

## HIGH VOLTAGE REGULATOR OR SWITCH TUBE POWER TETRODE

Oil cooled power tetrode in metal-glass construction intended for use as high voltage regulator or switch tube for voltages up to 85kV and anode dissipations up to 1 kW average.

### QUICK REFERENCE DATA

		<u>Hold Off</u>	<u>Open(Pulse)</u>
Anode voltage	Av	80 kV	2 kV
Grid 2 voltage =Grid 1 voltage	Vg2=Vg1	-700V	<200 V
Anode current	Ia	<50 $\mu$ A	2.5 A
Grid 1 + Grid 2 current	Ig	-	<1.2 A

### HEATING: direct; thoriated tungsten filament, mesh type

Filament voltage	Vf	7.5	V $\pm$ 5%
Filament current	If	17	A
Filament Peak starting current	I <sub>fp</sub>	max. 85	A
Cold filament resistance	Rfo	53	mOhms

### TYPICAL CHARACTERISTICS

Measured at:	Va	4kV
	Vg2	500V
	Ia	300mA
Transconductance	S	10 mA/V
Amplification Factor	$u_{g2g1}$	6

### CAPACITANCES

Cathode to grid 1*	C <sub>cg1</sub>	$\approx$	12 pF
Grid 1 to Grid 2*	C <sub>g1g2</sub>	$\approx$	19 pF
Grid 2 to anode**	C <sub>g2a</sub>	$\approx$	6 pF

\*Grid 2 connected to anode

\*\* Grid 1 connected to cathode



**TEMPERATURE LIMITS**

Bulb Temperature	$T_{env}$	max.	150	°C
Temperature of pin seals	$T_{pin}$	max.	150	°C
Temperature of anode	$T_{anode}$	max.	250	°C

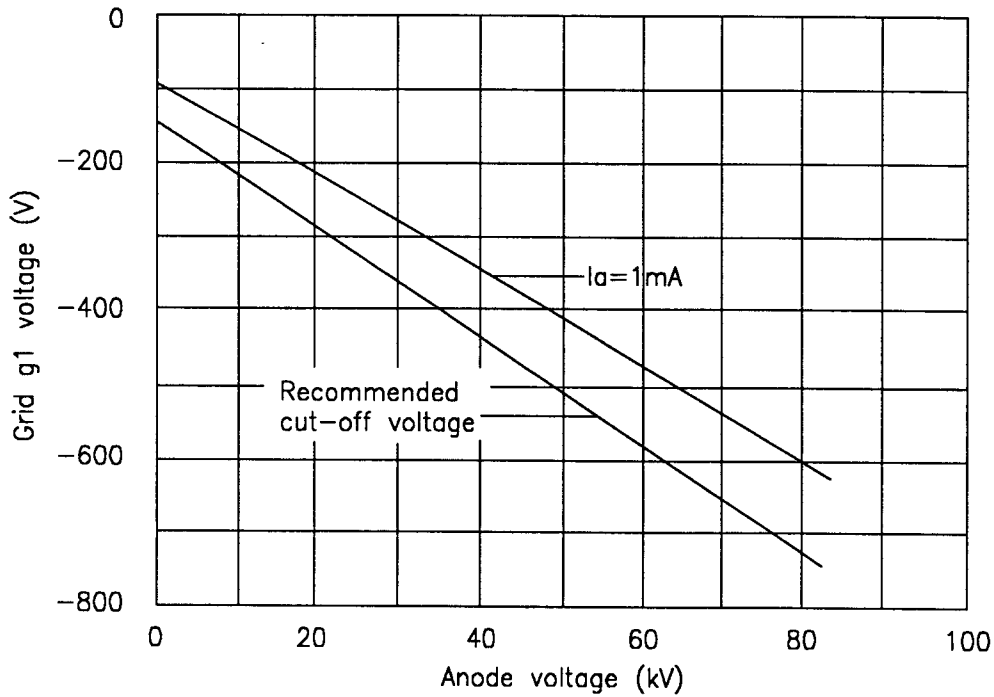
**COOLING**

Convection or forced; transformer oil

**LIMITING VALUES (Absolute maximum rating system)**

Anode voltage in oil	$V_a$	85	kV
Grid 2 Voltage (+ and -)	$V_{g2}$	1000	V
Grid 1 voltage	$-V_{g1}$	1000	V
Peak Cathode current	$I_{kp}$	5	A
Anode dissipation in oil*	$W_a$	1	kW
Grid 2 dissipation*	$W_{g2}$	75	W
Grid 1 dissipation*	$W_{g1}$	25	W

CUT-OFF CHARACTERISTICS  
for  $V_{g2}=500V$



\*-Average value.

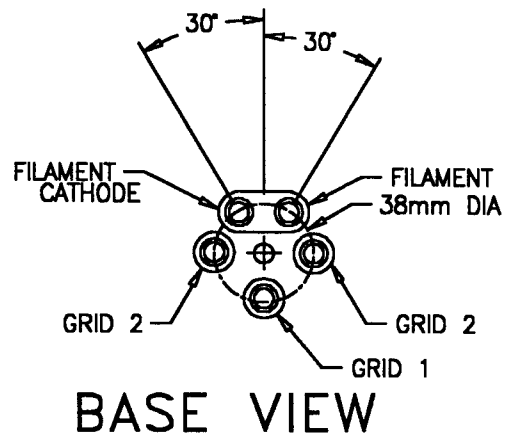
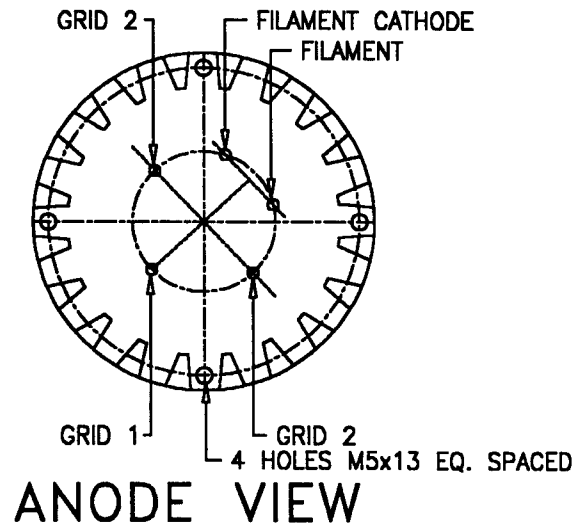
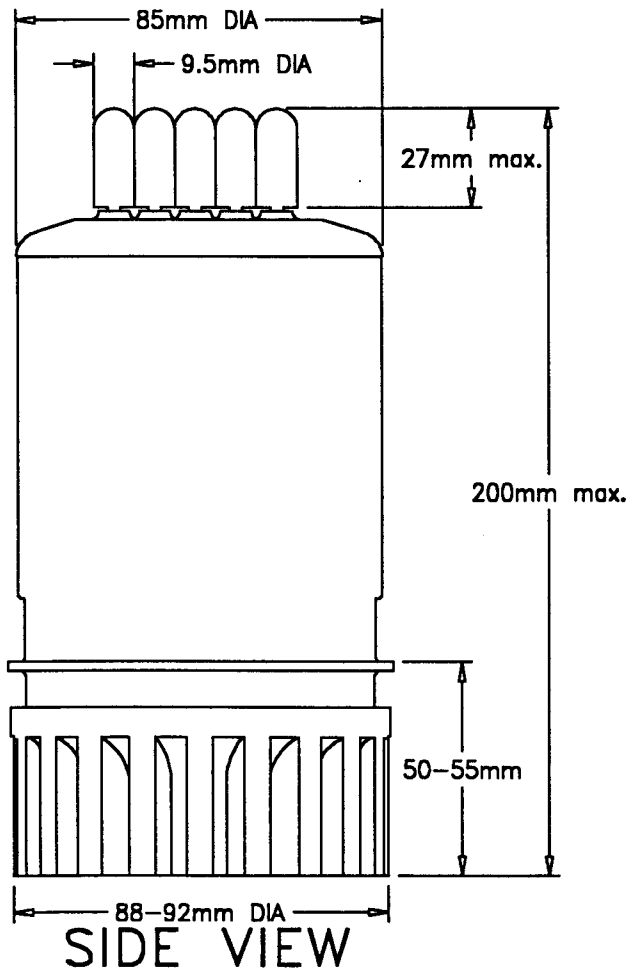
- For pulse operation the dissipation depends on voltage and current during pulse and duty cycle.
- For peak anode dissipation  $>50\text{kW}$ , pulse lengths  $>1\text{ s}$ , and special applications the manufacturer should be consulted for more detailed information.



**MECHANICAL DATA:**

Mounting Position: Vertical with anode up or down  
 Nett Mass: approx. 3.6 Kg  
 Base: super giant UTE 5A38  
 Socket: 2422 512 00001

**Outline Drawing**



## **Warning - Personal Safety Hazards**

### **High Temperature**

Do not come in contact with the AX5184 during the operation period or immediately after removing tube voltages. The temperature of the tube during operation often exceeds 200°C.

### **High Voltage**

The AX5184 operates at voltage ranges from 10 kilovolts to 85 kilovolts. Equipment must be designed with safety switches so that no one can come in contact with these potentially fatal voltages. Warnings should also be posted on the equipment.

### **X-Ray radiation**

High vacuum tubes operating above 10 kilovolts produce X-rays which are progressively more dangerous as the voltage increases. The AX5184 is a potential X-Ray hazard when operated in its normal rated voltage and current.

X-ray shielding must be provided on all sides of the AX5184 to provide adequate protection. If there is any doubt as to the adequacy of shielding, an expert in this field should be contacted to perform an X-Ray survey of the equipment.