

AIR COOLED V.H.F. POWER TETRODE

Forced air cooled coaxial power tetrode in metal-ceramic construction primarily intended for use as a linear broad-band amplifier in T V transmitters in the bands I and III. This type is also very suitable for A.M. and F.M. broadcast, A.F. modulator applications and in T V transposer service.

QUICK REFERENCE DATA			
Class AB linear amplifier (vision)			
Frequency	f	175, 25	MHz
Anode voltage	V_a	5	kV
Output power in load	W_l	8, 6	kW
Power gain	G	24	
Class B amplifier			
Frequency	f	260	MHz
Anode voltage	V_a	7	kV
Output power in load	W_l	10, 5	kW
Power gain	G	32	
R.F. Class C telegraphy or F.M. telephony			
Frequency	f	260	MHz
Anode voltage	V_a	7	kV
Output power in load	W_l	11	kW
Power gain	G	32	
TV transposer service			
Frequency	f	175 to 225	MHz
Anode voltage	V_a	4	kV
Output power in load	W	2, 5	kW
Power gain	G	30	

HEATING: direct; filament thoriated tungsten, mesh type

Filament voltage	V_f	6, 3	$V \pm 5\%$
Filament current	I_f	120	A
Filament peak starting current	I_{fp}	max. 750	A
Cold filament resistance	R_{f0}	6	m Ω
Waiting time	T_w	min. 1	s

TYPICAL CHARACTERISTICS

Anode voltage	V_a	5	kV
Grid No. 2 voltage	V_{g2}	600	V
Anode current	I_a	1, 45	A
Transconductance	S	30	mA/V
Amplification factor	μ_{g2g1}	7, 5	

CAPACITANCES

	(grounded cathode)	(grounded grid)	
Input	$C_{g1(a)}$ 90	$C_{f(a)}$ 48	pF
Output	$C_{a(g1)}$ 16	$C_{a(f)}$ 16, 4	pF
Anode to grid No. 1	C_{ag1} 0, 55		pF
Anode to filament		C_{af} 0, 15	pF

TEMPERATURE LIMITS

Absolute max. envelope temperature	t_{env} max.	240	$^{\circ}\text{C}$
Recommended max. seal temperature	t max.	200	$^{\circ}\text{C}$

COOLING

See curves

Direction of air flow: see drawing.

ACCESSORIES

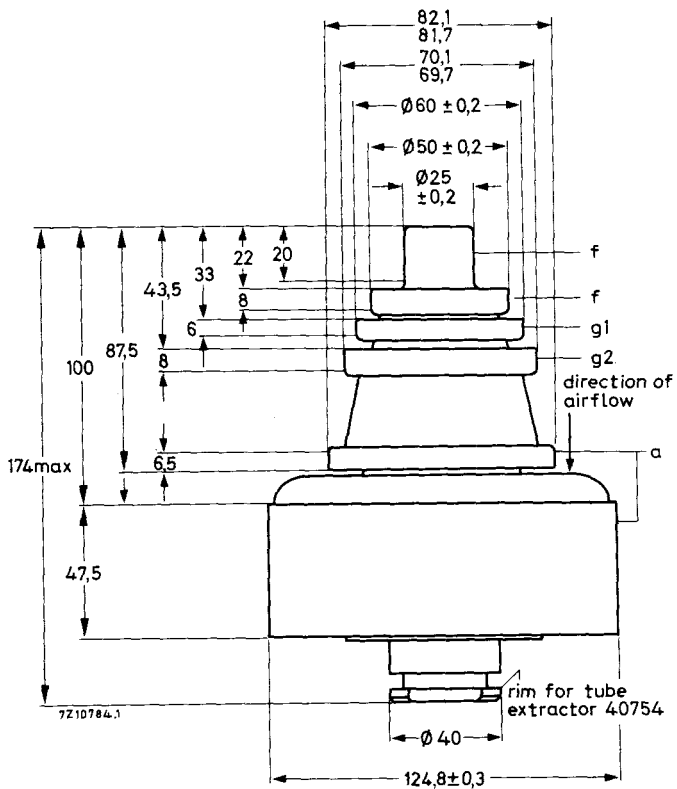
Band I amplifier circuit assembly (vision)	type 40757
Band I amplifier circuit assembly (sound)	type 40758
Band III amplifier circuit assembly (vision)	type 40745
Band III amplifier circuit assembly (sound)	type 40746

MECHANICAL DATA

Dimensions in mm

Net weight: approx. 3,1 kg

Mounting position: Vertical with anode up or down.



R.F. CLASS B SERVICE

Unless otherwise stated the voltages are specified with respect to cathode

LIMITING VALUES (Absolute max. rating system)

Frequency	f	up to	260	MHz
Anode voltage	V_a	max.	8,5	kV
Grid no. 2 voltage	V_{g2}	max.	1	kV
Grid no. 1 voltage	$-V_{g1}$	max.	500	V
Anode current	I_a	max.	4	A
Anode input power	W_{ia}	max.	18,5	kW
Anode dissipation	W_a	max.	6	kW
Grid no. 2 dissipation	W_{g2}	max.	80	W
Grid no. 1 dissipation	W_{g1}	max.	40	W
Cathode current	I_k	max.	4,5	A

OPERATING CONDITIONS : grounded grid

Frequency	f	up to	260	MHz
Anode voltage	V_a		7	kV
Grid no. 2 voltage	V_{g2}		600	V
Grid no. 1 voltage	V_{g1}		-120	V ¹⁾
Anode current, no signal condition	I_a		0,2	A
Anode current	I_a		2,2	A
Grid no. 2 current	I_{g2}		80	mA
Grid no. 1 current	I_{g1}		125	mA
Anode input power	W_{ia}		15,4	kW
Anode dissipation	W_a		4,3	kW
Output power in load	W_l		10,5	kW
Efficiency, total	η		68	%
Driving power	W_{dr}		325	W
Power gain	$\frac{W_l}{W_{dr}}$		32	

Note see page 8

R.F. CLASS C TELEGRAPHY or F.M. TELEPHONY

LIMITING VALUES (Absolute max. rating system)

Frequency	f	up to	260	MHz
Anode voltage	V_a	max.	8,5	kV
Grid no.2 voltage	V_{g2}	max.	1	kV
Grid no.1 voltage	$-V_{g1}$	max.	500	V
Anode current	I_a	max.	4	A
Anode input power	W_{ia}	max.	18,5	kW
Anode dissipation	W_a	max.	6	kW
Grid no.2 dissipation	W_{g2}	max.	80	W
Grid no.1 dissipation	W_{g1}	max.	40	W
Cathode current	I_k	max.	4,5	A

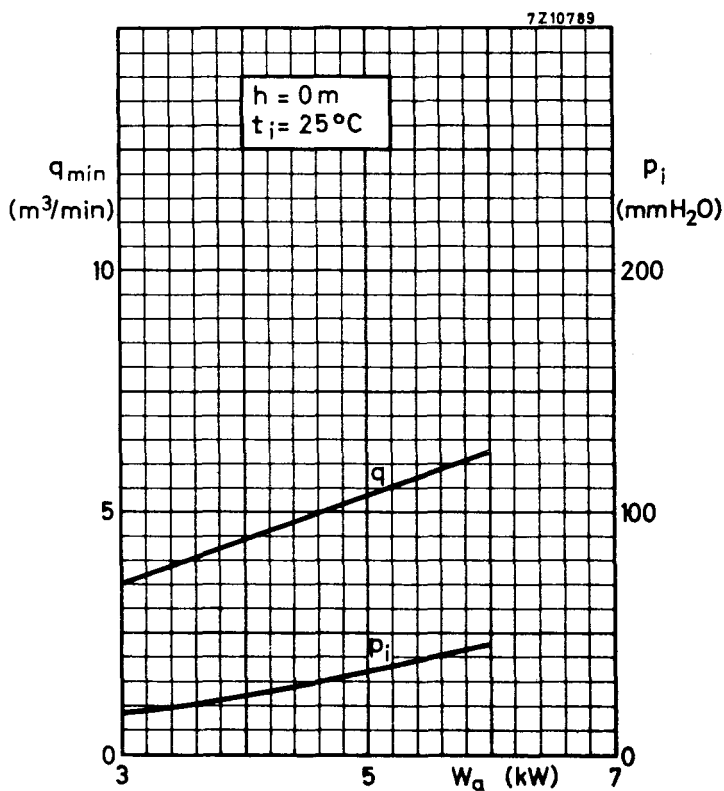
OPERATING CONDITIONS

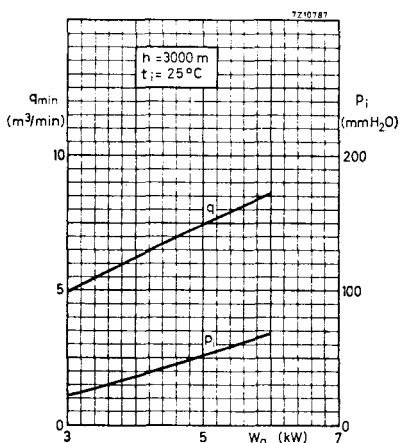
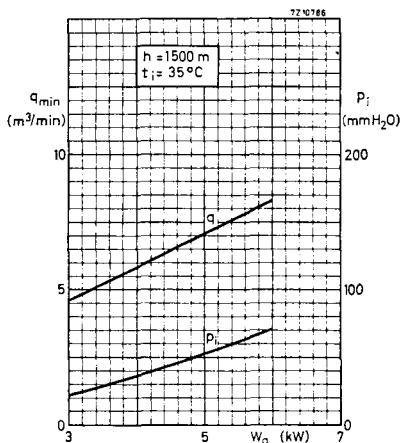
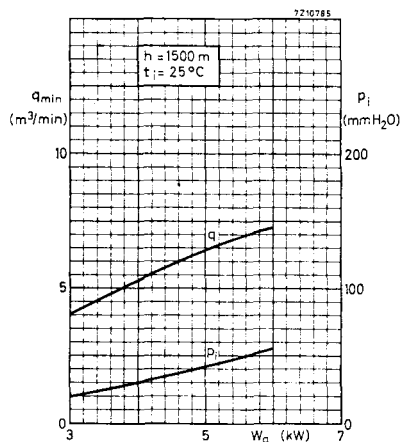
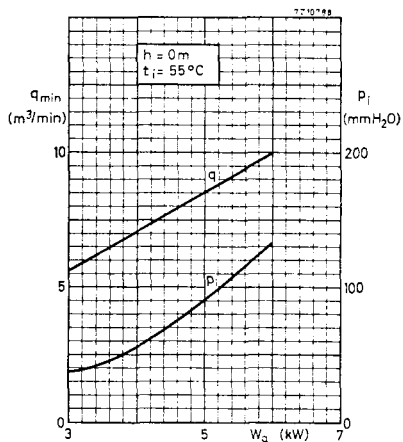
Frequency	f	260	MHz
Anode voltage	V_a	7	kV
Grid no.2 voltage	V_{g2}	600	V
Grid no.1 voltage	V_{g1}	-120	V ¹⁾
Anode current, no signal condition	I_a	200	mA
Anode current	I_a	2,3	A
Grid no.2 current	I_{g2}	80	mA
Grid no.1 current	I_{g1}	150	mA
Anode input power	W_{ia}	16,1	kW
Anode dissipation	W_a	5	kW
Output power in load	W_f	11	kW
Efficiency, total	η	68	%
Driving power	W_{dr}	325	W
Power gain	$\frac{W_f}{W_{dr}}$	32	

¹⁾ See page 8

NOTES

- 1) To be adjusted for the stated no signal anode current.
- 2) With double tuned circuit.
- 3) Black signal including line sync pulses
- 4) A picture/sync ratio of 75/25 for the outgoing signal requires a ratio of max. 70/30 for the incoming signal in which case the sync compression sync in/out = 30/25.
- 5) Measured with a saw tooth amplitude, running from 17% to 75% of the peak sync value, with superimposed a 4,43 MHz sine wave with a 10% peak to peak value.
- 6) At c.w. output power = 2,5 kW
- 7) Three-tone test method (vision carrier -8 dB, sound carrier -7 dB, sideband signal -17 dB with respect to peak sync = 0 dB).





7Z10804

