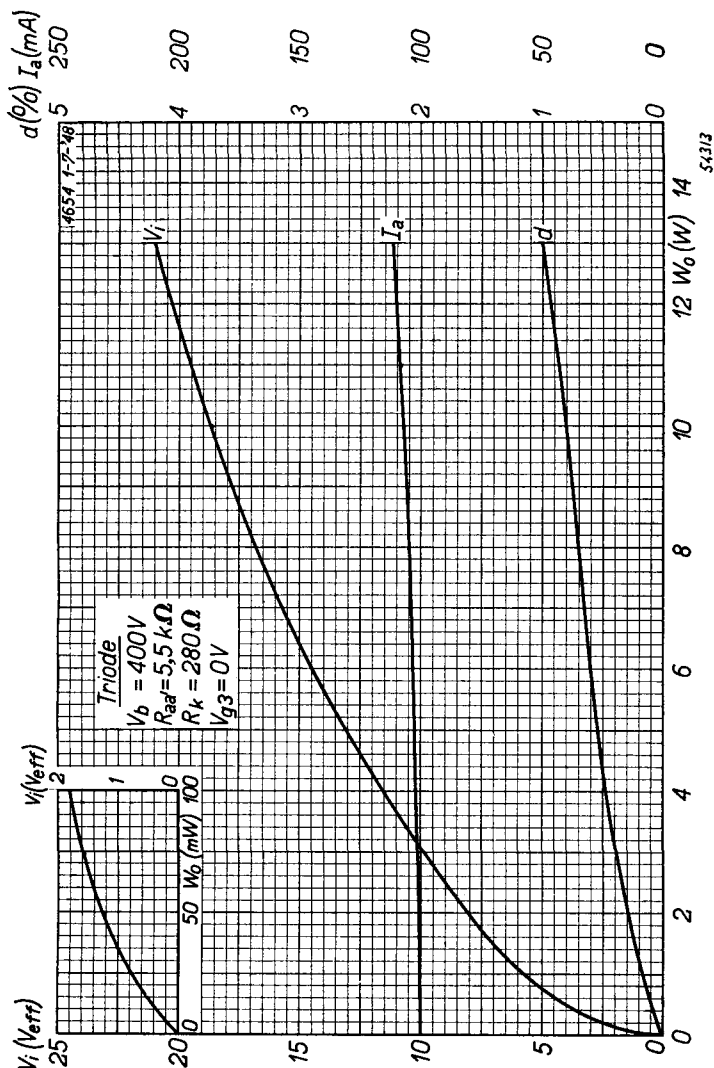
"Miniwatt"





"Miniwatt"







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