AIR COOLED R.F. POWERTRIODE

Forced-air cooled coaxial power triode in metal-ceramic construction primarily intended for use as R.F. class AB linear broadband amplifier in TV transposer service at frequencies up to 1000 MHz.

QUICK REFERENCE DATA			
Transposer service (combined sound and vision)			
Frequency	f	470 to 860	MHz
Anode voltage	V_a	2500	V
Output power in the load (sync)	W_ℓ	110	W
Power gain	G	16,5	dB

HEATING : indirect, by a.c. (50 Hz to 400 Hz) or d.c.; oxide coated cathode.

Heater voltage	V_f	6,0 to 6,3	V ±5% [1]
Heater current	I_f	4,8 to 5,8	A
Cathode heating time	T_h	min. 180	s

CAPACITANCES

Anode to grid	C_{ag}	6,8 to 8	pF
Grid to cathode and heater	$C_{g/kf}$	20 to 30	pF
Anode to cathode and heater	$C_{a/kf}$	90 to 180	fF

TYPICAL CHARACTERISTICS

Anode voltage	V_a	2	kV
Anode current	I_a	400	mA
Transconductance	S	70	mA/V
Amplification factor	μ	90	

TEMPERATURE LIMITS

Absolute max. temperature measured at reference points	t	max. 250	°C

To obtain optimum life, this temperature should not exceed 200 °C.

1) The heater voltage must be adjusted between 6,0 and 6,3 V.
For optimum performance (linearity) the voltage set must be maintained within ±2% for transposer service, or ±5% for other applications.

COOLING

Anode: forced air

W_a (W)	t_i (^oC)	q_{min} (m^3/min)	p_i (mm H_2O)
1000	25	0,7	2

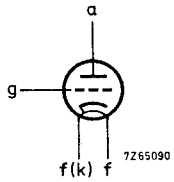
Other terminals: low velocity air flow.
When only the heater voltage is applied, the heater and heater/cathode terminals should also be cooled.
Cooling air and voltages may be switched off simultaneously.

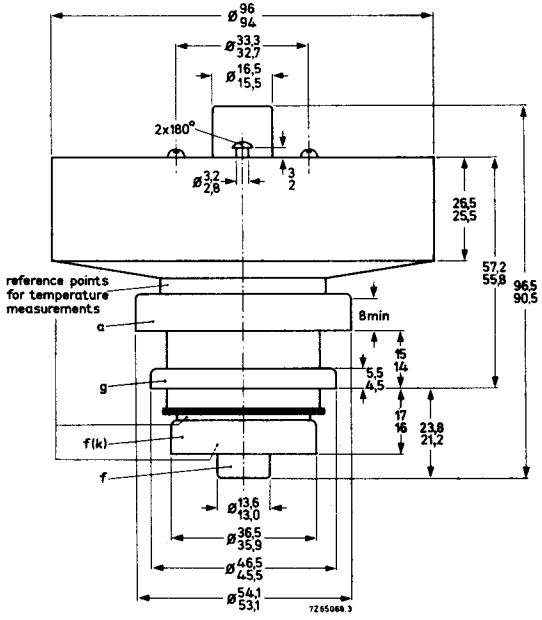
MECHANICAL DATA

Dimensions in mm

Net weight: approx. 1000 g

Mounting position: any





The radiator and the terminals are situated within concentric cylinders of the following dimensions:

Radiator	97,0 dia
Anode terminal	55,1 dia
Grid terminal	47,0 dia
Heater/cathode terminal	37,0 dia
Heater terminal	14,5 dia

R.F. CLASS AB AMPLIFIER FOR TV TRANSPOSER SERVICE grounded grid

LIMITING VALUES (Absolute max. rating system)

Frequency	f	up to	1000	MHz
Anode voltage	V_a	max.	3500	V
Grid voltage	$-V_g$	max.	200	V
Anode dissipation	W_a	max.	1800	W
Grid current	I_g	max.	± 5	mA
Cathode current	I_k	max.	550	mA [1]

OPERATING CONDITIONS , grounded grid [2][3]

Standard		CCIR-G	
Frequency	f	470 to 860	MHz
Anode voltage	V_a	2500	V
Grid voltage [4]	V_g	-25	V
Anode current, no signal [4]	I_a	200 to 300	mA
Anode current at zero dB level (vision carrier)	I_a	420 (<500)	mA
Grid current	I_g	≈ 0	mA
Driver output power (sync)	W_{dr}	4	W
Output power in load (sync)	W_l	110	W
Power gain	G	16,5	dB
Intermodulation products	d	-60 < -58	dB dB

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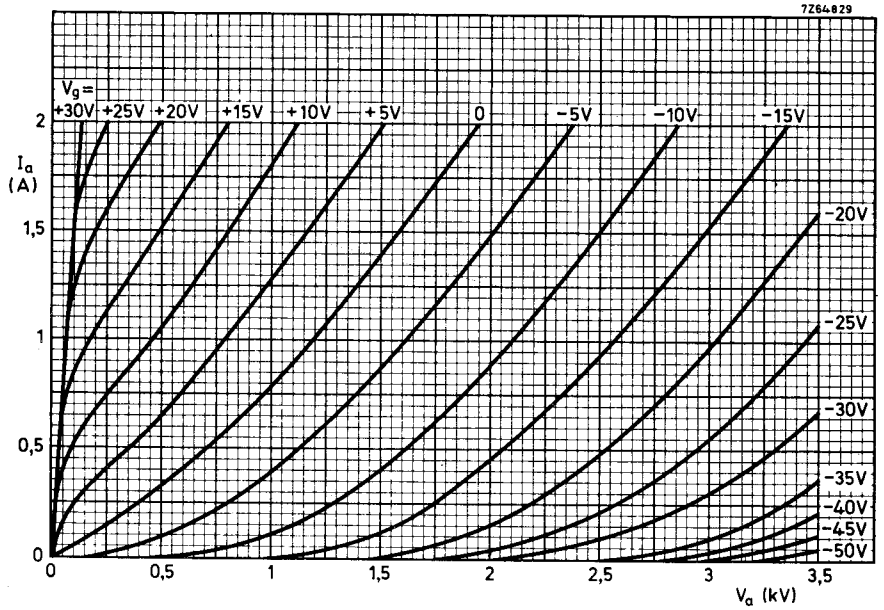
[1]) During a short period, for adjustment of the transmitter, I_k max. = 700 mA.

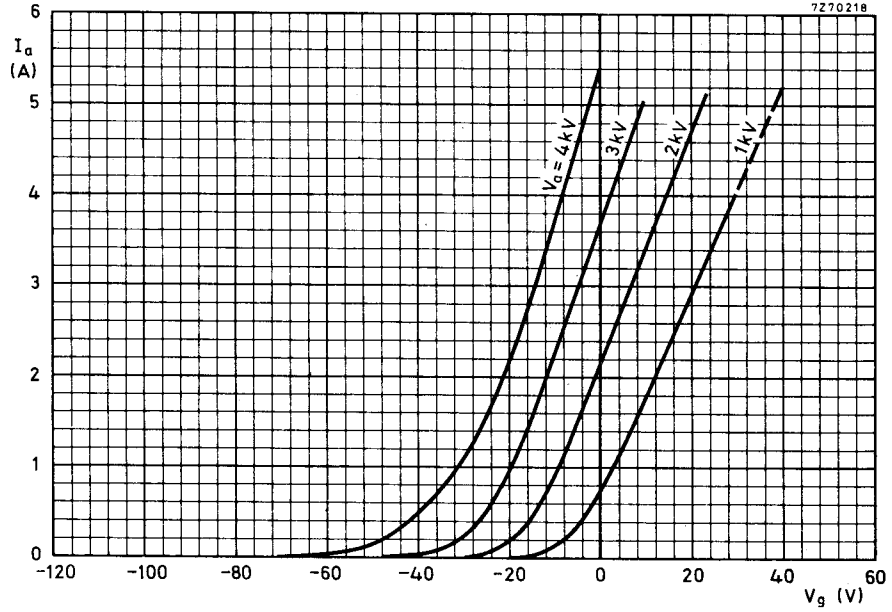
[2]) Negative modulation, positive synchronization, combined sound and vision.

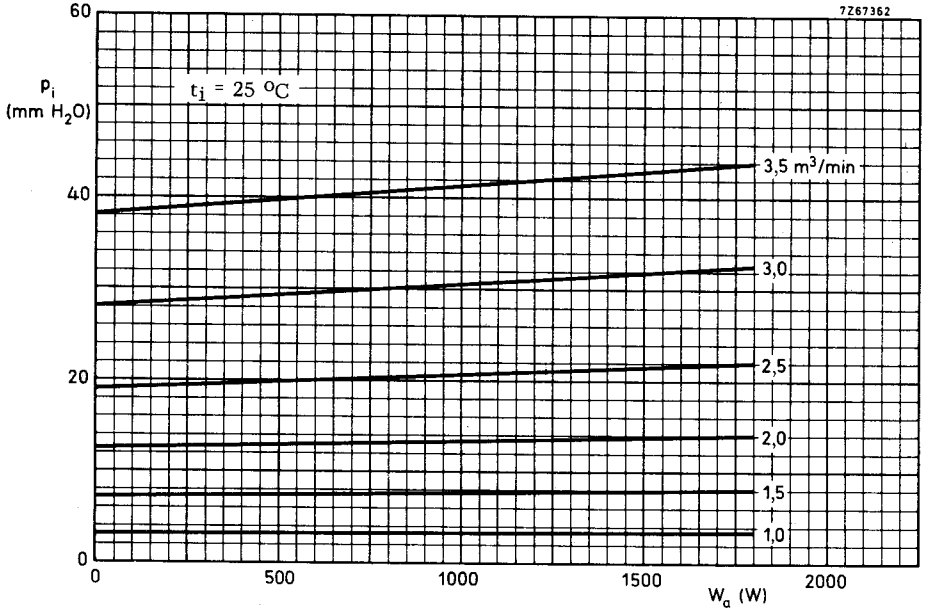
[3]) R.F. driving power should be applied after the heater and electrode voltages.

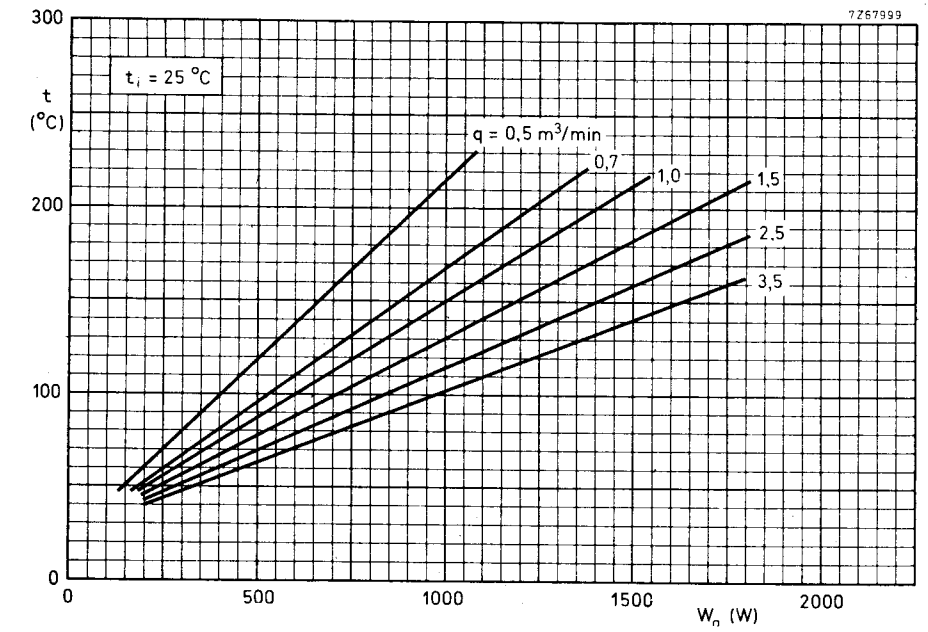
[4]) To be adjusted for the zero-signal anode current stated on the measuring report supplied with each tube.
Range values for equipment design -10 to -40 V.
The stated no-signal anode current results in optimum linearity.

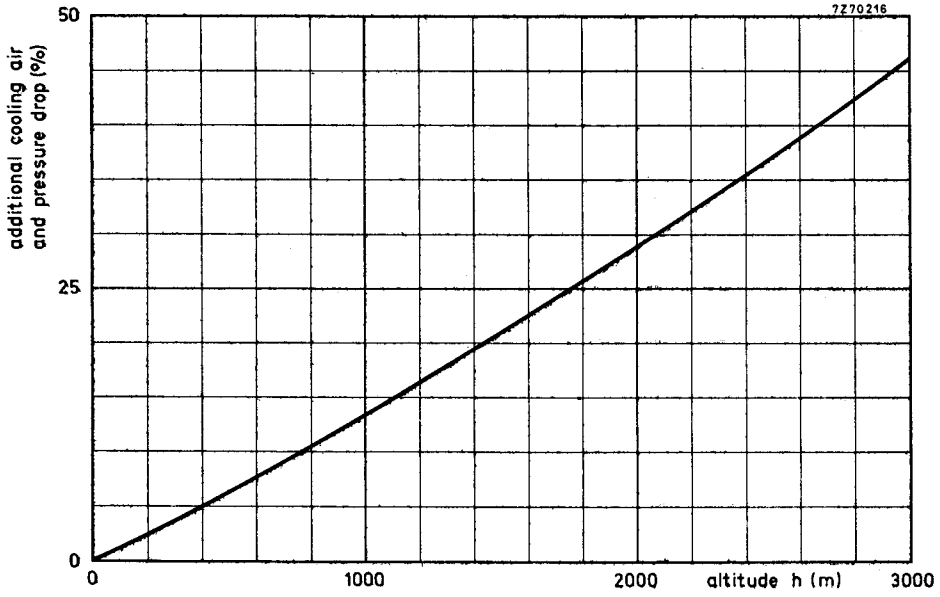
[5]) Three-tone method (vision carrier -8 dB, sound carrier -10 dB, sideband signal -16 dB with respect to peak sync level = 0 dB).

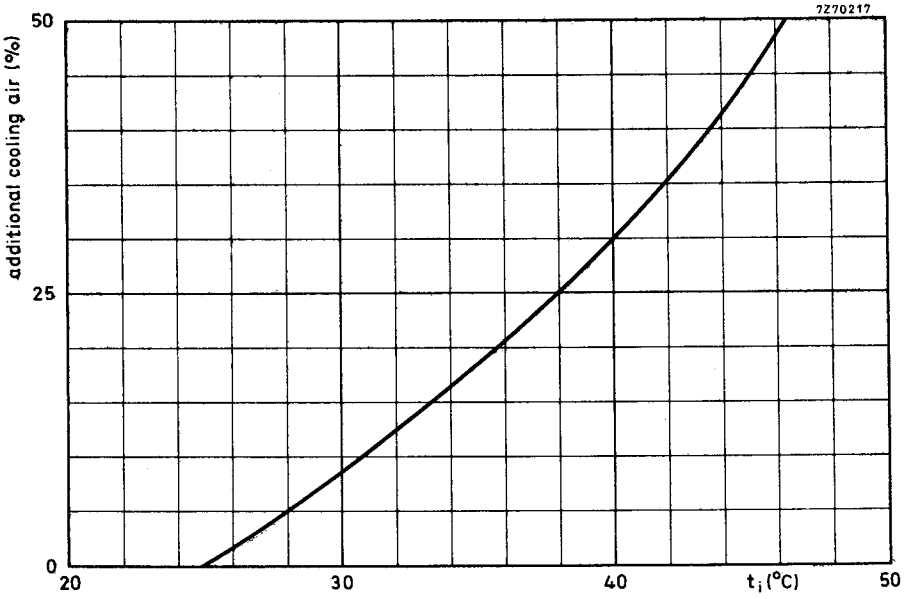

7Z64829
V_g =
+30V
+25V
+20V
+15V
+10V
+5V
0
-5V
-10V
-15V
-20V
-25V
-30V
-35V
-40V
-45V
-50V
I_a (A)
0
0,5
1
1,5
2
2,5
3
3,5
V_a (kV)


7Z70218
I_a (A)
0
1
2
3
4
5
6
V_a = 4kV
3kV
2kV
1kV
-120
-100
-80
-60
-40
-20
0
20
40
60
V_g (V)


7Z67362
p_i (mm H_2O)
t_i = 25 °C
3,5 m³/min
3,0
2,5
2,0
1,5
1,0
60
40
20
0
0
500
1000
1500
2000
W_a (W)


7Z67999
t (°C)
t_i = 25 °C
q = 0,5 m³/min
0,7
1,0
1,5
2,5
3,5
300
200
100
0
0
500
1000
1500
2000
W_a (W)


7Z70216
additional cooling air and pressure drop (%)
50
25
0
0
1000
2000
altitude h (m)
3000


7Z70217
additional cooling air (%)
50
25
0
20
30
40
t_i (°C)
50