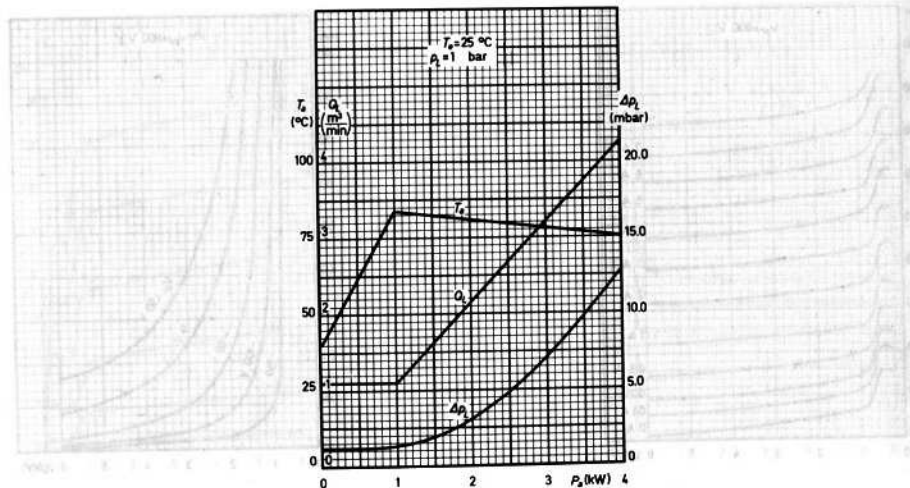


4L3T-U1



Transmitting Tetrodes

used as af or rf amplifier and oscillator

4G10T, 4G11T	Anode cooling vapour
4L10T	forced air
4V10T	water; separate jacket

Cathode, Heating

Directly heated thoriated tungsten

V_f	=	8.5	$V \pm 3\%$
I_f	=	110	A
I_{f0}	=	300	A
R_{f0}	=	0.008	Ω

Capacitances

C_{ag1}	=	0.5	pF
C_{ak}	=	0.1	pF
C_{g1k}	=	40	pF
C_{ag2}	=	30	pF
C_{g2k}	=	10	pF
C_{g2g1}	=	60	pF

Characteristics

S^1	=	20	mA/V
μ_{g2g1}^1	=	10	
I_e^2	=	28	A

Maximum Ratings³

f	=	30	MHz
V_a	=	10	kV
I_a	=	1.2	A
P_o	=	8.2	kW

AF Class B Amplifier, two tubes in push-pull

Operating Characteristics

V_a	=	10	kV
V_{g2}	=	1.5	kV
$-V_{g1}$	=	150	V
V_{g1g1} pp	=	400	V
R_{aa}	=	8.8	k Ω
I_a	=	2×1.1	A
I_{g2}	=	2×0.5	A
I_{g1}	=	2×0.1	A
P_i	=	40	W
P_{ia}	=	22	kW
P_a	=	2×4.4	kW
P_o	=	13.2	kW
η	=	60	%

Maximum Ratings

V_a	=	12	kV
V_{g2}	=	1.5	kV
I_a	=	2×2	A
P_a	=	2×10	kW
P_{g2}	=	2×750	W
P_{g1}	=	2×300	W

¹ $V_a = 8$ kV, $V_{g2} = 1.5$ kV, $I_a = 1.2$ A

² $V_a = V_{g1} = V_{g2} = 700$ V

³ RF Telegraphy, Class C

Class B Modulated RF Power Amplifier

Operating Characteristics

f	=	30	MHz
V _a	=	10	kV
V _{g2}	=	1.5	kV
-V _{g1}	=	150	V
V _{g1p}	=	150	V
I _a	=	0.55	A
I _{g2}	=	0.5	A
P _{ia}	=	5.5	kW
P _a	=	3.85	kW
P _o	=	1.65	kW
η	=	30	%
m	=	100	%
I _{g1}	=	0.1	A
P _i	=	30	W

Maximum Ratings

V _a	=	12	kV
V _{g2}	=	1.5	kV
I _a	=	0.7	A
P _a	=	10	kW
P _{g2}	=	750	W
P _{g1}	=	200	W

RF Class C Anode Modulation

Operating Characteristics

f	=	30	MHz
V _a	=	8	kV
V _{g2}	=	1.5	kV
-V _{g1}	=	400	V
V _{g1p}	=	500	V
I _a	=	1.2	A
I _{g2}	=	0.5	A
I _{g1}	=	0.1	A
P _i	=	50	W
P _{ia}	=	9.6	kW
P _a	=	3.1	kW
P _o	=	6.5	kW
η	=	68	%
m	=	100	%
P _{mod}	=	4.8	kW

Maximum Ratings

V _a	=	8	kV
V _{g2}	=	1.5	kV
I _a	=	1.5	A
P _a	=	7	kW
P _{g2}	=	750	W
P _{g1}	=	200	W

RF Class C Telegraphy

Operating Characteristics

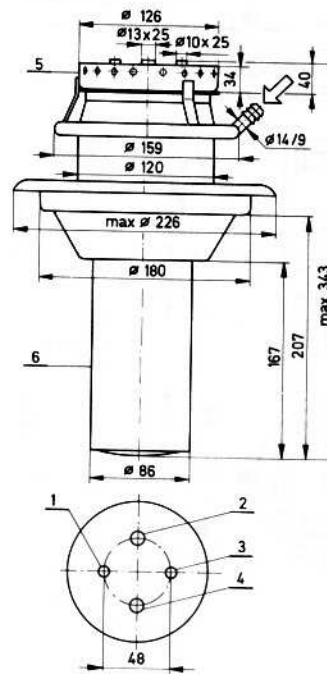
f	=	30	MHz
V _a	=	10	kV
V _{g2}	=	1.5	kV
-V _{g1}	=	400	V
V _{g1p}	=	500	V
I _a	=	1.2	A
I _{g2}	=	0.5	A
I _{g1}	=	0.1	A
P _i	=	50	W
P _{ia}	=	12	kW
P _a	=	3.8	kW
P _o	=	8.2	kW
η	=	68	%

Maximum Ratings

V _a	=	12	kV
V _{g2}	=	1.5	kV
I _a	=	1.5	A
P _a	=	10	kW
P _{g2}	=	750	W
P _{g1}	=	300	W

4G10T

Dimensions in mm



Terminals

- 1 - g₁
- 2 - f
- 3 - g₁
- 4 - f
- 5 - g₂
- 6 - a

Mounting Position

Vertical, anode down

Mass

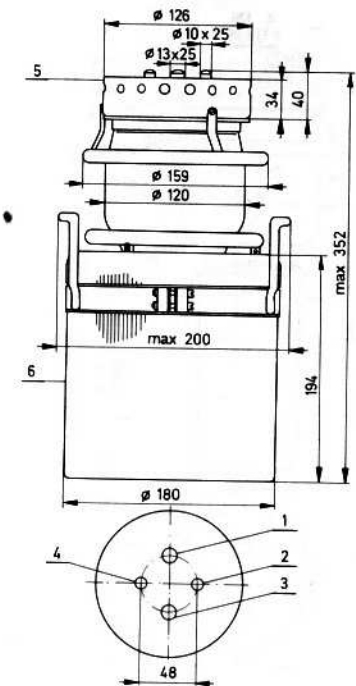
2 kg

Cooling

P _a	=	8	8	kW
Q _v	=	0.4	0.4	m ³ /min
Q _w	=	0.23	0.26	dm ³ /min
Q _L	=	0.1	0.1	m ³ /min
T _{ew}	=	20	90	°C
T _b	=	max. 180	max. 180	°C

4L10T

Dimensions in mm



Terminals

- 1 - f
- 2 - g₁
- 3 - f
- 4 - g₁
- 5 - g₂
- 6 - a

Mounting Position

Vertical, anode down

Mass

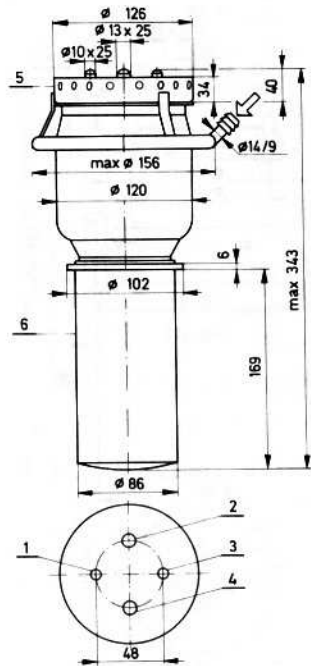
12.6 kg

Cooling

P _a	=	10	kW
Q _L	=	20	m ³ /min
Δp _L	=	8	mbar
T _b	=	max. 180	°C

4V10T

Dimensions in mm



Terminals

- 1 - g₁
- 2 - f
- 3 - g₁
- 4 - f
- 5 - g₂
- 6 - a

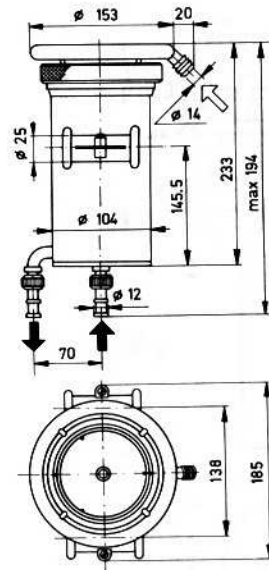
Mounting Position

Vertical, anode down

Mass

1.45 kg

Water Jacket



Cooling

P _a	=	10	kW
Q _w	=	15	dm ³ /min
Q _L	=	0.1	m ³ /min
p _w	=	max. 35	N/cm ²
T _b	=	max. 180	°C

4G11T

Mounting Position

Vertical, anode down

Mass

8 kg

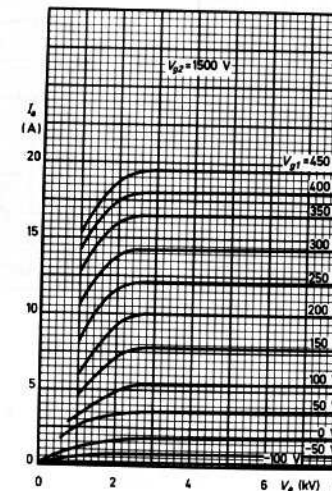
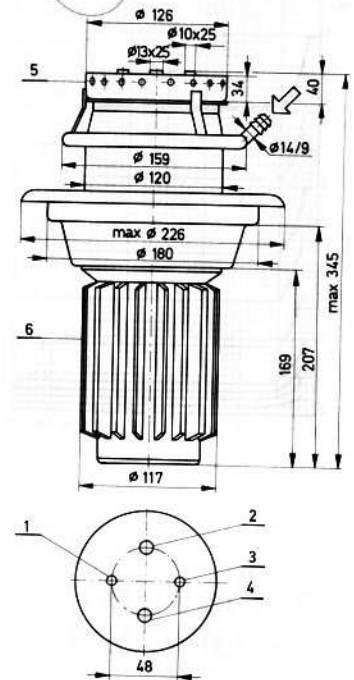
Terminals

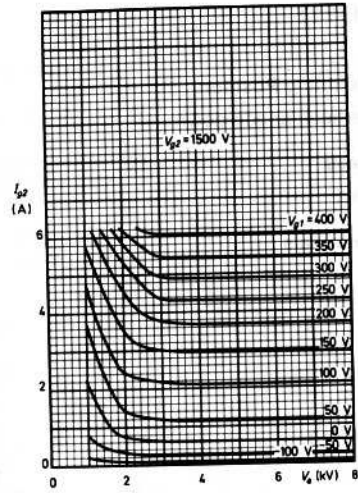
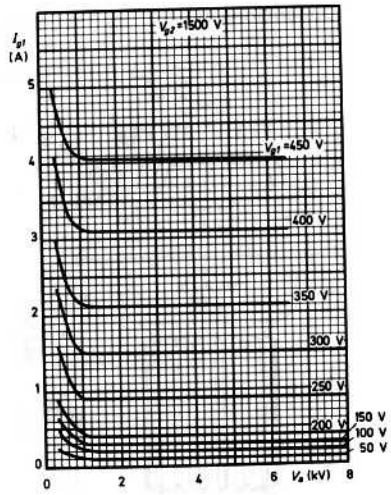
- 1 - g₁
- 2 - f
- 3 - g₁
- 4 - f
- 5 - g₂
- 6 - a

Cooling

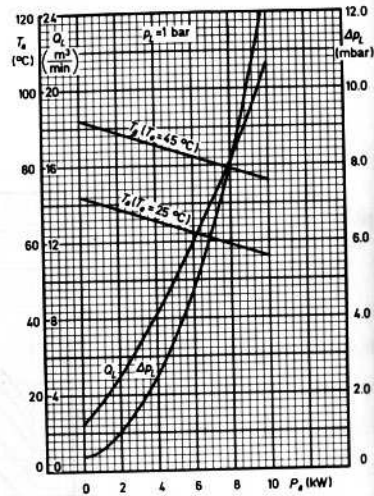
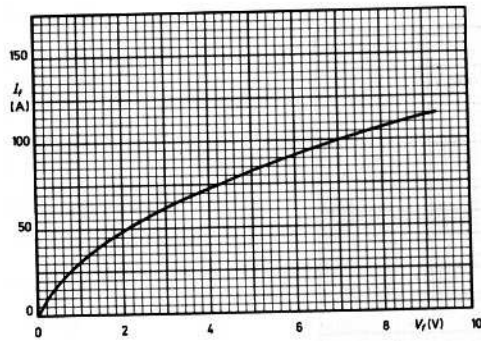
P _a	=	12	12	kW
Q _w	=	0.32	0.36	m ³ /min
Q _L	=	0.55	0.62	dm ³ /min
Q _L	=	0.1	0.1	m ³ /min
T _{e w}	=	20	90	°C
T _b	=	max. 180	max. 180	°C

Dimensions in mm





4L10T



HIGH VOLTAGE RECTIFIERS