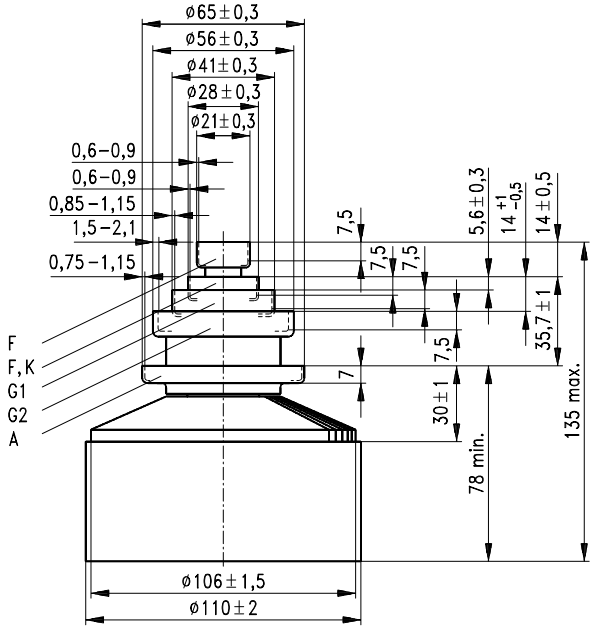
Coaxial metal-ceramic tetrode, forced-air-cooled, for frequencies up to 1000 MHz. The tube is especially suitable for TV transmitters and TV translators, band IV/V.



Dimensions in mm

Approx. weight 2,3 kg

Heating

Heater voltage	U_F	6,0	V [1]
Heater current	I_F	≈ 34	A
Heating: direct			
Cathode: thoriated tungsten			

Characteristics

Emission current @ $U_A = U_{G2} = U_{G1} = 60$ V	I_{em}	6,0	A
Amplification factor of screen grid @ $U_A = 1$ kV, $U_{G2} = 400$ to 600 V, $I_A = 1$ A	μ_{g2g1}	7,0	
Transconductance @ $U_A = 1$ kV, $U_{G2} = 400$ V, $I_A = 1{,}5$ A	s	40	mA/V

Capacitances

Cathode/control grid	c_{kg1}	≈ 40	pF
Cathode/screen grid	c_{kg2}	≈ 1,4	pF
Cathode/anode	c_{ka}	≈ 0,02	pF [2]
Control grid/screen grid	c_{g1g2}	≈ 50	pF
Control grid/anode	c_{g1a}	≈ 0,18	pF [2]
Screen grid/anode	c_{g2a}	≈ 8,20	pF [3]

Accessories

Cavity band IV/V	on request

1) The heater voltage will be determined by the tube manufacturer for each individual application taking into account the respective operating conditions. The heater data specified above are guideline values.
2) Measured by a Ø 50 cm screening plate in the screen-grid terminal plane.
3) Measured by a Ø 50 cm screening plate in the anode ceramic plane.

Amplifier for TV transmitters and TV translators with common vision and sound carrier transmission, grounded control-grid screen-grid circuit, vision-to-sound ratio 10:1, negative modulation, standard G

Maximum ratings

Frequency	f	1000	MHz
Anode voltage (dc)	U_A	5,0	kV
Screen grid voltage (dc)	U_{G2}	650	V
Control grid voltage (dc)	U_{G1}	– 200	V
Cathode current (dc)	I_K	2,0	A
Peak cathode current	$I_{K\,M}$	6,0	A
Anode dissipation	P_A	4,5	kW
Screen grid dissipation	P_{G2}	25	W
Control grid dissipation	P_{G1}	5,0	W

Operating characteristics

Frequency	f	800	MHz
Bandwidth (1 dB)	B	10	MHz
Output power, sync level	$P_{2\,SY}$	1,10	kW [1]
Gain	V_p	15,5	dB
3-tone intermodulation ratio	a_{IM3}	≥ 52	dB
Anode voltage (dc)	U_A	4,0	kV
Screen grid voltage (dc)	U_{G2}	400	V
Zero-signal anode current (dc)	$I_{A\,0}$	0,5	A [2]
Anode current (dc), black level	$I_{A\,SW}$	0,8	A
Screen grid current (dc), black level	$I_{G2\,SW}$	5,0	mA
Control grid current (dc), black level	$I_{G1\,SW}$	< 2	mA

1) @ cavity output.
2) Set with U_{G1} approx. – 48 V.

TV vision transmitter,
grounded control-grid screen-grid circuit, negative modulation, standard G

Maximum ratings

Frequency	f	1000	MHz
Anode voltage (dc)	U_A	5,0	kV
Screen grid voltage (dc)	U_{G2}	650	V
Control grid voltage (dc)	U_{G1}	– 200	V
Cathode current (dc)	I_K	2,0	A
Peak cathode current	$I_{K\,M}$	6,0	A
Anode dissipation	P_A	4,5	kW
Screen grid dissipation	P_{G2}	25	W
Control grid dissipation	P_{G1}	5,0	W

Operating characteristics

Frequency	f	800	MHz
Bandwidth (1 dB)	B	10	MHz
Output power, sync level	$P_{2\,SY}$	2,20	kW [1])
Gain	V_p	15,5	dB
Anode voltage (dc)	U_A	4,0	kV
Screen grid voltage (dc)	U_{G2}	400	V
Zero-signal anode current (dc)	$I_{A\,0}$	0,5	A [2])
Anode current (dc), black level	$I_{A\,SW}$	1,5	A
Screen grid current (dc), black level	$I_{G2\,SW}$	5,0	mA
Control grid current (dc), black level	$I_{G1\,SW}$	< 2	mA

1) @ cavity output.
2) Set with U_{G1} approx. – 48 V.

Tube mounting

Axis vertical, anode up or down.

Maximum tube surface temperature

The temperature of the electrode terminals and ceramic insulators must not exceed 250 °C. For keeping below this maximum temperature an air flow is required to cool the terminal rings. For this purpose the terminal contacts must be designed for providing a uniform cooling effect.

Forced-air cooling

The minimum air flow rate required for maximum anode dissipation is given in the cooling air diagram, valid for 45 °C inlet temperature at 1 bar air pressure (sea level). The cooling air must be supplied from the electrode terminal side. For detailed information on forced-air cooling refer to “Explanations on Technical Data”.

Automatic heating power regulation

Recommendations for automatic heating power stabilization are contained in the instruction “UHF TV Tetrodes, Heating Power Adjustment”, which is supplied on request.

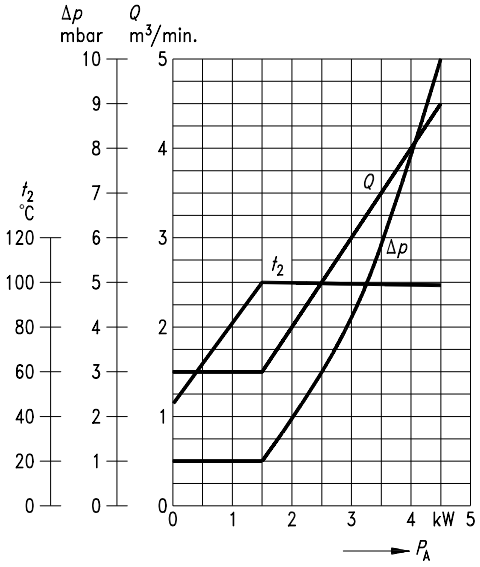
Safety precautions

The section “Safety precautions” under “Explanations on Technical Data” describes how the tube is to be protected against damage due to electric overload or insufficient cooling.

Transmitter off-periods

Frequent switching of the heating reduces lifetime. So the heating (and cooling) should be left on during transmitter off-periods of up to two hours. Continuous heating with reduced power (black heating) should be provided for longer off-periods.

Cooling air diagram



The cooling air is supplied from the electrode terminal side.

Air pressure = 1 bar
t_1 = 25 °C

$U_{G1} = f(U_A)$
U_{G2} = 400 V

Parameter = I_A ——————
Parameter = I_{G2} —·—·—·—·—·—·—
Parameter = I_{G1} — — — — — — —