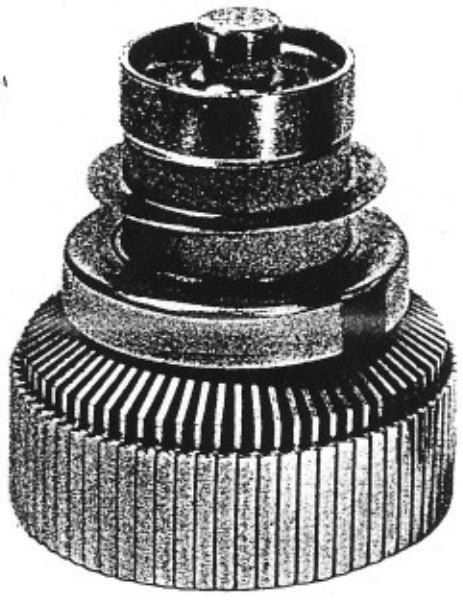
TH 294 TRIODE



The TH 294 is a forced air cooled metal-ceramic triode of planar structure.

It can be used as a CW oscillator or RF power amplifier at frequencies up to 1 000 MHz.

The anode is capable to dissipate 700 Watts.

GENERAL CHARACTERISTICS

Electrical

Type of cathode	oxide-coated	
Heating	indirect	
Heater voltage (1)	6.3 ± 5%	V
Heater current, approximate	5.5	A
Cathode heating time, minimum	180	s
Direct interelectrode capacitances, approximate :		
Cathode-grid (cold)	15	pF
Grid-anode (total)	8.5	pF
Cathode-anode (cold)	0.1	pF
Amplification factor (average)	90	
Transconductance (Ia = 250 mA)	45 000	µ umhos

Mechanical

Mounting position	any	
Anode cooling	forced air	
Minimum air flow (2)	450	l/mn
Corresponding pressure drop	0.05	millibar
Maximum inlet air temperature	45	°C
Maximum outlet air temperature	100	°C
Maximum temperature on the plate core	250	°C
Maximum temperature at the grid and cathode terminals (3)	250	°C
Net weight, approximate	950	g
Dimensions	see drawing	

MAXIMUM RATINGS and TYPICAL OPERATING CONDITIONS

Maximum ratings

DC anode voltage	2.2	kV
DC grid voltage	-200	V
DC anode current	0.6	A
DC grid current	0.12	A
Peak cathode current	2.5	A
Plate dissipation	700	W
Grid dissipation	4.0	W
Frequency	1 000	MHz

RADIO-FREQUENCY POWER AMPLIFIER
CLASS C TELEGRAPHY

Grounded grid circuit

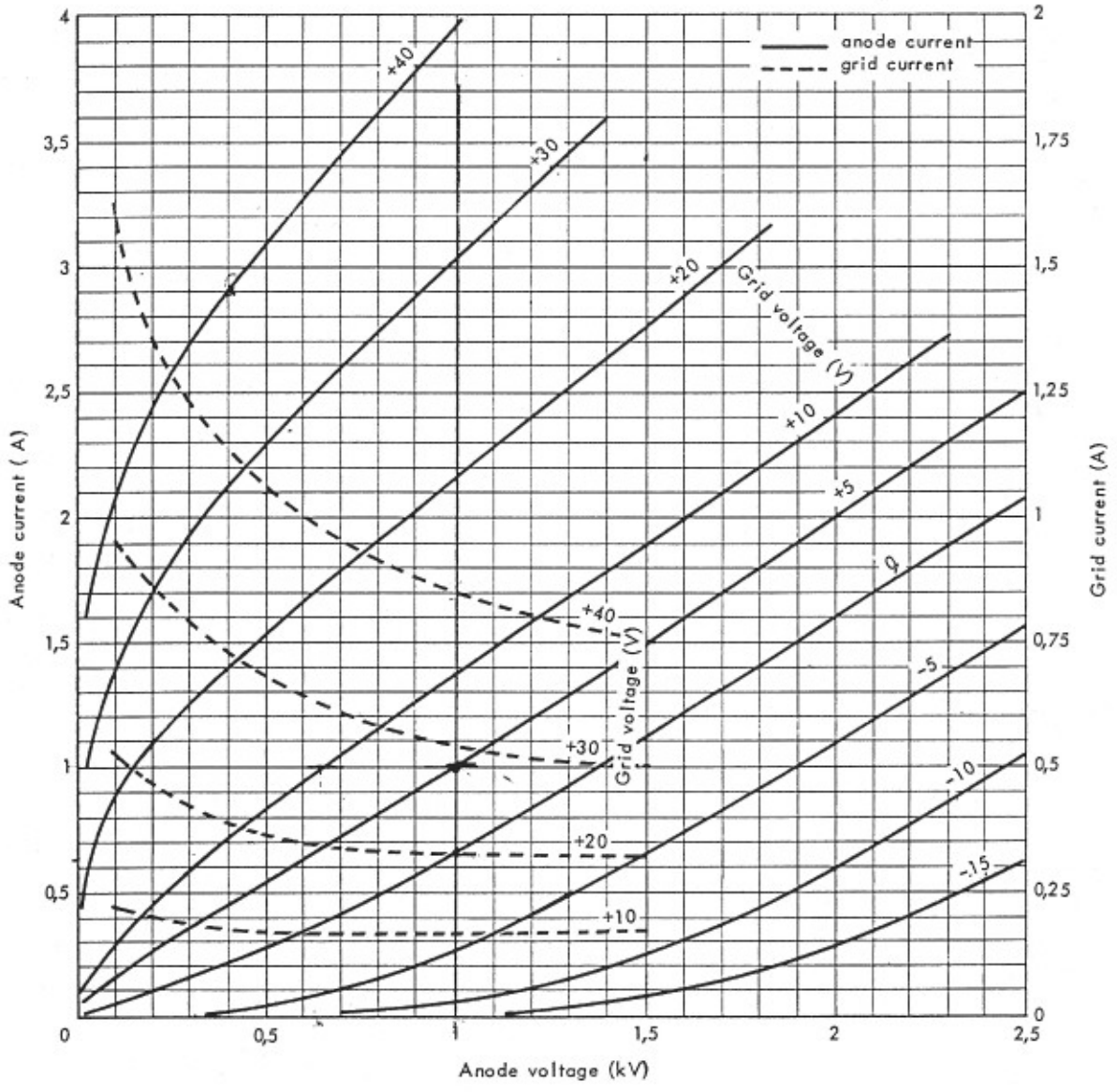
Typical operation

DC anode voltage	1	2,5	kV
Grid bias voltage	-33	-55	V
DC anode current	0.3	0.45	A
DC grid current, approximate	30	45	mA
Driving power, approximate	20	45	W
Power input	300	900	W
Anode dissipation	150	400	W
Output power, approximate (4)	130	450	W
Frequency	1000	1000	MHz

THOMSON-CSF
COMPOSANTS ELECTRONIQUES

CURRENT CHARACTERISTICS

POTENTIAL REFERRED TO CATHODE



RADIO-FREQUENCY POWER AMPLIFIER
CLASS B TELEVISION SERVICE

Grid negative modulation and positive synchronization

Typical operation

Frequency	800	800	800	MHz
Bandwidth	7	7	7	MHz
DC anode voltage	1	1.3	1.7	kV
DC grid bias voltage	-13	-19	-26	V
Peak RF driving voltage :				
Synchronizing level	25	34	48	V
Pedestal level	21	30	42	V
DC anode current :				
Synchronizing level	0.26	0.37	0.52	A
Pedestal level	0.20	0.27	0.40	A
DC grid current approximate :				
Synchronizing level	0.05	0.08	0.12	A
Pedestal level	0.04	0.06	0.09	A
Driving power, approximate :				
Synchronizing level	10	18	36	W
Pedestal level	6	11	22	W
Output power, approximate (4) :				
Synchronizing level	100	200	400	W
Pedestal level	60	120	240	W

(1) In high frequency operation, the cathode is subjected to considerable back bombardment, which raises its temperature.
After the circuit has been adjusted for proper tube operation, the heater voltage must be reduced to prevent overheating of the cathode which resulting short life. Ask for information for any special application.

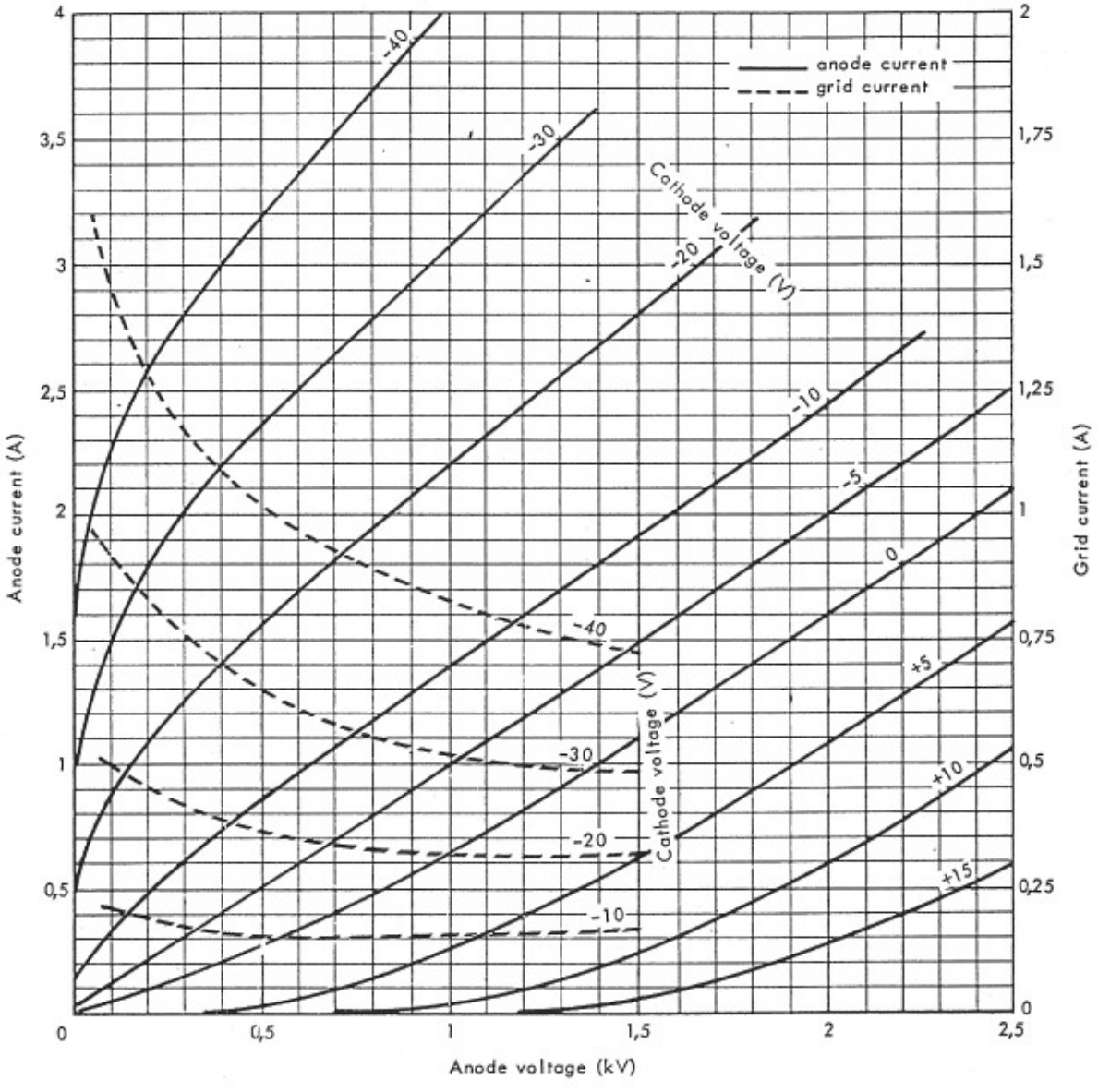
(2) Anode dissipation 700 W. Inlet air temperature 25°C.

(3) For maximum life, this temperature should not exceed 200 °C.

(4) With 80% circuit efficiency and power transferred from driver stage included.

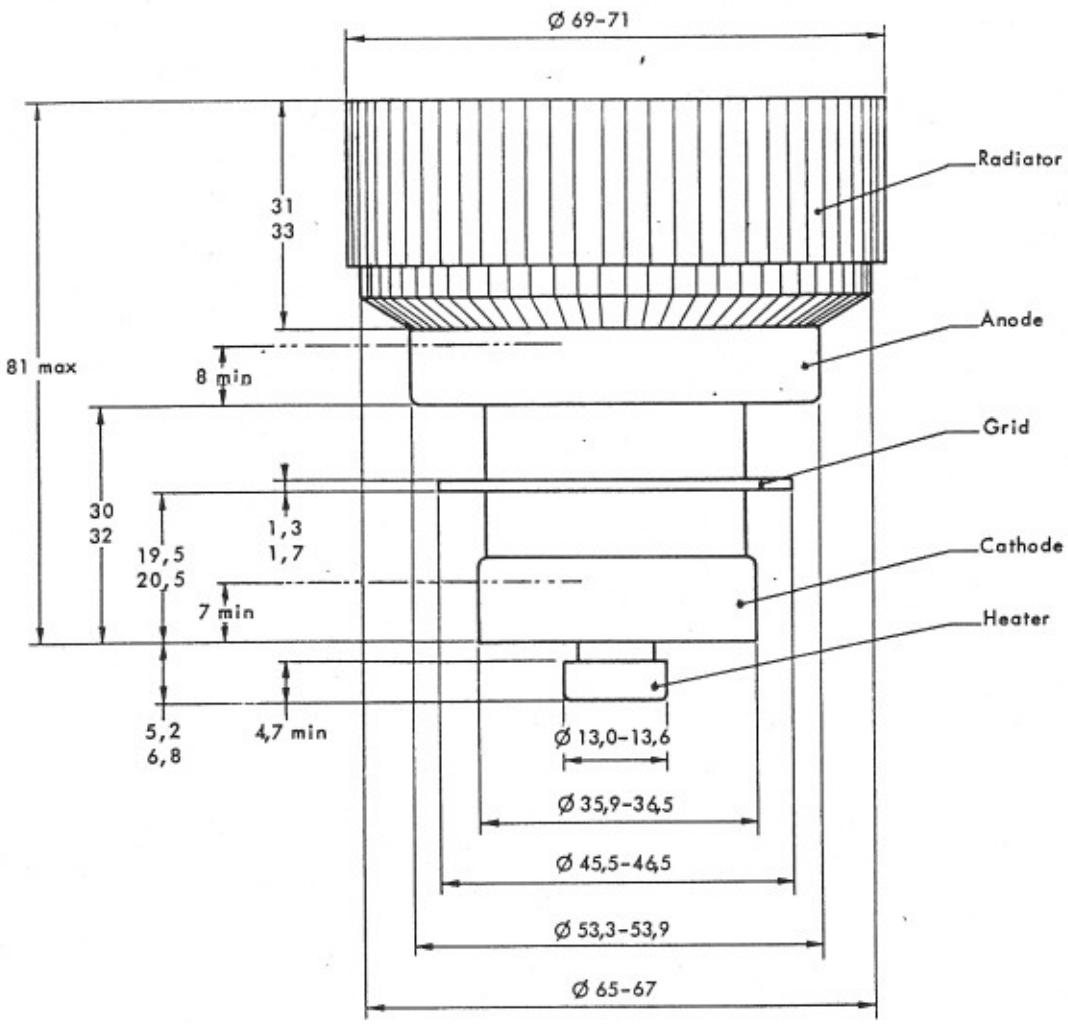
CURRENT CHARACTERISTICS

POTENTIAL REFERRED TO GRID



THOMSON-CSF

OUTLINE DRAWING



Dimensions in mm.