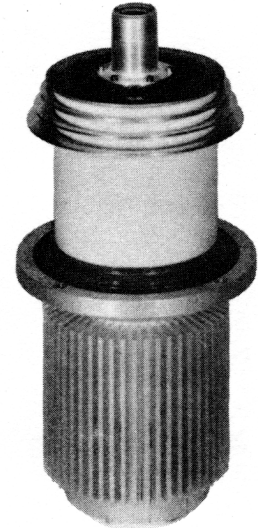




TH 580 TETRODE Vapotron

The tube TH 580 is a transmitting, vapor cooled tetrode of coaxial structure. It can be used as a CW oscillator, AF or RF power amplifier operating up to 100 MHz.

The anode fitted with a special radiator is capable to dissipate 100 kW. This power can be transferred to a secondary circuit at a temperature of about 100 °C.



GENERAL CHARACTERISTICS

Electrical

Type of cathode	thoriated tungsten
Heating	direct
	d.c. or a.c. single phase
Heater voltage	12.0 + 2 % V
Heater current, average	330 A
Surge current, maximum	1000 A
Interelectrode capacitances, approximate :	
Input, cathode grounded	460 pF
Output, cathode grounded	60 pF
Input, g1 grounded	190 pF
Output, g1 grounded	60 pF
Average amplification factor g1 - g2	3
Transconductance (for 5 A anode current)	60 mA/V

Mechanical

Mounting position	vertical, anode down
Anode cooling	vaporization of water
Envelope and terminals maximum temperature	200 °C
Cooling of the seals and the electrode terminals *	forced air
Dimensions	see drawing

Accessory

R.F. Connector (Filament - Cathode - grid g1 - grid g2 connection assembling)	SE 34556
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* The cooling air flow must be established before application of any electrode voltage and maintained during three minutes at least after heater voltage has been removed.


MAXIMUM RATINGS AND TYPICAL OPERATION
RF POWER AMPLIFIER - CLASS C TELEGRAPHY
Maximum ratings

DC anode voltage	15	12	kV
DC grid n ^o 2 voltage	1500	1500	V
Grid bias voltage	-1000	-1000	V
Peak cathode current	110	90	A
Anode dissipation	100	100	kW
Grid n ^o 2 dissipation	1900	1900	W
Grid n ^o 1 dissipation	700	700	W
Frequency	30	100	MHz

Typical operation

DC anode voltage	11.3	kV
DC grid n ^o 2 voltage	740	V
Grid bias voltage	-470	V
RF grid n ^o 1 voltage	610	V
DC anode current	11.3	A
DC grid n ^o 2 current, approximate	1.6	A
DC grid n ^o 1 current, approximate	0.5	A
Power output approximate	100	kW

RF POWER AMPLIFIER - CLASS B
Maximum ratings

DC anode voltage	15	12	kV
DC grid n ^o 2 voltage	1500	1500	V
Grid bias voltage	-1000	-1000	V
Peak cathode current	110	90	A
Anode dissipation	100	100	kW
Grid n ^o 2 dissipation	1900	1900	W
Grid n ^o 1 dissipation	700	700	W
Frequency	30	100	MHz

Typical operation

DC anode voltage	10.5	kV
DC grid n ^o 2 voltage	780	V
Grid bias voltage	-320	V
RF grid n ^o 1 voltage	+400	V
DC anode current	15	A
Anode current at zero signal	1	A
DC grid n ^o 2 current, approximate	0.5	A
Driving power	4.5	kW
Power output, approximate	108	kW
Efficiency	67	%



TUBE PROTECTION AND FEEDING INSTRUCTIONS

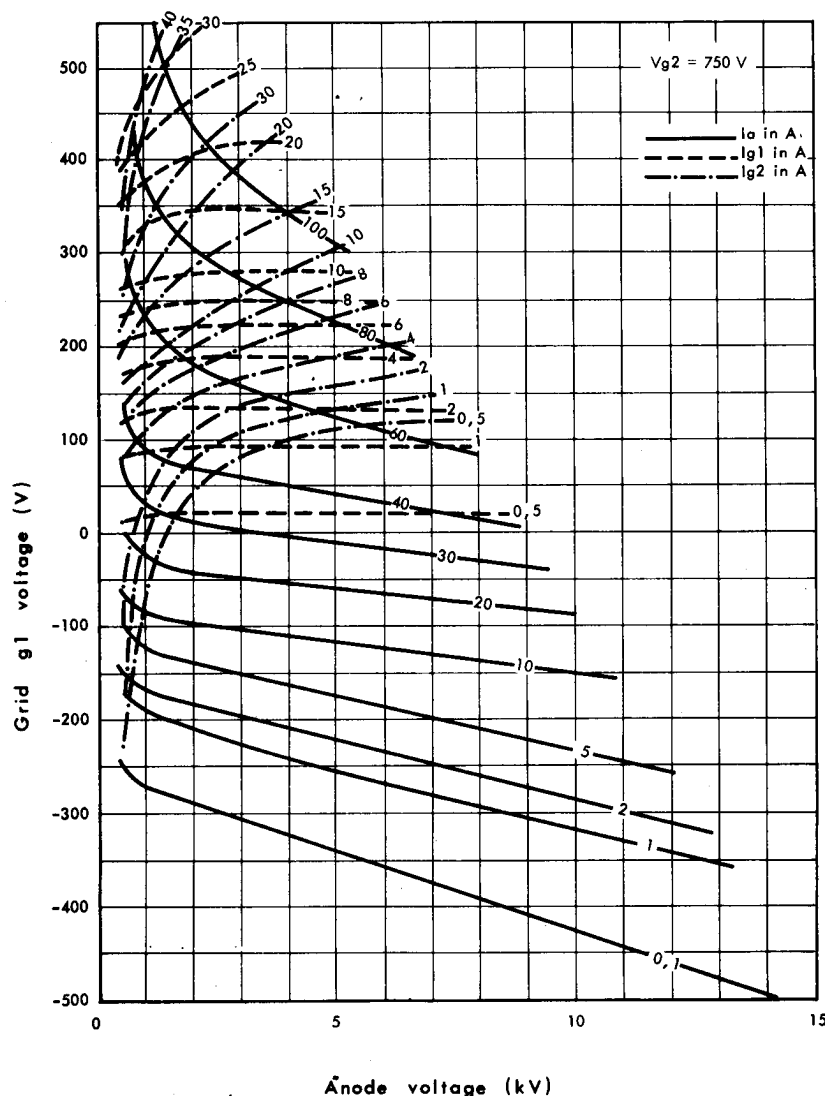
In order to achieve long tube life, maximum operating efficiency and circuit stability consistent with the full tube capability the following instructions should be strictly observed.

I - ELECTRODES FEEDING ORDER - Apply successively :

- 1 - Nominal V_f during 60 seconds
- 2 - Grid bias
- 3 - Anode voltage
- 4 - Screen voltage
- 5 - Driving voltage

II - SECURITY DEVICES AGAINST ANODE, SCREEN, GRID OVERCURRENTS

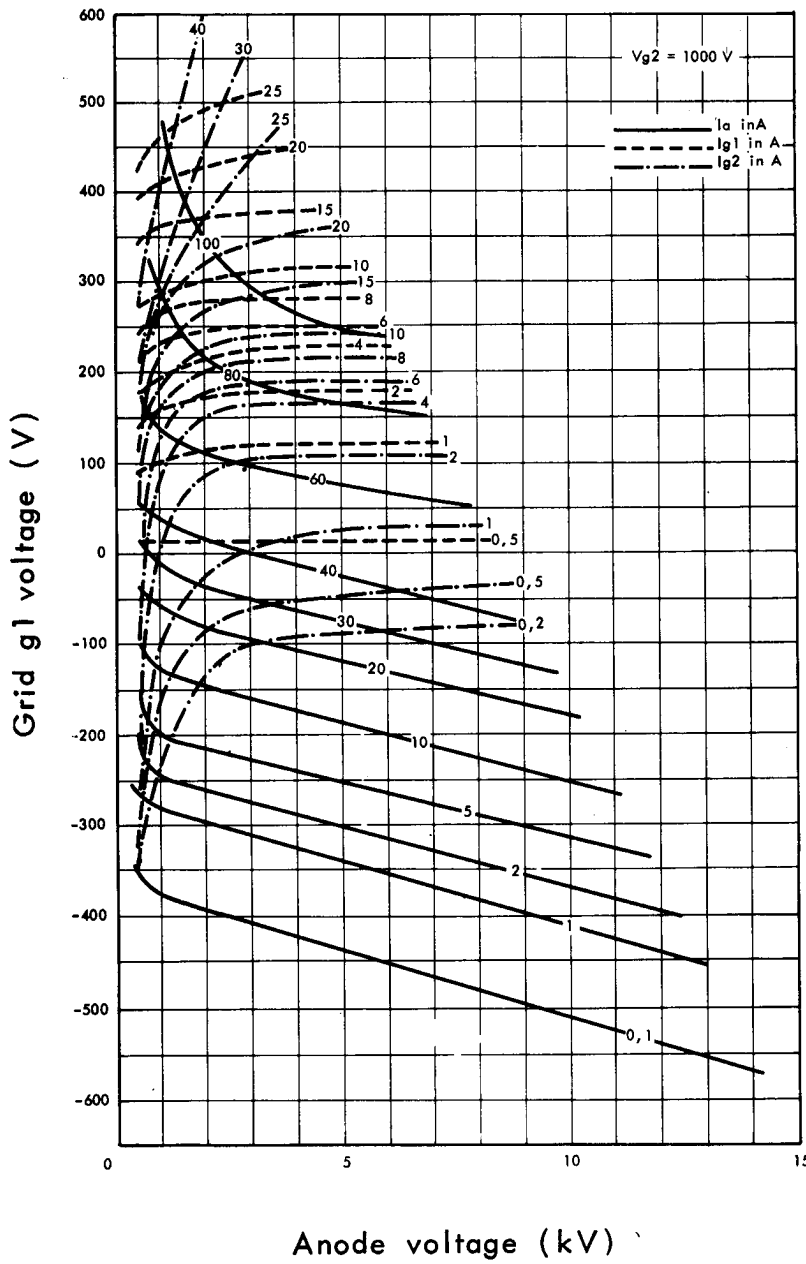
- 1 - Overcurrents due to unproper utilisation condition : The protection can be achieved by 3 relays in series, respectively in grid, screen and anode circuits. These relays are adjusted so asto operate when a current equal to $1.5 I_{max}$ is attained, I_{max} being the normal current used in the considered operating conditions. When one of these relays operates, the driving voltage and the screen and anode voltage are simultaneously cut-off.
- 2 - Overcurrent due to stray oscillations or electrode arcing : The protection can be made by the use of 3 rapid cut-off security devices (grid, screen, anode) acting for a current equal to $5 I_{max}$, I_{max} being the normal current used in the considered operating conditions. Each of these 3 systems, acting on the 2 others should short-circuit driving, screen and anode voltages and eventually grid bias voltage with a total delay lower than 30 microseconds.



CONSTANT CURRENT
CHARACTERISTICS

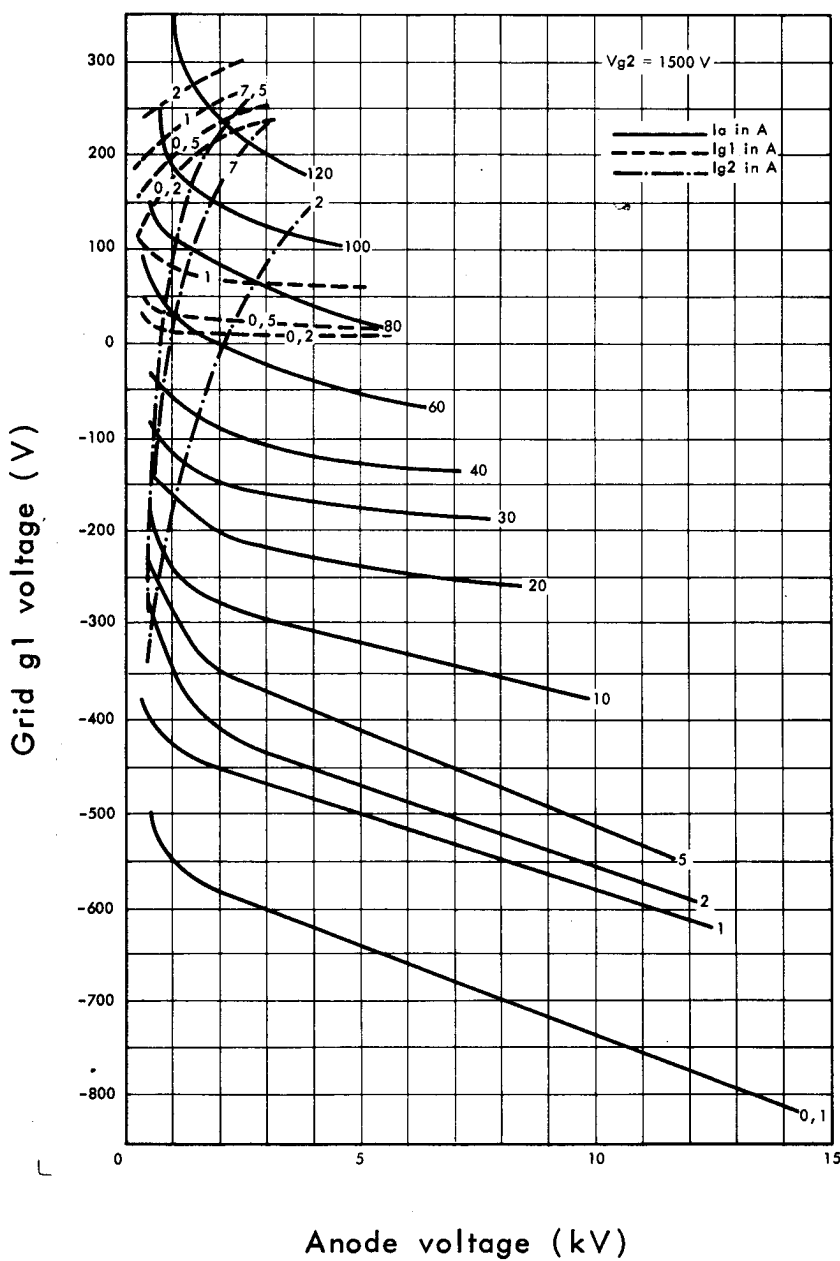


CONSTANT CURRENT CHARACTERISTICS



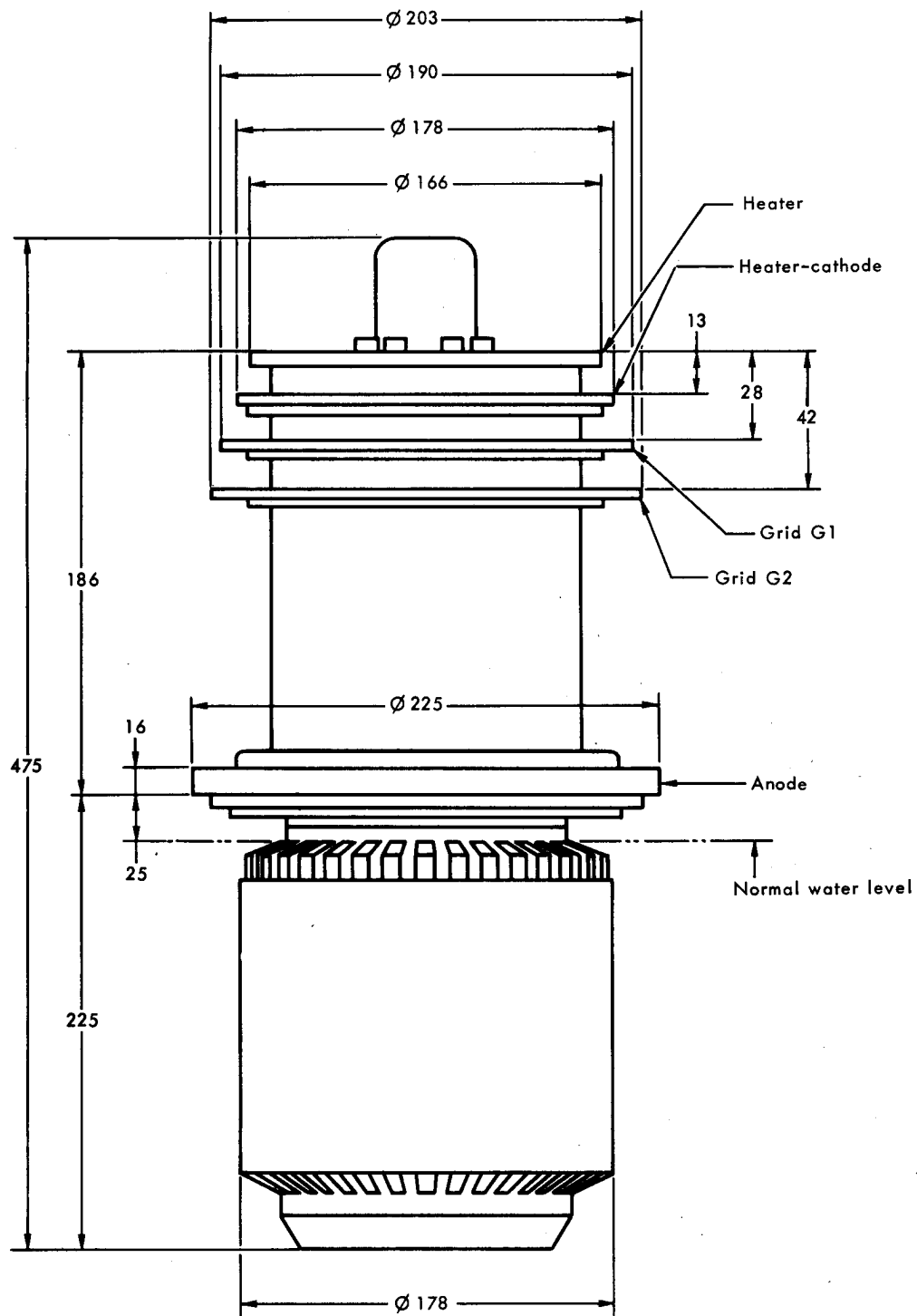


CONSTANT CURRENT CHARACTERISTICS





OUTLINE DRAWING



Dimensions in mm.

