

DB944 产品样本

该管型为采用网状钨钨极、热解石墨栅，同轴型电极结构的金属陶瓷四极管，适宜在 10kW 电视发射机中作末级功率放大，工作频率最高可达 300MHz，可与 TH375 互换使用。



1. 基本特性

1. 1 阴极特性

加热方式	直热式
加热电压 (U_f , AC or DC)	10.0V
加热电流 (I_f)	约 86A

1. 2 静态特性

阴极放射 ($U_a=U_{g1}= U_{g2}=300V$)	40A
内放大系数 ($U_a=2kV$, $U_{g2}=600$ to $1000V$, $I_a=3A$)	7.5
跨导 ($U_a=2kV$, $U_{g2}=800V$, $I_a =2.5$ to $3.5A$)	70mA/V
极间电容	
阴极—控制栅	76pF
控制栅—帘栅	122pF
帘栅—阳极	22pF
阴极—阳极	0.07pF
控制栅—阳极	0.75pF
帘栅—阴极	5.5pF

2 最大额定值

频率	f	250	MHz
阳极直流电压	U_a	5.5	kV
帘栅直流电压	U_{g2}	1000	V
控制栅直流电压	U_{g1}	-250	V
峰值阴极电流	I_{km}	35	A
阳极耗散功率	P_a	12	kW
控制栅耗散功率	P_{g1}	50	W
帘栅耗散功率	P_{g2}	150	W

3 典型工作状态

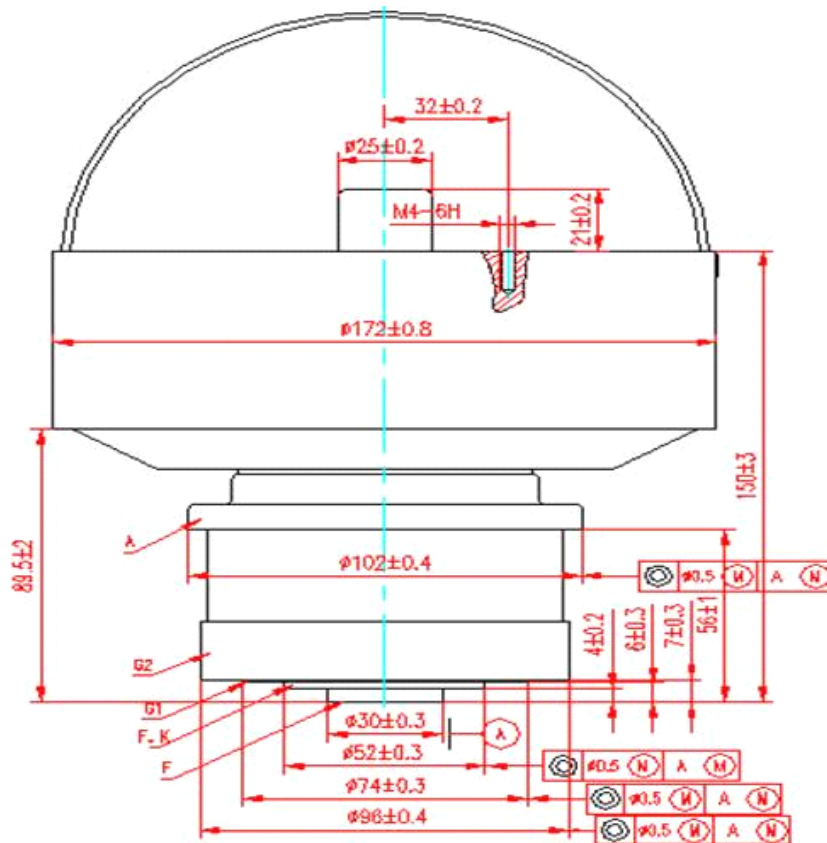
电视图像放大（栅地回路，不调制）

频率	220	220	220	MHz
带宽(-3dB)	12	18	12	MHz
带宽(-1.2dB)	7	10	7	MHz
同步顶输出功率	16	12	12	kW
黑电平输出功率	9	6.6	6.6	kW
阳极电压	5.2	4	4.8	kV
帘栅电压	900	800	800	V
控制栅电压	-85	-75	-75	V
同步顶控制栅峰值电压	170	140	130	V
黑电平阳极电流	3.8	3.7	3.1	A
黑电平帘栅电流	20	110	100	mA
黑电平控制栅电流	50	60	30	mA
黑电平阳极输入功率	19.8	14.9	14.9	kW
同步顶激励功率	46	30	10	W
黑电平阳极耗散功率	10.8	8.3	8.3	kW
黑电平帘栅耗散功率	110	88	80	W
黑电平控制栅耗散功率	2	25	2	W
阳极负载电阻	570	400	600	Ω

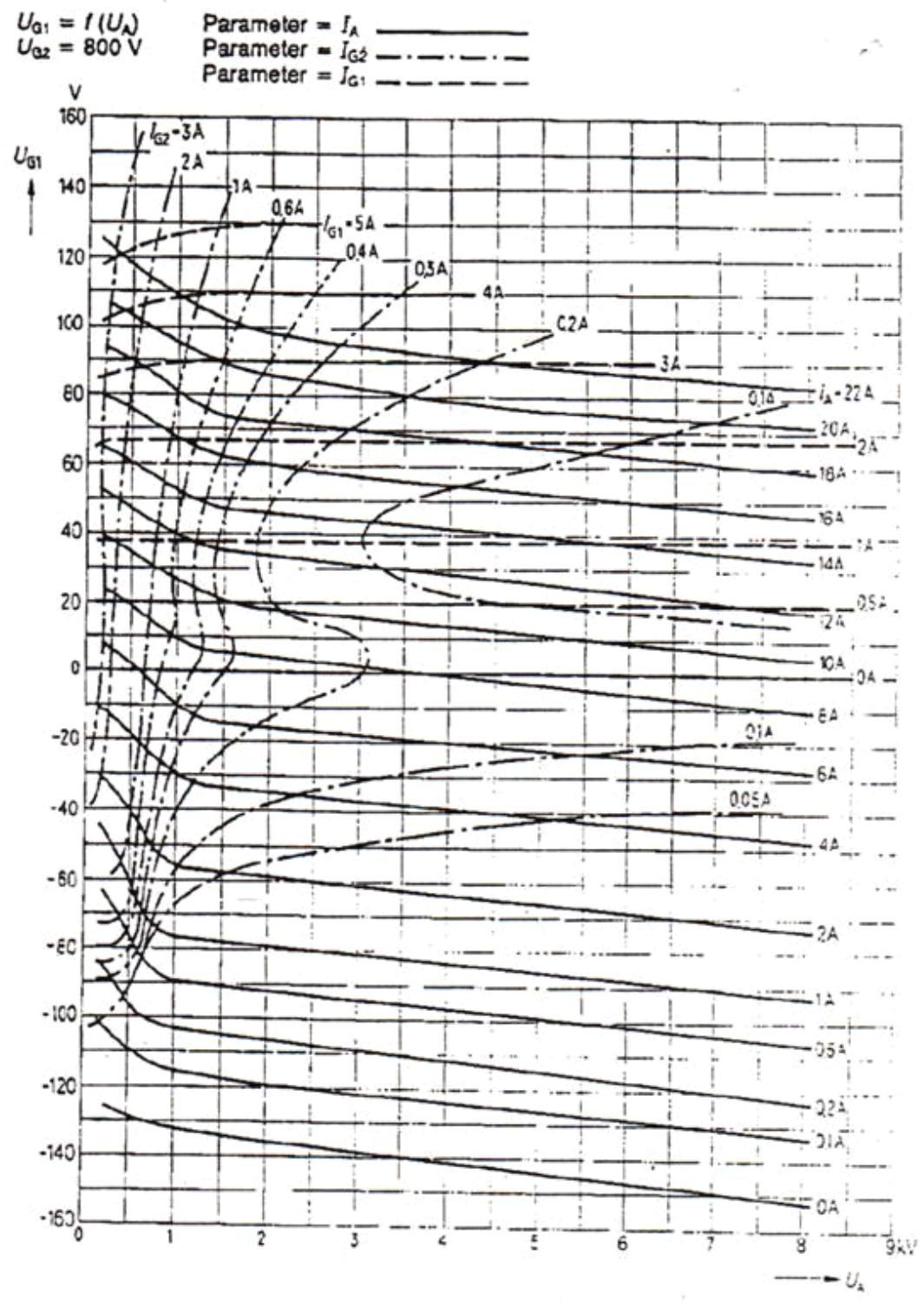
电视用合放式放大器（栅地回路，图像对伴音比为 10: 1）:

频率	220	220	MHz
带宽	10	10	MHz
同步顶输出功率	5.5	2.2	kW
三音互调比	≥ 58	≥ 60	dB
阳极电压	4.7	3.6	kV
帘栅电压	850	850	V
控制栅电压	-70	-70	V
黑电平阳极电流	2.8	2.25	A
黑电平帘栅电流	80	0	mA
黑电平控制栅电流	20	0	mA
黑电平阳极输入功率	13.2	8.1	kW
同步顶激励功率	150	90	W

4 产品外形图



5 恒流特性曲线



DB944 TETRODE

Coaxial metal-ceramic tetrode for frequencies up to 300MHz, forced-air-cooled; particularly suitable for TV transmitters in grounded control-grid screen-grid circuit. The Xuguang's DB944 could be used instead of the TH375.

1 General Characteristics

1. 1 Cathode Characteristics

Heating	Direct
Heater Voltage (U_f , AC or DC)	10.0V
Heater Current (I_f)	Appr.86A

1. 2 Feature Characteristics

Cathode Emission Current ($U_a=U_{g1}=U_{g2}=300V$)	40A
Internal Amplification Factor ($U_a=2kV$, $U_{g2}=600$ to $1000V$, $I_a=3A$)	7.5
Transconductance ($U_a=2kV$, $U_{g2}=800V$, $I_a=2.5$ to $3.5A$)	70mA/V
Interelectrode Capacitances	
Cathode — Control-grid	76pF
Control-grid — Screen-grid	122pF
Screen-grid — Anode	22pF
Cathode — Anode	0.07pF
Control-grid — Anode	0.75pF
Screen-grid — Cathode	5.5pF

2 Maximum Ratings

Frequency	f	250	MHz
Anode DC Voltage	U_a	5.5	kV
Screen-grid DC Voltage	U_{g2}	1000	V
Control-grid DC Voltage	U_{g1}	—250	V
Peak Cathode Current	I_{km}	35	A

Anode Dissipation	P_a	12	kW
Control-grid Dissipation	P_{g1}	50	W
Screen-grid Dissipation	P_{g2}	150	W

3 Typical operation

TV vision transmitter

(Grounded control-grid screen-grid circuit, negative modulation)

Frequency	220	220	220	MHz
Bandwidth (-3dB)	12	18	12	MHz
Bandwidth (-1.2dB)	7	10	7	MHz
Output power, sync. Level	16	12	12	kW
Output power, black level	9	6.6	6.6	kW
Anode voltage	5.2	4	4.8	kV
Screen grid voltage	900	800	800	V
Control grid voltage	-85	-75	-75	V
Peak RF control grid voltage, Sync. Level	170	140	130	V
Anode current, black level	3.8	3.7	3.1	A
Screen grid current, black level	20	110	100	mA
Control grid current, black level	50	60	30	mA
Anode input power, black level	19.8	14.9	14.9	kW
Drive power, sync. Level	46	30	10	W
Anode dissipation, black level	0.8	8.3	8.3	kW
Screen grid dissipation, black level	110	88	80	W
Control grid dissipation, black level	2	25	2	W
Anode load resistance	570	400	600	Ω

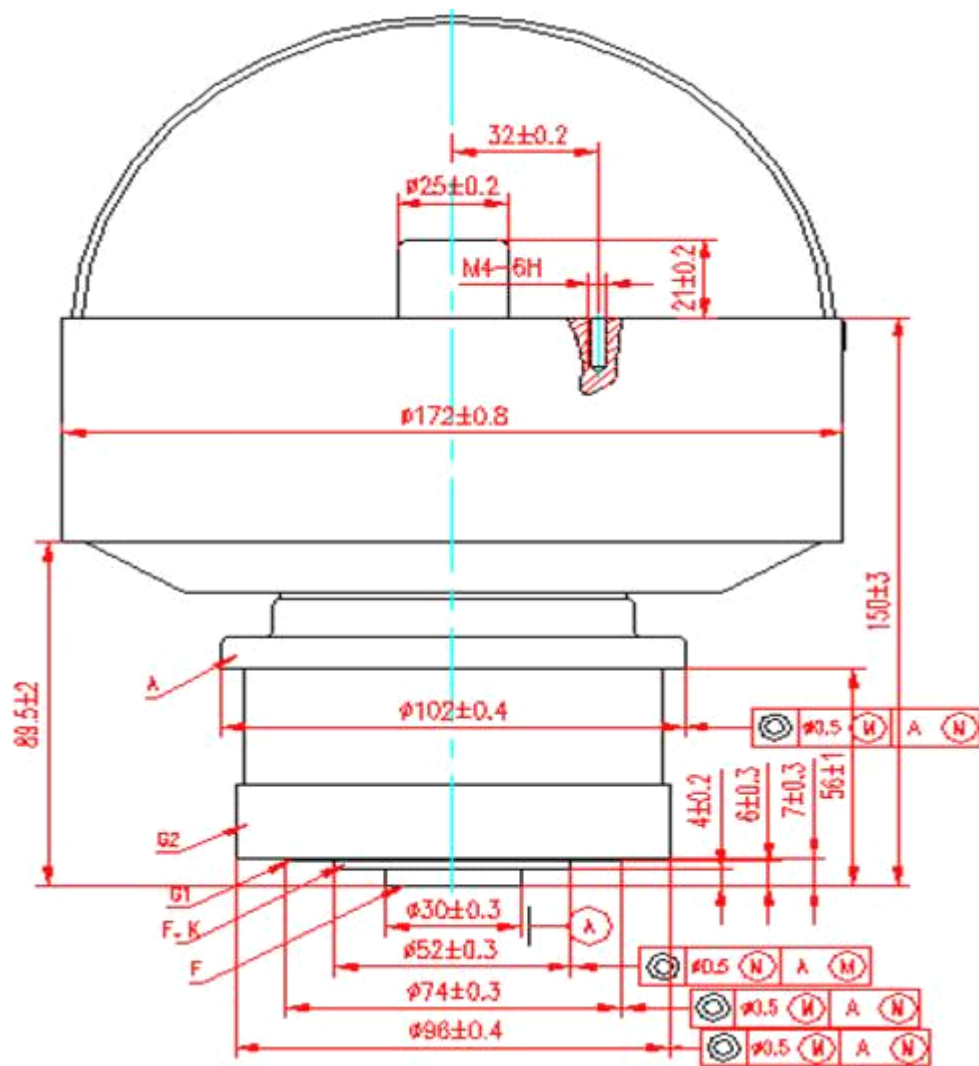
Combined vision and sound amplifier for TV translators

(Grounded control-grid screen-grid circuit, vision to sound ratio 10:1)

Frequency	220	220	MHz
Bandwidth	10	10	MHz
Output power, sync. Level	5.5	2.2	kW
3-tone intermodulation ratio	≥ 58	≥ 60	dB

Anode voltage	4.7	3.6	kV
Screen grid voltage	850	850	V
Control grid voltage	-70	-70	V
Anode current, black level	2.8	2.25	A
Screen grid current, black level	80	0	mA
Control grid current, black level	20	0	mA
Anode input power, black level	13.2	8.1	kW
Drive power, sync. Level	150	90	W

4 Product Outline Drawing



5 Constant current characteristics

